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REINVENTING YOUR WAREHOUSE/DC:

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info snacks

BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION

To choose the right warehouse...

- 1. Bundle services together.** Find a warehouse that offers delivery, too.
- 2. Location.** Look for a warehouse in a region with high product delivery and close to transportation arteries for easy access to metro locations.
- 3. Technology.** Select a warehouse equipped with EDI integration, continual shipment visibility, order and inventory monitoring, and the ability to integrate with customers' ERP systems.

— A. Duie Pyle

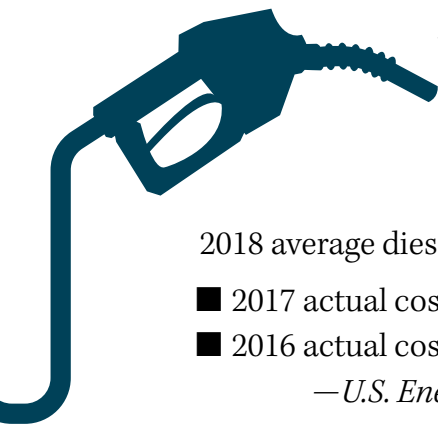


"Would you build an entire church for Easter Sunday?"

— Dale Rogers, professor and director, Frontier Economics Logistics Lab, Arizona

State University on deciding how many large and permanent warehouses your organization needs. If a substantial percentage of volume occurs in one quarter each year, one or two permanent facilities, supplemented with several flexible warehouse operations, may cost effectively meet demand.

(See *Reinventing Your Warehouse*, p. 54)



\$3.12/ GALLON

2018 average diesel price forecast

- 2017 actual cost: \$2.65/gallon
- 2016 actual cost: \$2.31/gallon

—U.S. Energy Department

Nine Hundred Thousand

The number of new truck drivers needed to keep up with demand throughout the next decade.

(See *Viewpoint*, p. 50)



50%

of companies still aren't implementing any new logistics/supply chain technologies.

—Janeiro Digital survey
(See *Trends*, p. 37)

This is no time to find out that what you think is insurance, really isn't.

A tornado can rip a trailer to shreds — and everything inside of it. If you have an all-risk cargo insurance policy, you're definitely insured in the event of a natural disaster. But if you're still relying on the carrier's liability coverage or your commercial insurance policy to protect you, you may be in for a shock. You'll be amazed by what isn't covered. If something bad happens, nothing good can happen unless you have real cargo insurance.

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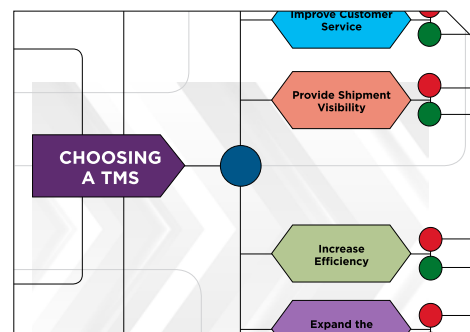
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The Linde Group's Joel Kamp directs the bulk scheduling center for North and South America, which pumps up 100 plants and depots.



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When sales of cast-iron cookware heat up, a well-known brand prepares a solution to expand manufacturing capacity and warehouse space.

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Warehouse improvements in layout and organization, docking, picking and receiving, fulfillment, and packaging can boost your bottom line and improve customer satisfaction.
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With so many choices available, shippers must truly understand what they want a Transportation Management System to accomplish in order to make the right selection.
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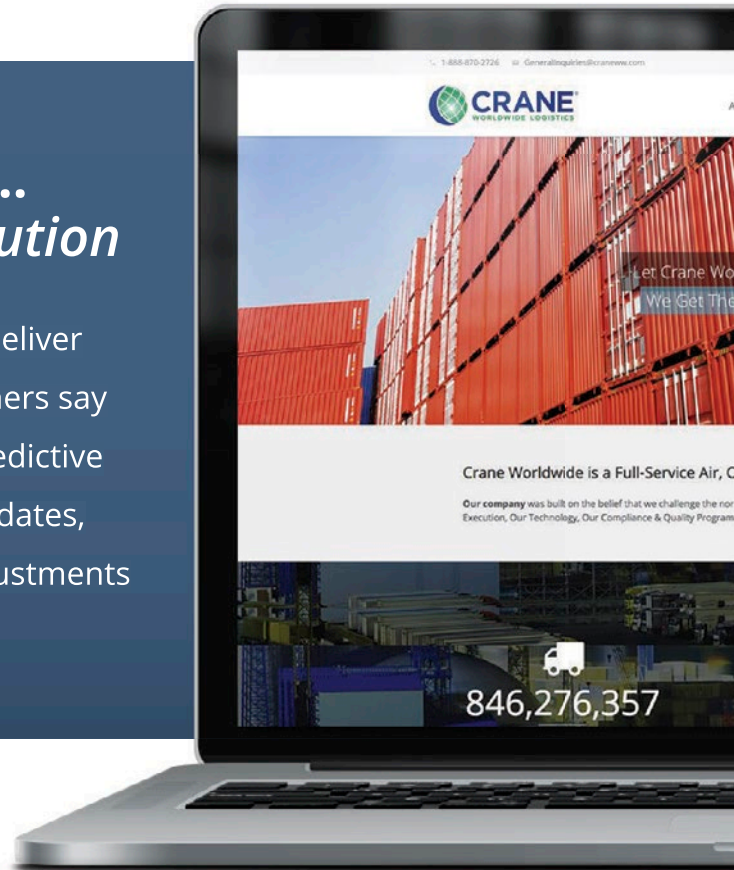
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which things will happen.

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Thanks to its strong global and fast-growing market, the St. Louis region is a leader in freight, setting records and gaining national and global significance.



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bit.ly/ManageSC_Risk



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bit.ly/ILMagPodcastPage

ONLINE COMMENTARY



How to Manage Supply Risk

In Uncertain Times bit.ly/ManageSC_Risk

For most organizations, it is not a matter of if but when a supply disruption will occur. Yet few have invested in the systems and programs needed to respond. Use this advice to prepare your supply chain for uncertainty.



How to Overcome Technology Roadblocks

bit.ly/OvercomeTechnologyRoadblocks

The disconnect between shippers, carriers, and customers is preventing blockchain from being applied. But if we don't work toward open collaboration, supply chains will remain stagnant.



Truck Driver Shortage: When Will Autonomous Trucks Fill the Gap?

bit.ly/DriverShortageGap

Here are the essential breakthroughs that have to occur before autonomous trucks can help address the driver shortage.

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CHECKING IN

Keith Biondo

Keith Biondo



Demanding Service

Is it time to say goodbye to the demand-driven supply chain? That was the startling question one company executive posed during a recent software provider's user group, according to press reports.

The executive delivered a one-two punch: One, a focus on the demand-driven supply chain can be misleading because the emphasis is on forecasting, not the end goal of the process, he said. Two, we should move to what he terms a "service-driven supply chain", which is the true goal of every supply chain process, he added.

Apart from the fact that "forecasting", by definition, is a projection pushed at the market, not listening to a demand signal, I have an answer to his question: Ah, no. It is not time to abandon demand-driven logistics. In fact, it is exactly the wrong time to abandon it.

We are standing on the brink of having AI empower the demand-driven supply chain, and blockchain providing a clear, instantaneous, and immutable stream of demand signals all the way back downstream to even the earliest demand chain stakeholder. Solutions-as-a-Service, and obsolescence for demand planning and demand forecasting are fast approaching. That transition will truly make the world your warehouse. And that transition is demand driven.

If all you have is a hammer, everything looks like a nail. Consequently, if you come at the issue from only a technology perspective, you miss the underpinnings of success. Even the best demand-forecasting technology is not the panacea many think it is, or think it was, *if it stands alone.*

Technology is only one leg of a three-legged best-practices stool. You need vision and commitment, and a path to adopting demand-driven logistics across your enterprise. Since 1981, this publication has been making the case for listening, finding that demand signal, hearing your customers' needs, and building the philosophical and operational structure, all the way back to your vendors if need be, to *serve* that need. *Service.*

Semantics aside, a demand-driven supply chain is actually a service-driven supply chain. But if the commitment and structure is not there, it is markedly difficult to match your customers' service expectations. For what exactly is a demand signal from your customers if not an expression of their wish for excellent service?

Did I say "wish"? I meant demand.

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A wide-angle photograph of a desert landscape. The foreground is filled with dry, brownish-yellow shrubs and grasses. In the middle ground, there are low, rolling hills or mountains with a similar dry appearance. The sky is a vibrant blue, filled with large, fluffy white clouds that add depth and texture to the scene. The overall lighting suggests a bright, sunny day.

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Good Question...

READERS WEIGH IN

How would you solve the warehouse labor shortage?

Make the job dynamic to attract and retain workers. Often, a warehouse role is one-dimensional. Operators can create job enrichment by cross-training workers and rotating them through all the functions required to run the warehouse. Also, connecting their specific job and function to the success of the company, and to the benefit of the customer, helps create a sense of purpose.

Michael Notarangeli

*Executive Vice President, Logistics
Maine Pointe*

Combine automation with incentives to employees who would be willing to learn the skills to increase productivity in our field.

Jessie L. Price

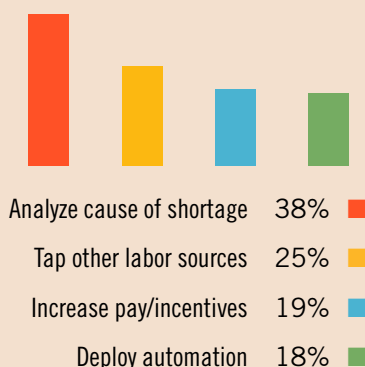
*Owner/Operator
Five Star Express*

First, schedule the work around the labor instead of the labor around the work. Second, pay people a wage they can afford to live on. Third, implement the 5S method and Six Sigma to make the work more efficient. Fourth, wait 1-2 months and reevaluate how much more or less labor you actually need after the employees get used to being more productive.

Christopher Lovin

Logistics & Supply Chain Professional

What Would Twitter Do?



Our industry needs to embrace flexibility of scheduling and the use of non-traditional labor sources. Mothers, students, and retirees who can work two- or four-hour flexible shifts are an untapped market that can help bridge the labor gap.

Amy Wren

*Vice President, Human Resources
Kane Is Able, Inc.*

Managing a warehouse demands both a unique skillset and mindset. Continue training, which creates trust.

Jasvir Saran

*Warehouse Supervisor
Silver Hills*

Consider materials handling solutions, which can run 24/7, minimizing labor requirements. Evaluate which processes can be automated or left manual—from a cost and operational perspective. A system should fit as an “island of automation” within manual operations.

Rick Trigatti

*North America President
Cimcorp*

Engage employees. Building a culture that is based on dignity, respect, empowerment, and appreciation can solve a number of challenges. Treating people the right way goes a long way, as does providing the tools, environment, and training for employees to be successful.

William Vecchiarella

*President, Prime Distribution Services
An Ascent Global Logistics Company*

First, determine why there is a shortage. Do a workflow study to find out if workers are being utilized efficiently (i.e. too many workers in one station, bottlenecks in the process flow). Then, set a justifiable and realistic goal based on time studies. Study the arrangement of the workstations and improve the layout of the warehouse together with automating some processes. If workers are underutilized, you

continues on page 16

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Good Question...

Warehouse labor shortage solutions

can do line balancing along with other techniques to maximize their work. Then, decide if you will hire additional labor.

Nikko Vince Gonzales, CSSYB
Industrial Engineer

Re-evaluate if labor requirements can be reduced by improving the process itself, investing in the right tools, improving ERP systems, and redefining tasks to distribute among existing manpower.

Ashraf Manjothi
Logistics Specialist, Fetchr

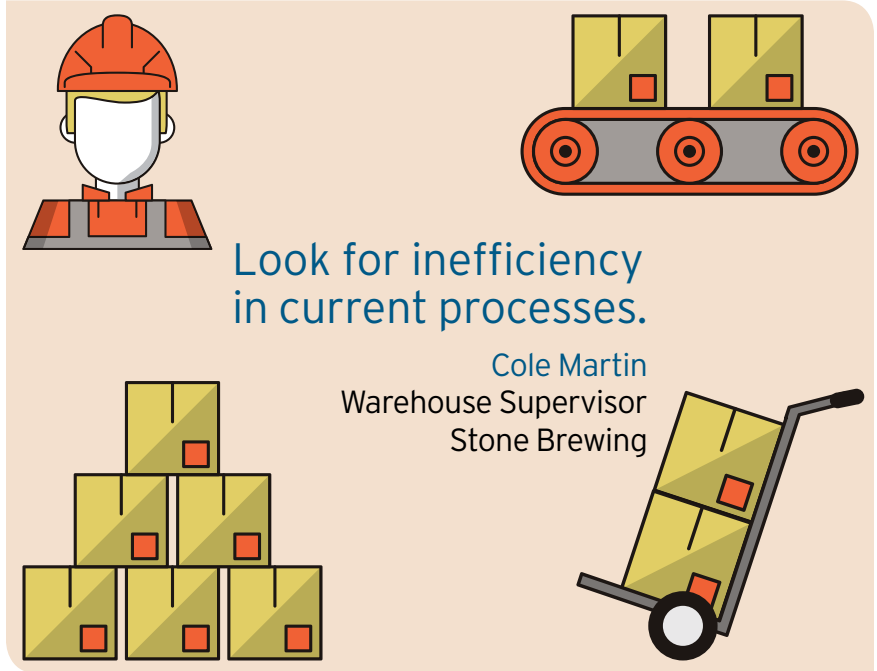
The key to recruiting success is creating a culture that people are excited to join and build. The job and compensation levels are similar, place to place. Culture is what differentiates.

Bob Lilja
Chief Operating Officer
Weber Logistics

Target the age 35 and above group who are looking for long-term positions. With reasonable benefits, this age group would be more willing to work split shifts or on a three-shift system.

Michael Eustace
Former Quality, Environmental
Safety Superintendent
DynCorp International

Dig deeper. One cold storage company I worked for used to claim it had a labor shortage. Now it has fewer people and they get the job done. Why? Because each work process is documented and religiously followed. A system was also put in place to ensure proper documentation was done, correctly and timely. If there is already a system in place and there's still a manpower shortage,



**Look for inefficiency
in current processes.**

Cole Martin
Warehouse Supervisor
Stone Brewing

conduct a study to reassess what positions need to be filled and if the tasks can be distributed to other employees.

Anj Rillorta
HR Manager
South Pole Logistics

We encourage staff to learn multiple skills and support those who have taken it positively. More than 50 percent of our team can multitask in the warehouse. An employee drives the truck, operates materials handling equipment, runs the ERP system, does the transactions, takes ownership of orders processing, and makes sure outbound delivery is released with proper checks. Such employees are assets, and we value them.

Sudhakar Poojary, MCIPS, MBA
Manager, Supply Management
Etihad Airways

Focus on the root cause and implement long-term solutions. Reassess methods, processes, workflow, and competencies. Review the shift system, analyzing peak and off-peak hours; automate processes and implement daily routines; optimize SAP to decrease manual operations; document your processes; increase the know-how of your workforce with training sessions; forecast and plan.

Michella Rakotolahy
Cargo Manager

HAVE A GREAT ANSWER TO A GOOD QUESTION?

Be sure to participate next month.
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the development of a
technology that will disrupt
supply chains, what would it
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Has the Uberization of Freight Made the Last Mile Messy?

Re: Checking In: The Last Grimy Mile by IL Publisher Keith Biondo
bit.ly/lastgrimymile

I read Keith Biondo's column with interest. Here in Chicago, it is even worse with several bike riders and pedestrians run down by the same type of Amazon Uber-like drivers. The news station did a research report and video showing drivers running stop lights and stop signs, not using signals, having vehicles so stuffed with packages they could not see the mirrors. They are not trained and are a safety hazard.

Name Withheld

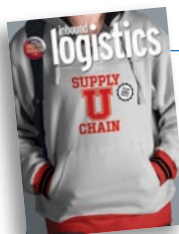
Very interesting story. Last mile still needs some help when it comes to that very last part: the package. Perhaps lockers or car trunks (which the smile company you allude to is already looking into) or for cities like NYC, an area inside the building might be a big add-on fee or value-added service. A bit like room of choice, in a way. Great article.

Cerasis

How to Handle the Capacity Crunch

Shippers should be strategic in their partnerships with carriers, customers, and packaging suppliers to maximize efficiency and coordinate shipments to ensure trailer capacity is fully utilized. By working with customers and being responsive, shippers can take days out of the supply chain. Be strategic with shipment times versus moving when the product is ready.

Greg Gantt
President & CEO, Old Dominion



Don't Forget the Basics

Re: Core Competencies Every Supply Chain Manager Needs
bit.ly/coreSCskills

I was disappointed by the remarks of the career coaches. The competencies are no doubt important, but more so for the level of a general manager.

Supply chain managers must learn the basics of supply chain operations. How to plan (ERP), source (SRM), make (lean), deliver (warehousing and transportation), and maintain a customer focus (CRM). None of these knowledge requirements were mentioned, and young managers reading this could be misled and neglect learning basic functional knowledge.

Blair Williams
Industry Professor, NYU (retired)

What's the First Thing You Would Do To Solve the Truck Driver Shortage?

Nothing! Since the operative word is "solve," I would do nothing beyond letting the market for drivers sort itself out. This problem is not a regulatory one (if, for example, we accept the need for hours-of-service rules) but it is a demand vs. supply one. In the short run, I would let wages for drivers rise unfettered because, in the long run, drivers' jobs will be at risk due to autonomous trucks. Today's shortage may prove to be tomorrow's glut.

Dr. Darren Prokop
Professor of Logistics
College of Business & Public Policy
University of Alaska Anchorage

There is no driver shortage. This is a myth perpetuated by trucking companies unwilling to change their business models. If a shortage existed, carriers could not operate with a 100-percent turnover rate. The problem is not a lack of valid commercial driver's licenses. The problem is the carriers have not changed their business model.

Repeat after me: There is no driver shortage.

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10TIPS

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Leveraging Big Data for Your Supply Chain

Big data is a hot buzzword, and the phrase has different meanings for different organizations. But no matter how you define it, there is no doubt that using statistical science and data analytics can help drive operational growth and supply chain efficiency. Robert Daymon, senior vice president of operations at Transplace, offers these tips to get the most out of big data for your supply chain.

1 **Gather the right information.**

Understand what data you need to capture, track, and act upon. Having timely, accurate, and complete data can create a holistic view of operations and improve collaboration. And, it's critical to organize that data.

2 **Set goals and map out a plan.**

Data is not worth collecting without a clear plan. It's important to establish key performance indicators, implement specific goals, and identify what you need to accomplish.

3 Trust your instincts. Pair non-quantifiable information, such as what you may be hearing throughout the industry and your gut instincts, with what you see in the data.

4 Make raw data actionable. Using business intelligence tools and reporting can help make reacting to operational concerns more actionable. What makes data truly valuable is how you use it to drive meaningful change and enhance an agile supply chain.

5 **Plan in advance and forecast.**

Preparing for the future is a must for your supply chain operations. Using data for advanced planning can help anticipate what will occur in 12 to 18 months and beyond. Conducting what-if scenarios can help mitigate risk when unplanned disruptions arise.

6 **Use TMS data to improve the flow of materials.**

A transportation management system (TMS) can track meaningful data to make improvements. A TMS can help anticipate future shipping patterns, secure much-needed capacity, and make sure you have the right amount of inventory.

7 **Shape your own demand.**

During the procurement and bidding process, advanced analytics can help mold a network. The ability to forecast these activities can help lower carrier costs. And, if handled correctly, data can help manage variations.

8 **Increase end-to-end visibility.**

An efficient supply chain must track and trace the end-to-end flow of goods. Data from a TMS can help with continuous move routing or tracking the location of each shipment. And, if unexpected events occur during a multi-stop delivery, this information can identify real-time load locations and enable route adjustment.

9 **Enhance customer service.**

Data analysis allows for transparency with customers—helping them gain insight into any cost or service fluctuations. And, using predictive analytics to automate processes allows for improved appointment setting and can help track product deliveries, ensuring the end customer receives the final product on time, every time.

10 **Compare and adjust.**

Use the data to compare final shipping results against initial goals and key performance indicators. Utilizing the expertise of a third-party logistics partner can help shippers glean deeper insights into their supply chain and optimize transportation strategies to increase efficiency, reduce costs, enhance customer service, and improve carrier relationships. ■



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NEWS & TRENDS IMPACTING THE

AGRICULTURE SUPPLY CHAIN

FARM AID

The U.S. Department of Agriculture (USDA) will make disaster payments of up to \$2.36 billion, as provided by Congress, to help America's farmers and ranchers recover from hurricanes and wildfires. The funds are available as part of the new 2017 Wildfires and Hurricanes Indemnity Program.

The USDA's Farm Service Agency will make these disaster payments to agricultural producers to offset losses from hurricanes Harvey, Irma, and Maria as well as from devastating wildfires. This investment is part of a broader suite of programs that USDA is delivering to rural America to aid recovery.

AG GETS READY TO ROOMBA



A new solar-powered, Roomba-style robot could be the first truly automated option for agriculture. Developed by the same company that introduced

the robotic vacuum cleaner, Massachusetts-based Franklin Robotics is now looking to tackle weeding chores with the Tertill.

The weatherproof Tertill "lives" in the garden, get its power from a solar panel on its back (or shell), and wanders through the garden with four-wheel-drive, diagonal wheels and a weed eater-like plastic trim line that cuts down weeds. Tertill uses a combination of simple logic and wireless communication to distinguish desirable plants from weeds.

The end result is, ideally, a weedless garden without the use of chemicals. Embedded Bluetooth technology also allows for sending updates to mobile devices. The Tertill is about 5 inches high, 8 inches wide, and weighs less than three pounds.

The Tertill is expected to begin shipping in June 2018. It is projected to sell for \$249.

—Tom Marren for Thomas

CROP MARKS

■ In 2016, \$135.5 billion worth of American agricultural products were exported around the world. The United States sells more food and fiber to world markets than it imports, creating a positive agricultural trade balance.

■ Farmers and ranchers receive 15 cents out of every dollar spent on food at home and away from home. The rest goes for costs beyond the farm gate: wages and materials for production, processing, marketing, transportation, and distribution. In 1980, farmers and ranchers received 31 cents.

■ Farming accounts for about 1 percent of the U.S. gross domestic product.

SOURCE: American Farm Bureau Federation, 2017 *Food & Farm Facts*



PLOWING THROUGH CONNECTIVITY GAPS

The Precision Agriculture Connectivity Act of 2018 would direct the Federal Communications Commission (FCC) to establish a task force charged with identifying gaps in high-speed internet connectivity for the nation's cropland and rangeland.

Within one year, the task force is intended to bring together public and private stakeholders to evaluate current programs affecting broadband internet access on cropland and rangeland, identify and measure existing gaps in coverage, and develop policy recommendations to address that gap. The task force will also develop specific steps the FCC, USDA, and other federal agencies can take to address coverage gaps.

The measure also instructs the FCC to develop ways to help encourage broadband adoption and precision agriculture in areas where it is unavailable.

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LEADERSHIP

*Conversations With
The Captains of Industry*

By Merrill Douglas

Lindsey Graves
COO
Sunset Transportation

Photo by Kacey Schaeffer

Sunset's Rising Star

WHEN LINDSEY GRAVES JOINED Sunset Transportation in 2006, the founder and CEO—who happens to be her father—asked her to learn the business by spending some time in every possible role. As the years progressed, that didn't mean dealing just with the company's freight operations.

"I was always doing my role and then some, everything from changing light bulbs and restocking the supply closet to developing marketing materials and planning company engagements," she says.

That extra effort won Graves significant respect at the third-party logistics (3PL) company. "People realized that even though I was the daughter of the owner, I was a hard worker," she says. "That helped me learn to lead by example."

By 2013, Graves had become Sunset's vice president of operations. In January 2018, she was named chief operating officer. We caught up with her recently to discuss how she leads and what she's working on these days.

IL: You originally prepared for a marketing career. How did you end up running operations in your family's business?

I didn't plan to work for my dad. After college, I branched out on my own, taking a short-term event management job

in Las Vegas. When that ended, I came home and did what I had done off and on through high school—helped in the company's accounting department.

I always loved being around the people at Sunset; I'd known a lot of them for a long time. My aunt was the company's third employee, so I was always around family. The environment was welcoming and natural to me. So by accident, I decided to change my direction. I asked more questions and became interested in understanding what the company actually did.

IL: As you were cycling through various roles in the company, what's one important thing you learned that helped shape you as a leader?

The philosophy of leading by example was ingrained from the beginning. Having learned the importance of each department's function and capabilities, I naturally became the type of leader who wants to get everyone's input, and then decide as a team what's best for the organization. A big-picture view is important to see where changes impact people in different roles, and I quickly learned how buy-in is key to moving an organization forward quickly and successfully.

IL: How is the job of COO different from when you were vice president of operations?

The vice president of operations manages our six branch offices, and many of the day-to-day business operations. The COO role furthers the company succession plan, provides an

opening to develop a new vice president of operations, and allows me to focus more on strategic growth and big-picture company development.

IL: What are the top projects on your agenda right now?

First, I'm focusing on our three-year strategic growth plan. Second, I'm looking for Sunset's next headquarters building in St. Louis—our largest branch—because we already have 22 people in a leased space across the street. We're growing.

Last, St. Louis is a fantastic market for logistics talent. With the number of colleges in the area that offer supply chain or logistics programs, I'm leading the charge to put a heavier focus on the company's training materials and career path development. Sunset has flourished by hiring a mix of new and experienced people who are passionate about logistics and working for a culture like ours; continuing and fostering employee development is a top priority.

IL: What are your customers most concerned about these days, and how do you help with those issues?

Transportation industry regulations such as the Food Safety Modernization Act and the electronic logging device (ELD) mandate are hot topics right now, as are strict logistics programs such as Walmart's on-time, in-full delivery policy. We do several things to help our customers understand what to expect and how to prepare well in advance of these issues. For example, we send out expert commentary and advance warnings.

Most importantly, we do the work for them by knowing their business well enough to tell them where we see potential issues. We are an extension of their business, and we 'walk the talk' by proactively providing necessary information.

IL: Since the ELD requirement is aimed at carriers, how does it affect your shippers?

Since ELDs are forcing carriers to comply with hours of service (HOS) regulations, a shipment that may have taken a carrier one day to move a certain number of miles in the past may now take two days. This HOS law isn't new, but the ELD requirement is, ensuring that drivers can't falsify log books when indicating the number of hours they've been driving. Shippers are feeling the pressure of this shift in carrier service standards and transit times across the entire supply chain, requiring them to rethink production schedules and shore up dock procedures to decrease wait times.

Also, drivers who run out of service hours need places to

park. Many shippers don't want trucks on their lots overnight, for liability reasons. But if a shipper lets a truck spend the night on its lot, that truck will be ready to load first thing in the morning. If you are more accommodating to carriers, with something as simple as parking options, you'll be a shipper that carriers want to work with.

IL: Which aspect of your job is most fun?

I love watching others achieve success in their career. For instance, there's an analyst on our team whom we hired four years ago. It was an awesome and memorable interview because he had very real expectations for his career path. He wanted to start at the bottom and do every role, and he wanted us to see how important it was for him to learn by experience.

Now, I'm watching him have some major wins and handle some big decisions. It's so cool to see how excited he gets about those moments, and how much trust and autonomy he's given to do his job. Seeing this progress makes it all worth it.

IL: How do you like to spend time outside of work?

My husband and I have three small girls, so we like to spend as much time outside in our Kirkwood neighborhood as possible. There is always something going on! We also love to travel and experience new things. Last winter, we went skiing in Colorado; it was fun to see how quickly my seven-year-old daughter learned and fell in love with the mountains. Most importantly, we found something fun that we can continue to do together as a family. ■

No Glass Ceiling Here

The role of women in logistics is growing, says Lindsey Graves, and Sunset Transportation is helping to lead the way. "Two of our four senior leaders, and six of the directors who report to them, are women," she says.

It's particularly eye-opening when these women attend a logistics industry event. "There's a growing number of women in the industry, but when Sunset arrives at a conference or meeting, it makes a pretty impressive statement," Graves says.

Besides making their mark on the industry, the women of Sunset Transportation also provide valuable mutual support on the job. "We learn important tricks of the trade from each other, such as using grocery delivery services, which are crucial when you're serious about your career and your family," Graves adds.



Joel Kamp is head of the bulk scheduling center, Americas region, with The Linde Group, a leading gases and engineering company operating in more than 100 countries. He oversees the transportation and delivery of liquefied gases such as oxygen and nitrogen to plants and depots in this region.

RESPONSIBILITIES

Directs the bulk scheduling center for North and South America, which supports approximately 100 plants and depots. Also oversees the night coverage, systems, and central transport management teams.

EXPERIENCE

Strategic sourcing and product manager, hydrogen; head of logistics and central transport management; distribution administration manager, all with Linde.

EDUCATION

B.S., business logistics, Penn State University, 1993; MBA, University of South Carolina, 1999.

Joel Kamp: Never Out of Gas

SEVERAL YEARS AGO, WE CONSOLIDATED OUR SOUTH America scheduling center in Brazil with the New Jersey operation center. We brought 15 people from South America to work in New Jersey. It was a huge change.

My team and I learned a lot about cultural differences and how business is done in Brazil. And, this was a massive change for the people coming here from Brazil to work.

We visited the teams in South America multiple times to get their input as we built the workflow and adjusted our systems. We use a specific internet technology, workflow, and secure link to run our plants. It's like our own NASA mission control.

The South American teams helped

identify the changes needed. For instance, in Brazil, we have to produce an invoice, or Nota Fiscal, at the time of delivery, which is different from what's needed in the United States. We tailored the system to handle this.

For the first few months after consolidation, we weren't as efficient as we wanted to be. But as we settled in with our new business processes, we improved. Our combined team is fantastic and focused on efficiently serving the customer. Our metrics around

The Big Questions

If you could speed the development of a supply chain-disrupting technology, what would it be?

For safety reasons, I'd speed continued advancements in vehicle technology as well as self-driving vehicles. With significant driver shortages, this opportunity becomes more critical.

Who are your heroes?

My father, for his drive and work ethic, and his passion for the opportunities Penn State gave him. He went to Penn State, and then returned to teach and take on alumni relations roles. Also, I've always found

Michael Dell interesting—how he grew his business from a dorm room.

If you could invite anyone in the world to a dinner party, who would you invite?

George Lucas. I grew up in the 1970s and 1980s, which was a big *Star Wars* time. I'd also love to meet soccer player Lionel Messi.

If you had \$1 million to start a business or philanthropic endeavor, what would you do?

I would fund cancer research. My father passed away from cancer, so it's something I feel passionately about.

service and cost continue to improve.

We've also had some cross pollination. A planner for the United States shifted to Argentina and Uruguay. One of the Brazilian managers is going to manage a North American region. We're sharing ideas and expanding people's knowledge base to improve our scheduling process.

In a previous role as distribution systems manager, I helped centralize driver dispatching. Previously, we had been dispatching driver and equipment assignments locally. This move to centralization freed up our field teams

to focus even more on safety. We have highly trained drivers hauling hazardous materials, using specific types of equipment. Safety is critical.

Again, we involved the people in the change. We also piloted the shift at a few locations that had different products, to figure out what worked.

At Penn State, I wanted to attend the business school, but wasn't sure about a major. Then, I attended the school's "get to know the majors" day. I walked to the supply chain booth. They said, "Over the past five years, we've placed more than 98 percent of our students

in jobs." I was hooked. Plus, I like how supply chain can impact an organization. Other than spending three and a half years in product management, I've been in supply chain roles.

The car industry gets a lot of attention for just-in-time operations. The gas industry is as much, if not more, just-in-time than the auto industry. We have a finite amount of storage at our plants and customer sites. We deliver 10 loads every day to some customers. We're truly just-in-time and work as efficiently as possible while meeting customers' needs. ■



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John Watkins, Co-Founder and CEO, 3PL Central
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2018 State of the Third-Party Logistics Industry Report

Over the past decade, there has been an extraordinary amount of change within the logistics industry. And with this change has come new requirements, new competition, new technologies, and more. At 3PL Central, we have watched as our customers have navigated this ever-evolving world of logistics. We compiled these observations—along with our own experiences—in our recently released 2018 State of the Third-Party Logistics Industry Report.

Our second-annual report is designed to help warehouses increase both their market share and profitability by addressing the most dramatic change of all—The Rising Demand for a Superior Customer Experience.

It should come as no surprise that with the growth of e-commerce and web-connected smartphones, consumers now expect a new, limitless array of products, choices, and delivery options. And the expectation to deliver a fantastic customer experience, from order creation to last-mile delivery, falls on the shoulders of the 3PL warehouse.

This year's report identifies five opportunities for 3PLs to differentiate themselves from their competition, delight their customers, and be ready for 2018—all with the emphasis on delivering a superior customer experience.

1. Handling the Pressure of Growing Customer Support. The demand to provide a superior customer experience will impact every employee in your warehouse—from your customer service reps, to your line workers, to your sales force. Now more than ever, speed, flawless accuracy, commitment to excellence, and “white-glove” treatment of your customers’ brand image will be mandatory.

3PLs who provide this level of performance will gain a sterling reputation for customer service. This will enable them to differentiate themselves from their competition, land new clients, and retain current customers.

2. Supporting Omnichannel Fulfillment to Meet Retailer Demands. With global foot traffic dropping—and customer expectations soaring—today's retailers have no choice but to offer omnichannel purchase options for every product they sell.

While this will be a huge challenge for these retailers, it will present a tremendous opportunity for 3PLs who can help retailers satisfy their customers' demands. Warehouses who can do so will have their pick of retailer clients.

3. Embracing the Big Data Era. Warehouses have always produced massive amounts of data. And the increased use of technology has multiplied data exponentially. In the past, few 3PLs have used data to enhance their operations. However, this is about to change, as many partners will soon be asking for this information—along with your 3PL's insights as to what it reveals.

Savvy 3PLs will be able to evaluate their own Big Data, thus enabling them to identify opportunities to improve their profitability and ability to deliver a superior customer experience.

4. Discovering New Technologies to Meet Growing Demands. From artificial intelligence to robotic fulfillment to blockchain technology, a tsunami of innovations are about to hit the logistics industry. And while some may be beyond the means of smaller warehouses, their deployment in larger operations will enable the industry to see which of these advances will pan out before they invest themselves.

In addition, our report details some of the easier-to-implement innovations. These, too, could help your 3PL dramatically improve service levels—without breaking the bank.

5. Partnering With New and Non-Traditional Fulfillment and Delivery Players. In addition to new technologies, 3PLs will be confronted by a host of new entrants into our industry. These will range from enormous players like Fulfillment by Amazon down to pop-up fulfillment and delivery services.

Many of these new entrants could become valuable partners for 3PLs who could help to handle warehouse overflow. Some may also offer an invaluable extra service such as local on-demand delivery desired by many retailer customers. In short, any partner who can improve the customer experience of your recipients will enhance your image both in the eyes of those consumers—and the warehouse customers you serve.

While some 3PLs may not be able to embrace all of these new opportunities and changes immediately, their ability to adapt will be necessary for survival as the rising demand for superior customer support continues.

We welcome you to access the full 3PL Central 2018 State of the Third-Party Logistics Industry Report to learn more about the opportunities outlined above. It also provides multiple “bonus features” that detail how your 3PL can turn these new challenges into opportunities for new customers and profits. To access, visit 3plcentral.com/2018soi.



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We Must Be 'Smart' About the Future of Infrastructure

America's transportation infrastructure is in a pretty dire state. The American Society of Engineers' (ASCE) last report card gave it an average grade of D+. If the United States were a high school, our parents would be meeting with the principal and we'd probably be concerned about whether we were going to graduate.

Few issues can gain bipartisan support these days, but our questionable transportation infrastructure has been a hot issue at all levels of politics since long before Donald Trump took office. If implemented, the President's proposed \$1.5-trillion infrastructure plan could go a long way toward repairing and replacing the crumbling highways, bridges, ports, and railways that continue to plague the supply chain. Maybe the ASCE's next report card will finally give U.S. infrastructure a better grade.

With Great Investment Comes Great Responsibility

However, the federal government only plans to put up \$200 billion of the \$1.5-trillion proposal. State governments will pick up an additional portion of the tab, but it's clear that President Trump's plan will rely heavily on private investment to meet funding goals.

While investors may grumble at the amount of money they're being asked to put up, it's important to understand the strong bargaining position that would be gained from such a high level of investment. It will be critical to the future of the supply chain that infrastructure upgrades take smart technology into account, and this level of investment should guarantee that we get what we need.

If you're not convinced, these are some of the areas where smart technology will most impact the supply chain:

Smarter roadways, railways, and waterways. Moving forward, infrastructure projects must focus on integrating the Internet of Things (IoT) into our highways, waterways, railways, and pipelines to give unprecedented visibility to the freight sector.

In addition to this increased visibility, the installation of proper sensors could vastly improve the way we monitor and maintain that infrastructure. Bridge collapses, train derailments caused by rail damage, and unexpected lock and dam failures rank among the problems that could be virtually eliminated by smart infrastructure.

Self-driving trucks. Technology giants have already begun widespread testing of self-driving trucks in both rural and urban environments. A recent fatality by a self-driving Uber happened because somebody put stickers on a stop sign, limiting the vehicle's ability to recognize it. A few stickers would matter far less if stop signs had sensors readable by self-driving vehicles. Sensors in on-ramps, mile-markers, and/or in highway lanes themselves could drastically improve the safety of this technology.

Sustainability. The supply chain takes our environmental impact seriously. Carrying the bulk of the investment means that supply chain stakeholders can demand the implementation of environmental initiatives driven by smart technology. This type of sensor-driven data has already been used effectively in places such as New York City to reduce pollution. The more we implement technology across our nation's infrastructure, the more effective we will be in our efforts to reduce the supply chain's inevitable environmental impact.

More data. If there's one thing logistics professionals love, it's data. Lots and lots of data. The data provided from smart infrastructure—especially in urban areas—would contribute to vast improvements in our supply chain/distribution networks, site selection efforts, optimized delivery schedules, and much more.

If the President wants us to invest, then let's invest. But let's do it with the stipulation that we will build our new infrastructure in a way that embraces Industry 4.0, IoT, and any other innovations a connected future brings our way.



Dan Clark, Founder and President, Kuebix
978-298-2100 • sales@kuebix.com

The Power of Supply Chain Visibility

Most companies today are struggling to achieve visibility and control over their supply chains to effectively manage their cost of goods and consistently meet customer expectations.

However, there is a way to leverage technology to provide a platform where suppliers, carriers, and their customers are not only sharing information but also dynamically planning and executing their logistics operations collaboratively.

The key to supply chain visibility is a common system that all stakeholders can use to plan their moves, be alerted to changes as they occur, and make real-time adjustments to keep the supply chain moving smoothly.

How Should It All Work?

The backbone of visibility and active cooperation is a cloud-based collaboration portal that can be shared by the customer, the supplier, and carrier partners. This portal can be accessed on all computers and mobile devices wherever the stakeholders may be. This single platform will be used as a dynamic record of truth for the changes that need to occur across the supply chain to keep the delivery of goods moving efficiently.

Here are three supply chain benefits of cloud collaboration portals:

1. Order Visibility

It all begins with the purchase order for goods. In the collaboration portal, suppliers can view the full backlog of orders they need to fill. This will provide the supplier the information they need to plan production and inventory schedules to meet customer demand. Here the supplier can commit to promise dates so that the customer can plan their business based on delivery dates and product availability. As changes occur, the supplier can keep their customer updated so they can plan accordingly.

2. Carrier Visibility and Collaboration

Once the order has been booked, the carrier needs to participate in the collaboration portal and begin to provide status updates on their delivery. Many carriers have the ability to provide electronic notifications through various protocols including EDI or web services driven from GPS or ELD based applications on the smart phones of their drivers or in their trucks. Electronic tracking provides visibility to the customer and supplier on the true status of their orders. The

next step in collaboration is using the customer's online dock scheduling system to reserve a time and door for the delivery.

This approach ensures that trucks are not waiting for hours for a door to become free, resulting in better carrier performance and costs over time.

3. Customers Gain Control of Warehouse Operations

With suppliers and carriers providing immediate electronic notification of promise dates, delivery statuses, and arrival statuses, the customer can regain control of a previously chaotic operation. Even when changes are occurring rapidly, the customer will know their shipments are in transit and can rest assured that their distribution centers and warehouses will run smoothly. Carriers will show up at the right location on time or a notification will be sent so corrective action can be taken. This allows the warehouse operations team to manage their staff effectively to have the right number of workers available to handle deliveries as they arrive, rather than having groups of people sitting idly because they were not aware of a delivery delay. All of this results in superior inventory management and having the warehouse operations team meet the expectations of their customers.

Tangible Savings from Supply Chain Collaboration and Visibility

Suppliers and carriers working together on a common technology platform will not only create efficiencies for the customer, they will increase their ability to deliver superior customer service. A carrier that arrives on time to the right location can unload quickly and get to their next delivery on time. A supplier with visibility to all of their orders can plan more effectively and maintain their level of customer service. A customer that has visibility to all the dynamic changes that occur during shipment planning and delivery can have an efficient distribution center that will increase inventory turns and reduce their cost of goods.

Download the full Kuebix ebook "Driving Supplier, Carrier and Customer Collaboration" (<http://bit.ly/2jj1Jkg>).

Founded by a logistics industry innovator, Kuebix offers a transportation management system (TMS) with Freight Intelligence that enables companies to capitalize on supply chain opportunities through visibility, control and the use of predictive analytics. Learn more about Kuebix at <http://www.kuebix.com>.



Brad Hollister is CEO, SwanLeap, 855-737-3444info@swanleap.com

Move Beyond Traditional Label Maker TMS or Surrender to Amazon's Profit Squeeze

The challenge: Amazon has synchronized and integrated their supply chain to deliver products to customers when they want, how they want, and at the pricing they prefer. By controlling their own inbound and outbound deliveries (air, land and sea) and connecting all of the pieces in the digital supply chain together, the e-commerce giant is functioning as an independent and "vertically integrated" supply chain, focused both on the customer and on ironing out inefficiencies related to limitations of traditional TMS systems.

Through the use of Artificial Intelligence (AI), Amazon has made every aspect of their supply chain "smart." Eliminating shipping errors while optimizing routing decisions based on real-time market conditions, Amazon's supply chain design is so powerful it leaves competitors with few options: sell on Amazon, be pushed out of the market, or adopt a NextGen cloud TMS.

Moving beyond the traditional label maker TMSs commonly utilized by most e-commerce strategies is essential if companies want to succeed among evolving consumer expectations. Rate shopping, label generation, and tracking are not enough in the age of dynamic consumer control.

The solution:

1. Adopt technology that DOES NOT depend on static business rules. Traditional TMS builds in hundreds of static rules to account for order variations, but unfortunately the web of rules we weave always ends up tangling our customers. Food for thought: Table-based business rules fail to leverage AI, which can be quantified by examining shipment invoice data. If our routing is based on rules, then we are by default not routing based on customer needs, delivery windows, or promise dates; these self-inflicted errors are impossible to identify until it is too late (if ever).

2. Require financial visibility that allows dynamic controls to impact margin, profitability, and EBIT. Inflexible and subject to human error, traditional TMS technologies lack financial segmentation. Not having the necessary clarity and control prevents costs from aligning with customer profitability.

3. Ensure "live" freight audit capability is built directly inside the TMS. Most companies are unable to "own" their freight shipping like Amazon. As a result, the TMS technologies can only compare invoices to the quoted amount. This

limited functionality accounting does not take into account optimized carriers, carrier rates being loaded incorrectly, or mode optimization. Three-way freight bill matching is the new standard, one that legacy TMS systems simply cannot accommodate.

4. Eliminate costly vendor-inflicted shipping errors that result without established Vendor Scorecards. Managing vendor shipments and order fulfillment is a common problem in even the most advanced supply chain. When companies are able to hold vendors accountable for on-time order fulfillment rates, they gain the kind of control over inbound shipments that can insulate supply chains from bad service, poor fulfillment rates, and high costs.

Real Results Achieved by Leveraging AI to Automate Shipping Decisions and Reduce Costs

- A government supplier with more than 40 stores saved \$2 million annually compared to previous pricing from a Top 5 logistics firm by dynamically routing shipments by mode and eliminating the static carrier routing guides that governed decisions for years.
- A Minnesota-based manufacturer of all-terrain vehicles and snowmobiles was overspending on freight by 40 percent in their garment division by inadequately routing shipments with the proper carrier. Leveraging AI added \$12 million to their bottom line and affected earnings.
- A large manufacturer in Wisconsin gained \$360,000 in additional profits by implementing a non-rules-based, live TMS in order to dynamically decide not only the best carrier option for each shipment, but also the proper shipping mode (parcel versus LTL).

Founded in 2013, SwanLeap, formerly ClearView Audit, is leading the charge in changing the role of TMS in supply chain. Live shipment tracking, continual connectivity with carriers, and automated decisions generated by Artificial Intelligence enable SwanLeap to drastically reduce supply chain costs the way no other firm can. In 2017 SwanLeap was listed by Inc. magazine as one of the fastest growing companies in the United States and the Fastest Growing Company in Wisconsin.



LOGISTICS knowledgebase®

Andrew Slusher, President and CEO, SMC³
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Reverse Logistics Discussion Highlights Upcoming Conference

As a consumer, I realize the incredible value online retail sales brings to my family. The ability to order everything—from clothing to food—with one simple click and experience lightning-fast delivery to nearly anywhere in the country is incredibly beneficial.

But as the head of a supply chain technology company, I know the online retail supply chain is much more complex than it may seem. Our organization, SMC³, helps shippers, carriers and 3PLs optimize their less-than-truckload transportation spend using the latest, cutting-edge technology tools.

One of the major pain points that has become ever more critical due to the rise in e-commerce is the area of reverse logistics. Whether retail returns are routed through brick-and-mortar stores or are sent from consumers directly, the fact is that modern supply chains need to adapt to an influx of return-to-sender merchandise. And the consumer expects that all of this—the complicated logistics, the transportation, the restocking—is a free benefit of their initial purchase.

According to Tony Sciarrotta, executive director of the Reverse Logistics Association, these product returns are not cheap. During SMC³'s Jump Start 2018 in Atlanta, he told the audience that the costs associated with returns can equal around 10 percent of the original retail price of the item. He pointed out that return-percentages vary from industry to industry, but, as you may imagine, clothing returns are a significant percentage of the entire industry. The amount

of returns, and the costs associated with those returns, will only rise in the coming years, he said.

We'll be discussing the implications of the rising reliance on reverse logistics during our upcoming educational conference, Connections 2018, held June 25-27 at the Greenbrier in West Virginia. John Wiehoff, CEO of C.H. Robinson, will be exploring the opportunities and disruptors facing the global supply chain, including his take on navigating the remainder of 2018.

Reverse logistics is a pressing issue, but we've worked hard to also cover as many topics crucial to today's supply chain stakeholders we can fit into a three-day event. C.H. Robinson CEO John Wiehoff will give his perspective on the transportation arena, and panelists will cover topics like how to prepare for blockchain in the logistics industry and data security in an era of increased supply chain visibility. As always, Don Ratajczak will be on hand to provide a free-wheeling update on the global economy.

During Connections 2018, attendees can also learn more about the latest developments at SMC³. In 2018, the company will be unveiling an expanded Canadian LTL base rate product, which is a direct benefit of a recent acquisition of the software and data owned by Freight Carriers Association of Canada. New additions to the SMC³ Platform's LTL freight APIs, as well as the latest version of the transit-time tool CarrierConnect XL, are also coming soon.

To learn more about Connections 2018, visit www.smc3connections.com.

Transwide is Ready for a New Digitalization Era in Logistics

Carriers, shippers, and logistics service providers are facing new challenges today. Customers are asking for increased visibility and feedback in real-time. With digitalization, all players in the supply chain will require instant and efficient response time to their questions or concerns. Fabrice Maquignon, managing director at Transwide within Alpega, assesses these changes and the resulting stakes.

Over the past few years, the world of transportation and logistics has undergone major changes. These include new requirements in the exchange of information, as well as improved relationships between providers. Within 20 years, the supply chain has yielded to a pressing need to transmit more information at an ever-increasing pace, and expectations are still high.

Fabrice Maquignon explains that collaborative logistics refers to providing cohesive and global meaning to all information that is disseminated and shared. To ensure that the company benefits from digitalized and shared communication, we have to get the logistics and transportation data to perform. This will be a source of efficiency and the reason why SaaS solutions have become the standard in the transportation industry. Cloud-based solutions streamline networks by connecting a large number of users to the same software, which allows access to flows and orders in real time.

The second major expectation of supply chain professionals is transparency. Transportation can no longer remain this “opaque tunnel” in which no one is aware of what is happening. A manufacturer, who in their private life is used to ordering books from Amazon, has a hard time understanding that their logistics providers are unable to offer the same level of service to manage an expedited shipment between their factory, a platform and a warehouse, points out Fabrice Maquignon.

It is up to us to provide adequate solutions, which is why we launched twTrack, a mobile application that allows operators connected to Transwide to easily track and monitor an order and the associated transportation operations. This level of visibility and feedback in real time is bound to be deployed across the entire supply chain, including at the B2B level. With it, comes undeniable advantages: quicker invoice management, anticipation of change, fewer errors, and in the end, an increase in the service rate levels and hence in quality.

Relationship Upheaval Between Users of the Supply Chain

A second major revolution in the contemporary supply chain is the upheaval of relationships between its players. In this era, manufacturers and distributors are on one side, carriers on the other and freight forwarders/forwarding-agents are in the middle. Each group can work in their area of expertise without sharing. The power of the Internet and major pressure from social media have widely contributed to the rapid development of online communities. Expectations among our customers, carriers, forwarding agents and manufacturers are high, insists Fabrice Maquignon, who thinks of the supply chain in terms of the visible and submerged portion of the iceberg.

Often, our customers first approach is to analyze the costs of transportation, reducing costs by improving buying, while optimizing processes and ensuring that invoiced costs correspond to contracts. This is the tip of the iceberg. But today, undeniably, relational tools must offer more. The U.S. faces a serious shortage of experienced drivers, with a need to hire over 150,000 drivers over the next decade. Meeting current demand is a challenge. The number of requests by shippers, on the other hand, is increasingly volatile, with requests that may double from one day to the next. The lack of fluidity between transportation supply and demand today results in 23% of trucks on the road riding empty. It's absurd, Fabrice Maquignon notes.

Here too, digitalization must provide adequate and accurate answers. Once the various operators are interconnected and sharing their offers and requests in real-time, the supply chain process becomes optimized. This is the immersed portion of the iceberg. Therefore, the trend is heading toward the “transportation community,” a space where manufacturers and distributors share their transportation needs and orders with their carriers and freight forwarders. This “logistical control tower” allows carriers to anticipate the requested capacity. As we approach the digitalization era in logistics, users leverage TMS platforms to transform how shippers, logistics managers, and carriers collaborate.

For more information, call 877-763-3240, email info@transwide.com, or visit www.transwide.com

NOTED

THE SUPPLY CHAIN IN BRIEF

IN MEMORIAM

D. Allen Lund, founder of truck brokerage firm Allen Lund Company, passed away on April 7, 2018. He was 77. In 1976, with \$1,000 in his bank account, Lund founded the Allen Lund Company, now headquartered in La Cañada, California. Over the past 42 years, he saw the company grow to offices in 34 cities and 470 employees brokering 365,000 truckloads annually.

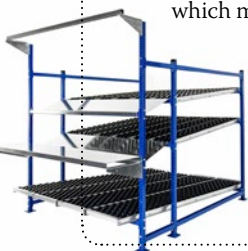


m&a

Ryder System, a provider of fleet management, dedicated transportation, and supply chain solutions, bolstered its omnichannel fulfillment capabilities by purchasing **MXD Group**, an e-commerce fulfillment provider. Ryder acquired 109 MXD e-commerce fulfillment facilities across the United States and Canada, as well as proprietary order management and visibility technology.

ORBIS Corporation, a reusable packaging provider and part of Menasha Corporation, acquired **Response Packaging**, which designs and manufactures reusable custom dunnage and fabricated steel rack solutions. The acquisition includes Response Packaging's design, testing, and manufacturing facilities in Piedmont and Greenville, South Carolina; Auburn Hills, Michigan; and León, Mexico.

UNEX Manufacturing, a maker of order picking solutions, purchased **SpeedCell Storage Systems**, which manufactures SpeedCell dynamic high-density storage solutions. SpeedCell's products complement UNEX's Span-Track Carton Flow and Flow Cell (pictured) product lines, bringing a high-density storage medium to the pick, putaway, or assembly line.

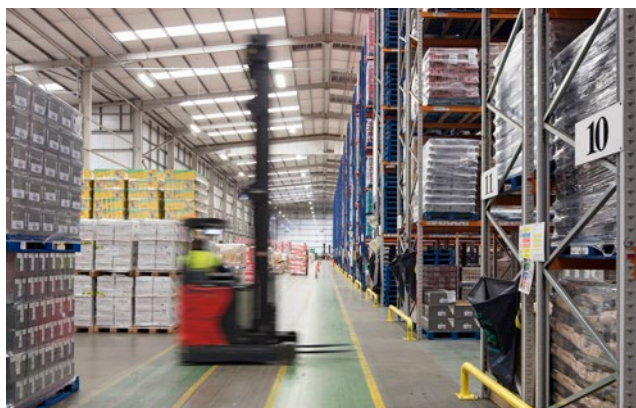


SEALED DEALS

Protein processing company **Perdue Foods** selected **FourKites**, a supply chain visibility and predictive analytics platform, to provide real-time temperature and location tracking of shipments across its supply chain. Perdue Foods leverages FourKites' proprietary network of telematics device partnerships to capture the real-time temperature of refrigerated containers across North America, using *FourKites Temperature*. If a load temperature lands outside a pre-defined range, FourKites automatically triggers an alert to team members, who can take action before freshness is jeopardized.



▼ **Seiko UK**, a subsidiary of Seiko Watch Corporation of Tokyo, Japan, partnered with **Yusen Logistics** to support its UK operation. Yusen Logistics now manages all inbound, storage, picking, and value-added activities from its Maidenhead site, where Seiko UK has been based since 1985. Working together, the companies have reengineered Seiko UK's supply chain, including implementing a new warehouse management system, which processes retail and e-commerce deliveries.



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Turn Up the Volume on Omnichannel Fulfillment

CUSTOMERS ARE CHANGING the way manufacturers, transportation and logistics firms, and retailers operate, finds the *Future of Fulfillment Vision Study* conducted by Zebra Technologies with research partner Qualtrics.

Among the study's key findings are these three factors to consider when preparing your company for omnichannel fulfillment:

1 Omnichannel is difficult to attain.

If you feel like you haven't quite "gotten there," you aren't alone. Only 39 percent of respondents report operating at an omnichannel level, and 59 percent are still in the process of planning their omnichannel strategy.

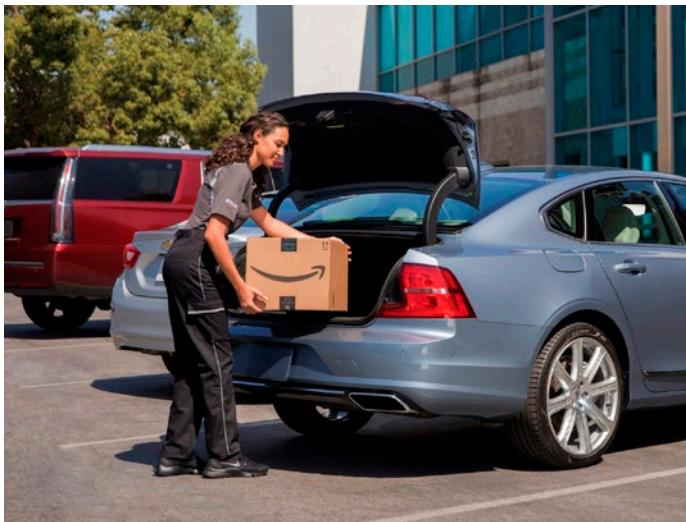
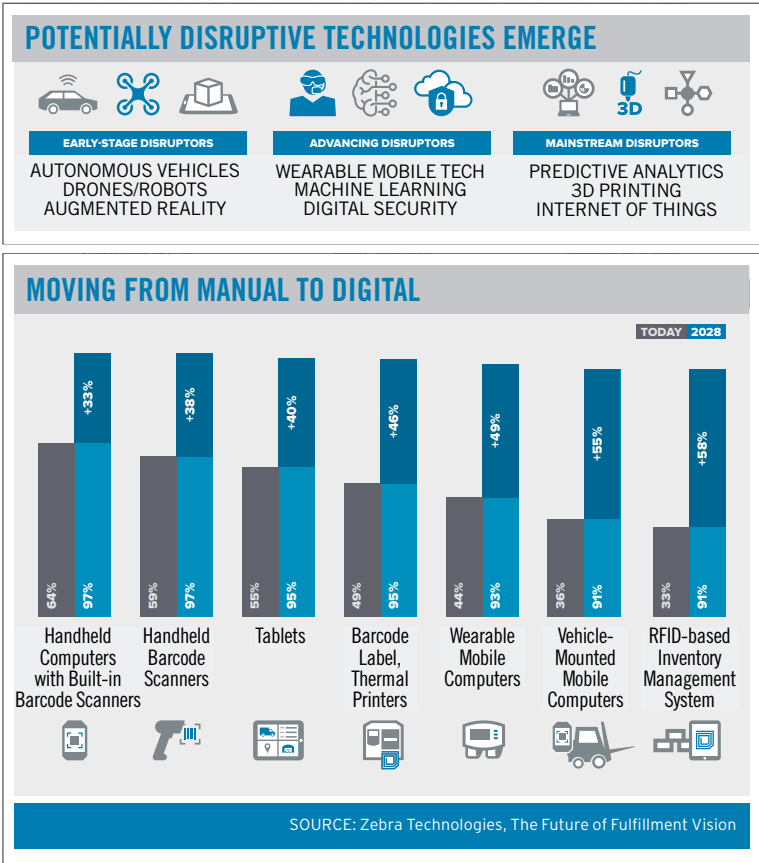
2 Supply chain decision makers are streamlining fulfillment.

Currently, 55 percent of respondents use paper and pen to manage omnichannel logistics, and respondents estimate their current inventories are 66-percent accurate. In order to increase accuracy, most decision makers are planning a shift to mobile computers with barcode scanners in two to three years (see chart). Additionally, only about 50 percent of logistics companies currently use demand forecast planning and labor workforce management, but that number is expected to increase to nearly 97 percent by 2028.

3 Roles are changing and companies are increasing collaboration.

No longer are retail companies, logistics companies, and manufacturers three separate entities. More and more, merchants are "shipping from store" and using store inventory to fulfill online orders. And suppliers are drop-

shipping directly to individual customers, which changes their processes. Thirty-two percent of retailers request drop ship, and manufacturers expect this to increase to 10 percent in the next five years. Meanwhile, logistics companies are experimenting with new approaches such as semi-autonomous and autonomous ground vehicles, drones, droids, and dedicated delivery people.



A DUNK IN YOUR TRUNK

"In-car delivery is another smart move by Amazon in its efforts to become an omnichannel retailer. Frankly, I believe this is a much better option than the in-home delivery offering. Letting someone into your home when you are not there strikes most shoppers as 'creepy.' Letting a stranger put your purchases into the trunk of your car also takes a fair bit of trust—but less so. Well done on pushing the convenience paradigm, yet again.

"The lesson for the rest of the retail industry is to start experimenting with omnichannel retailing. It is a whole new retail market. You have to keep innovating, adapting, and getting better."

—Charles Dimov, Vice President of Marketing, OrderDynamics on Amazon's new in-car delivery offering, available to Prime members with select vehicles

Next-Generation Innovations: Digital, On Demand, Always On

Manufacturing and supply chain professionals face many challenges but, according to the 2018 MHI Annual Industry Report, *Overcoming Barriers to NextGen Supply Chain Adoption*, the top ones are increasing customer demands on supply chains (73 percent) and hiring qualified workers (64 percent).

Eleven technologies are working together to create next-generation supply chains that can meet these challenges because they are digital, on demand, and always on. Eight out of 10 survey respondents say they believe these supply chains will be the predominant model within just five years.

The top technologies respondents say can be a source of either disruption or competitive advantage are:

- Robotics and automation (65 percent, up from 61 percent in 2017)
- Predictive analytics (62 percent, up from 57 percent in 2017)
- The Internet of Things (IoT) (59 percent, up from 55 percent in 2017)
- Artificial intelligence (53 percent, new category in 2018)
- Driverless vehicles and drones (52 percent, up from 30 percent in 2015)

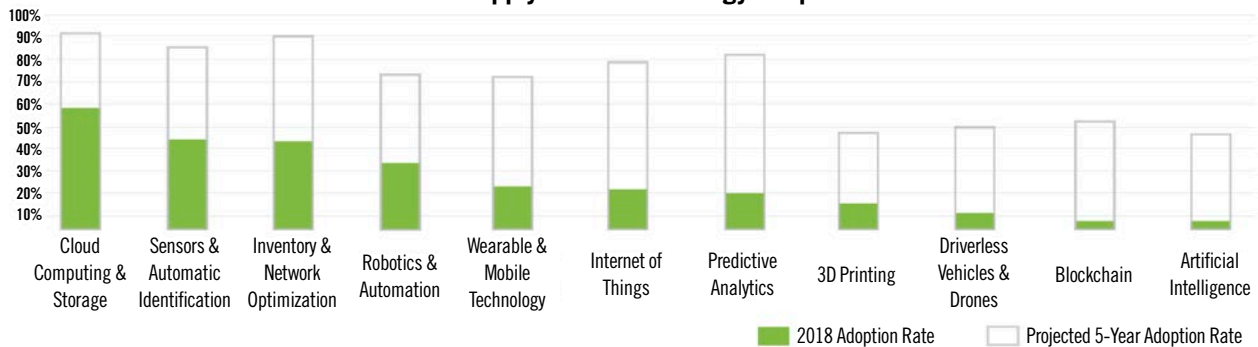
In terms of adoption rates, cloud computing and storage leads with 57 percent, and is tracking to grow to 91 percent over the next five years. Inventory and network optimization, now at 44-percent adoption, is expected to grow to 90 percent over the next five years (*see chart*).

Over the same time frame, predictive analytics is expected to reach an 82-percent adoption rate, followed by IoT at 79 percent, robotics and automation at 73 percent, blockchain at 54 percent, driverless vehicles and drones at 50 percent, and artificial intelligence at 47 percent.

Top 3 Barriers to Adoption of Disruptive Technologies

1. Making the business case for NextGen supply chain investments.
2. Tackling the supply chain skills gap and workforce shortage.
3. Building trust and security in digital, always-on supply chains.

NextGen Supply Chain Technology Adoption Rates



Supply Chain's Rising Stars

Saving more than \$10 million, updating technology across 8,900 stores, explaining results from a 27-country region to top management, and increasing forecast accuracy with new digital tools are just some achievements of the latest winners of the Institute for Supply Management (ISM) and Thomas 30 Under 30 Rising Supply Chain Stars recognition program.

Now in its fourth year, the ISM/Thomas program, intended to help bridge the talent gap in procurement and supply management, honors individuals who are 30 or younger and demonstrate leadership, innovation, collaboration, and other outstanding attributes—at work and through their professional associations.

Working in the United States, as well as Spain, Switzerland, and Singapore, the honorees are making their mark on the manufacturing industry (with the highest concentration of winners), as well as the military/government, aerospace and defense, business services, healthcare, oil and gas, pharmaceuticals, and utilities.

For example, megawatt winner Charlotte de Brabandt, a category associate with Johnson & Johnson, speaks five languages and has traveled to more than 60 countries. At Johnson & Johnson, she created a market engagement program for global energy procurement for 920 sites across three continents, and achieved final savings equivalent to one year in a three-year contract.

For a full list of these rising supply chain stars, see: 30under30.thomasnet.com



"Supply chain is an untouched territory of future developments," says Charlotte de Brabandt, megawatt winner, Rising Supply Chain Stars program.

E-SHOPPERS: IT'S A MALL WORLD

Online shoppers across the globe are buying from marketplaces and international retailers, relying more on digital devices and seeking alternate delivery options, according to the latest *UPS Pulse of the Online Shopper* study.

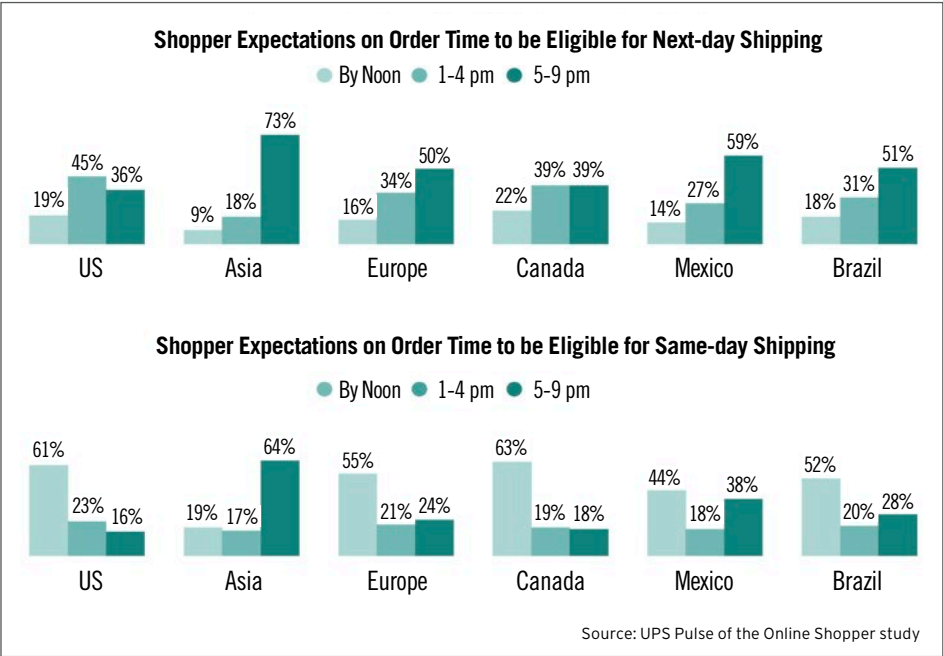
Almost all online shoppers in the markets surveyed shop at marketplaces—third-party e-commerce sites that let multiple merchants sell products. In Mexico, 99 percent of shoppers report making a marketplace purchase, compared with 98 percent in Asia and 96 percent in both Europe and Canada. The top reasons for using marketplaces are better prices and free or discounted shipping.

Global competition for customers is increasing, with a significant number of online shoppers in Canada (83 percent), Brazil (81 percent), and Mexico (78 percent) buying from international retailers. In the United States, nearly half (47 percent) of shoppers make international purchases. Consumers shop internationally primarily for better prices and access to specific or unique products.

Most global shoppers also use mobile devices to search for products, compare prices, locate stores, and track deliveries, more reason for retailers to think “mobile first.” At least 70 percent of respondents in all regions use smartphones to compare prices while in stores.

Meanwhile, shoppers expect quick fulfillment of online orders and speedy delivery across all regions, but expectations for what counts as quick delivery differ (see *chart*). Consumers in Asia, Mexico, and Brazil expect to be able to place orders later in the day and still be eligible for same-day and next-day delivery.

Across all regions, consumers make online return purchases. U.S. shoppers (44 percent) are the most likely to return an online purchase, while shoppers in Mexico are the least likely (22 percent). When both return options



are available, shoppers in Asia and Europe prefer to ship online purchases back to retailers compared to consumers in the United States, Canada, Mexico, and Brazil, who prefer to return online orders to a physical store. Among those who prefer to ship returns to a physical store, ease and free shipping returns are the leading reasons for this preference across all regions.

New retail developments that may play a role in the industry’s future include online marketplaces and technologies such as robots and chatbots, notes the study. Retail consumers are more open to some new technologies, but skeptical of others. When asked about the appeal of robots in stores, more than half of consumers in the United States and Canada are not convinced, preferring to interact with a person.

While face-to-face assistance is preferable in the store, respondents prefer self-service options online. The comfort level with using chatbots for tasks such as getting product information is highest in the United States (65 percent) and lowest in Mexico (45 percent).

INTERMODAL VOLUMES BEST IN NEARLY FOUR YEARS

Total intermodal volumes climbed 7.2 percent year-over-year in the first quarter of 2018, the strongest gain since Q2 2014, according to the Intermodal Association of North America’s (IANA) *Intermodal Market Trends & Statistics* report. Domestic containers increased 6.2 percent, international intermodal volumes grew 7 percent, and trailers led overall growth at 14.5 percent.

“Drivers for first-quarter growth were an overall strong economy, the continued growth of imports, higher fuel prices, tight over-the-road capacity, and weak comparisons to lower 2017 volumes in some markets,” says Joni Casey, president and CEO of IANA.

The seven highest-density trade corridors accounted for 62.8 percent of total volumes and were collectively up 6.2 percent. The Northeast-Midwest performed best, with volumes gaining 12.3 percent. The South Central-Southwest followed with eight percent. The trans-Canada, intra-Southeast and Midwest-Southwest lanes had growth of 6.7 percent, 6.5 percent and 5.6 percent respectively, while the Southeast-Southwest managed two percent. Only the Midwest-Northwest experienced a decline—4.8 percent—and its fourth consecutive quarterly loss.

Intermodal marketing companies saw loads rising 10.8 percent, mostly on highway gains.

3PLs Tech It to the Limit

Third-party logistics (3PL) providers are investing heavily in technology to deliver the freight visibility and business intelligence shippers increasingly require, reports the *2018 Freight Visibility Report* from the Transportation Intermediaries Association (TIA), the organization representing the \$185.7-billion third-party logistics industry.

Among the key findings of the TIA report:

- The delivery options that allow 3PLs to customize the data they provide to shippers have expanded and include everything from complex strategies to proven methods such as electronic data interchange (EDI).

- As supply chain visibility needs accelerate, the forces of growing demand, capacity strains created by the electronic logging device (ELD) mandate, and others have introduced new variables into freight markets.

- The future challenge will be to find optimal and flexible

methods to sustain the substantial gains logistics companies have already made in providing visibility to customers.

“Increased freight visibility is creating significant value in today’s turbulent business landscape, and 3PLs are answering that need,” says TIA President and CEO Robert Voltmann. “Automation, digitization, and collection capabilities have brought 3PLs closer than ever to their customers’ information.

“The ways they leverage that proximity will determine what visibility means for years to come,” he adds.

Digital Supply Chains: The Modernization Gap

In supply chain and logistics, a wide chasm separates digital innovators from those that still rely on traditional, manual approaches to optimizing their operations. Janeiro Digital, a digital business consultancy, surveyed 98 mid- and senior-level supply chain managers to learn about this disparity in digital maturity.

With notable giants such as Amazon dominating the supply chain sector, it may be no surprise that the majority of respondents—84.7 percent—perceive themselves as average to behind the curve. What is surprising is that the largest group—50 percent of total respondents—report that they still aren’t implementing any new technologies (see chart). Only one in five of those reporting that their companies aren’t implementing new technologies believe this stagnation is the wrong move, reflecting the lack of desire to change.

On the other hand, of those who say their companies are looking to implement new technologies (36.7 percent), more than two-thirds (69.4 percent) report their organization has already started its digital transformation. This is often the case—companies will delay change, but once they get started they’ll shoot forward along the path to digital maturity, according to Janeiro Digital.

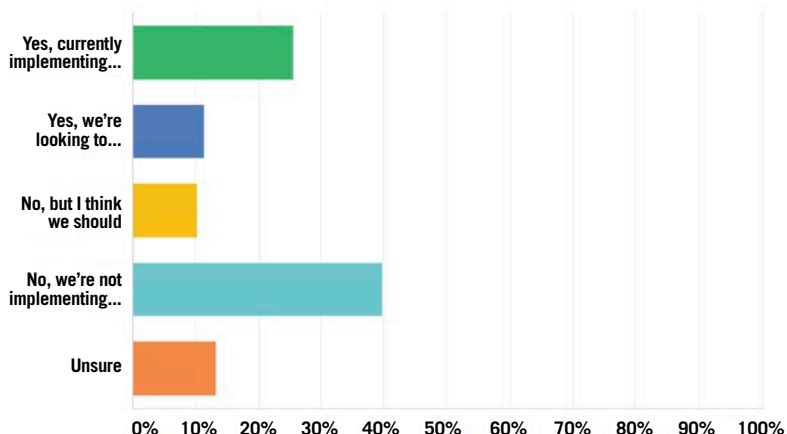
So how can companies kickstart their digital transformation journey?

The biggest challenge supply chain professionals say their organization encounters when looking to implement new technologies comes down to culture. Specifically, a lack of enthusiasm or support for change (23.5 percent) and unrealistic budgets (27.6 percent) are prominent issues, which point to the lack of appetite for change and a reluctance to put resources behind digital innovation.

Another prominent issue is legacy technology or infrastructure. Although only 4.1 percent of respondents feel their legacy technologies are holding them back from implementing new technologies, 23.5 percent indicate that they have encountered issues when it comes down to implementation.

In supply chain and logistics, tight margins make investments in new digital technologies feel risky. Inaction, however, is the riskiest long-term strategy a business can take. The decision to innovate, and ensuring you’re taking an approach to innovation that considers the technical realities of the business, is essential for finding long-term business stability and success, says Janeiro Digital.

Is your organization currently working to implement new digital technologies around supply chain & logistics?



SOURCE: Janeiro Digital

Reshoring + FDI = U.S. Jobs

COMBINED RESHORING

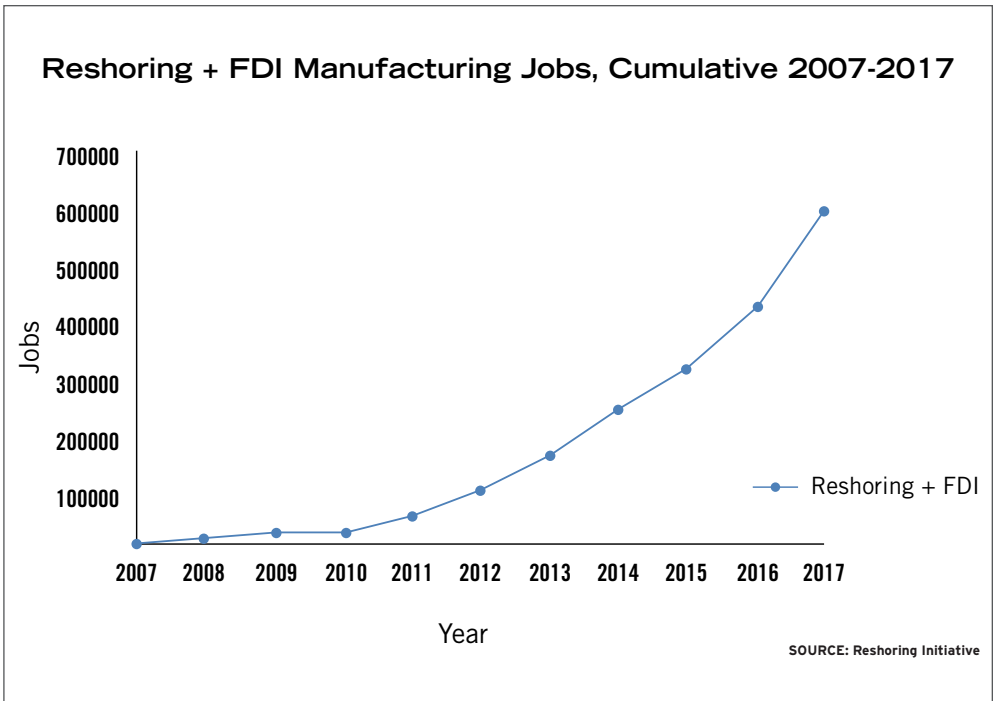
and related foreign direct investment (FDI) added more than 171,000 U.S. manufacturing jobs in 2017, up 2,800 percent from 2010, according to the Reshoring Initiative's 2017 *Reshoring Report*. The total number of manufacturing jobs brought to the United States from offshore is more than 576,000 since 2010. The reshoring and FDI jobs equal 90 percent of the 189,000 total manufacturing jobs added last year.

Combined, reshoring and FDI jobs were up 52 percent from 2016. The Reshoring Initiative attributes the increase largely to corporate tax and regulatory cuts following the 2016 election, which are seen as helping U.S. manufacturing be more globally competitive. FDI continued to exceed reshoring in terms of total jobs added, although the gap is narrowing.

The numbers demonstrate how reshoring and FDI are major contributors to the country's manufacturing rebound, the Reshoring Initiative says.

Additional factors contributing to the positive reshoring and FDI numbers include:

- Proximity to customers remained the leading factor driving reshoring and FDI in 2017, followed by image and branding, Made in the USA, government incentives, and supply chain synergies.



In 2017, job announcements due to reshoring and FDI grew at the fastest rate in history. The cumulative return of more than half a million jobs since 2010 equals more than 50 percent of the total increase in U.S. manufacturing jobs during that period.

- For the first time, Asia surpassed Western Europe in generating jobs by FDI, due mostly to increased investment by China and stronger showings from Japan and Korea.
- The Southeast and Texas remain the top regions for reshoring and FDI, with the Midwest gaining ground in second place due to its strong industrial base.
- Transportation equipment remained the strongest industry, accounting for nearly 36 percent of total jobs returned.
- Apparel and medical equipment saw the biggest increases in industry ranking.

—Jeff Reinke, for Thomas

PAUL BIPPUS BETS ON U.S. OPERATIONS

Paul Bippus GmbH, a Germany-based manufacturer of precision parts, is launching new production operations to supply Robert Bosch LLC in Dorchester County, South Carolina. The company's \$16.1-million investment is projected to create 45 new jobs.

Founded in 1958, Paul Bippus GmbH produces precision turned parts for automotive manufacturing applications, including starters, braking systems, fuel injection systems and more. To house its new Dorchester County manufacturing operations, the company will construct a 42,000-square-foot facility

in the Muckenfuss Industrial Park in Summerville, South Carolina.

"Bippus is thrilled to land our first U.S. plant in Dorchester County," says Paul Bippus, GmbH President Bastian Bippus. "We are a family-owned operation that values a welcoming community that will enable us to continue our success and help us grow our first American operation. The county and the Charleston region offer significant advantages for locating here, allowing us to capitalize on our supplier partnership with Bosch LLC."

Panama Canal Has a 3-in-1 Day

The Panama Canal successfully transited three LNG vessels through its Neopanamax locks on April 17, 2018, marking a first for the waterway.

The *Clean Ocean*, *Gaslog Gibraltar*, and *Gaslog Hong Kong* vessels first arrived at the Canal from the Pacific Ocean then transited north, departing on the Atlantic side.

The development marks a significant milestone for the Panama Canal and its service of the burgeoning LNG segment, which began transiting the waterway for the first time following the inauguration of the expanded Canal. The segment has seen steady growth in the nearly two years since.

Currently, the Panama Canal offers one of the seven Neopanamax reservation slots available per day specifically to LNG shippers, which currently average



five transits per week. However, during periods of high seasonal demand, the waterway has transited two vessels in one day on 14 separate occasions.

In this fiscal year, as of March 2018, the Canal has locked 134 LNG transits.

Alibaba Spends Big To Upgrade Logistics Network



Forty-three percent of Chinese consumers lived outside urban areas in 2016, many in remote, rural areas challenging to access via road, estimates The

World Bank. To reach these consumers, e-commerce and logistics companies need to invest heavily in new logistics infrastructure.

That's why Chinese e-commerce giant Alibaba will pour \$720 million into Huitongda Network, a subsidiary of Jiangsu Five Star Appliances, to build new logistics and supply chain networks in rural China, reports Nicholas Shields, *Business Insider Intelligence Transportation and Logistics Briefing*. The investment is part of Alibaba's larger effort to spend aggressively to upgrade its logistics capabilities and access millions of potential new customers.

While the companies didn't release specifics, they could potentially build new fulfillment centers and warehouses, as well as order more delivery trucks, to help Alibaba tap into Huitongda's largely rural customer base. Huitongda operates more than 80,000 franchised stores, which cover about 200 million rural residents.

That's why Cainiao, the third-party platform that coordinates Alibaba's deliveries, is aggressively piloting drone deliveries—it hopes this effort can grow its customer base, currently concentrated in urban and suburban areas. Chinese logistics companies handled 13.9 million parcels in the second half of 2017 alone, and Alibaba's expanded operations will drive volume higher in the years ahead.

MAKING A DRY RUN

Shipping in containers is an economical and safe way of shipping most types of cargo. But putting cargo into an enclosed steel box also entails a constant risk of moisture damage for almost every kind of cargo on every voyage, according to Absortech. When damage occurs, it may result in substantial losses and costs. In fact, a considerable amount of moisture damage remains unrecognized, because it is considered "normal."

Absortech recommends taking these steps to reduce the risk of moisture damage:

Ensure the container is watertight. A minimum requirement is that the container be watertight, without any risk of rain and spray. Check every container before loading. The doors are especially vulnerable to damage that may not easily be noticed.

Check the seals. Certainly no container is airtight, but a container in good condition allows only air and moisture to move in and out slowly. This significantly reduces the amount of moisture moving into the container under common circumstances.

Tape the vent holes if you are shipping a dry cargo. For a moist cargo, such as agricultural commodities, it may be better to leave the ventilation holes open in certain circumstances.

Make sure the container is dry. A container that has been washed before loading, brought in from outside to a warm loading area, or stored in a humid place, may contain a lot of water. Pay particular attention to the container floor. The humidity of the wood should not be more than 15 percent.

Ensure all pallets and other wooden dunnage are dry. It is easy to check the moisture content of the wood with a handheld moisture-reading device.

CONSUMERS: NO PATIENCE FOR SUPPLY CHAIN FAILS

Seventy-eight percent of consumers want to receive updates on the status of their orders when purchasing goods, and they won't hesitate to switch brands if supply chain performance fails to meet their expectations, according to a global survey conducted by YouGov and sponsored by Infor, a provider of industry-specific cloud applications. The survey polled 6,285 consumers in France, Germany, the UK, and the United States.

According to consumers surveyed, estimated time of arrival (49 percent) and real-time location information (29 percent) are most important to know when waiting for a purchase to be delivered at home or to a pickup location.

Survey results suggest that consumers are more likely to switch brands related to their day-to-day needs, including groceries (59%), household products (53%), fashion/footwear (40%), and health & beauty products (37%). However, even in product categories such as high-tech (35%), furniture (32%) and automotive (19%), consumers indicate that they would switch brands if supply chain performance faltered.

Infor had sponsored a similar YouGov survey in 2016. "At that time, among millennials (18-34), fashion was rated the number one product category," says Greg Kefer, vice president of marketing for the Infor GT Nexus Commerce Network. "Now, we see categories such as food and beverage and consumer products rank ahead of fashion, with high-tech not far behind.

"This is an indication that consumer expectations are on the rise across product categories," he adds.

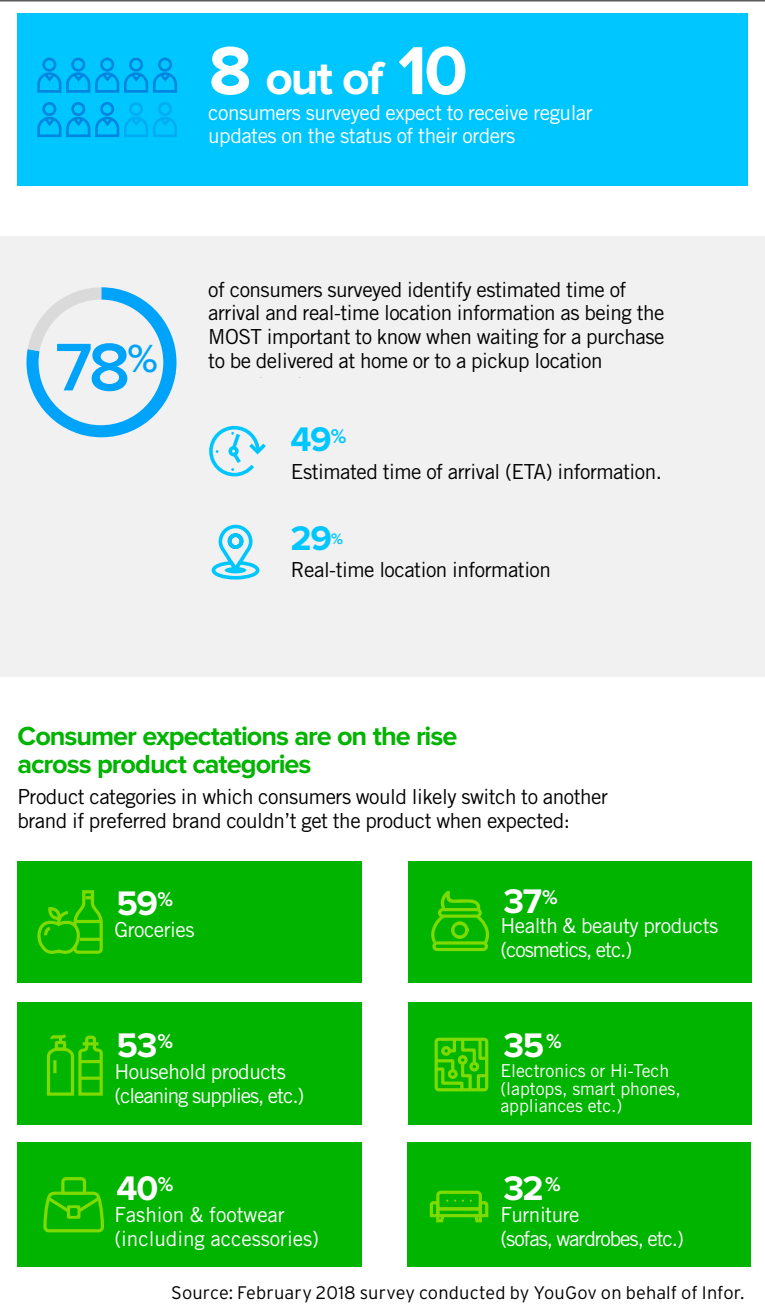
"In our business, supply chain visibility is frequently cited as a foundational element of innovation and transformation," Kefer notes. "Companies must be able to 'see' across the vastness of their global supply chains, so they can identify gaps and make improvements."

However, in a recent GEODIS survey of 623 supply chain executives, only six percent of companies believe they've achieved full supply chain visibility.

In working with customers, Infor has found that next-day or even same-day delivery of goods is becoming the expectation for consumers, not the exception.

And, as the YouGov survey suggests, this expectation goes beyond e-commerce/retail into other industries.

"Consumers can now get very granular information about product status and location, and they increasingly are associating supply chain performance



with brand preference," Kefer says.

In fact, the YouGov survey reveals that nearly half (48%) of consumers say they know what the "supply chain" is. Awareness of the supply chain was particularly high in the UK (77 percent) and the United States (58 percent)—markets typically characterized by retail/service-centric economies.

Companies that sell to other businesses must face the reality that their customers also are consumers who see firsthand supply chain innovation—or lack of—when shopping online or on their mobile devices.

Consumers now expect a supply chain visibility solution as part of the brand experience.

Green Shipping: Taking it Portside

PORTS PLAY AN IMPORTANT role in reducing the global carbon footprint of maritime shipping, says a new report by the International Transport Forum (ITF).

Greenhouse gas emissions from shipping currently represent around 2.6 percent of total global emissions. Without reduction measures, this share could more than triple by 2050.

The International Maritime Organization has set a target of reducing shipping CO2 emissions by at least 50 percent by 2050 compared to 2008 levels. To achieve this, the shipping industry needs to put stringent measures in place.

While the focus is naturally on the ships themselves, portside measures can significantly add to the environmental performance of shipping and the decarbonization of maritime transport, the ITF report says.

Today, 28 of the 100 world’s largest ports (by total cargo volume handled) offer incentives for environmentally friendly ships:

- Some U.S. ports offer cost savings to ships that reduce speed when approaching the port.
- The Panama Canal Authority provides priority slot allocation to greener ships.
- Spain includes environmental incentives in the tender and license criteria for towage services provided at ports.
- Shanghai has an emission-trading scheme that includes ports and domestic shipping.

However, green incentives typically apply to fewer than five percent of the ships calling at a port offering an incentive scheme. Only five ports use CO2 emissions as a substantial criterion for incentives.



Any incentives that ship owners currently have to order more efficient ships with lower emissions are a result of port-based incentives only to a small extent.

The report recommends to:

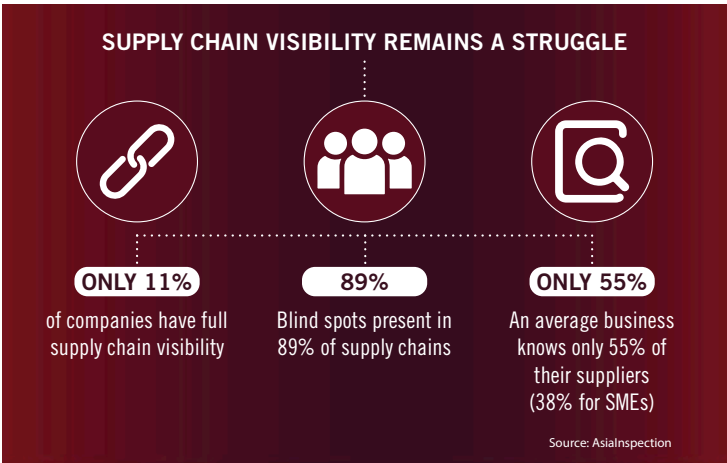
- Acknowledge the important role of ports in mitigating shipping emissions.
- Expand port-based incentives for low-emission ships.
- Link port-based incentives to actual greenhouse gas emissions.
- Move to a more harmonized application of green port fees.

Outsourced Manufacturing: Ethical and Environmental Concerns Grow

Some interesting trends around the ongoing trade war between the United States and China, as well as continuing challenges with environmental issues and health and safety, have emerged. That’s according to AsiaInspection’s (AI) quarterly barometer of outsourced manufacturing and the quality control services industry for Q1 2018.

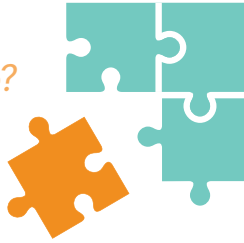
Highlights of the report include:

- As many as 73 percent of North American companies consider China their top sourcing destination and more than 85 percent of them have voiced concerns about tariffs and protectionism.
- Chinese manufacturers remain unperturbed, with a 5.9-percent year-on-year increase reported in inspection volumes.
- Sourcing outside of Asia maintains an upward trajectory, reflecting the ever-increasing diversification of sourcing patterns. The Latin America region is seeing a large increase, with first-quarter demand for inspections and audits increasing more than 26 percent year-on-year.
- Health and safety issues are still a big concern in 2018. This year, these issues overtook other challenges such as wage compliance.



■ Brands and manufacturers are still struggling with environmental challenges, leading to a stronger demand for environmental audits. Pollution and waste management accounted for 80 percent of non-compliances, with more than two-thirds of these cases classified as major, finds AI.

Supply Chain Challenge?
SOLVED!



Lower Cost Through Supply Chain Efficiency

Unyson's recommendations on ordering discipline improve efficiency at a lower cost.

THE CHALLENGE

As a significant player in the food and beverage industry, Unyson's customer was looking for a way to be more efficient and lower transportation costs. Their customer's buying patterns were sporadic, resulting in low trailer utilization and inconsistent lane volumes. Poor order predictability also drove service issues with their customers and unexpected rate increases from the market.

THE SOLUTION

By modeling the customer's supply chain, Unyson was able to better understand the buying patterns of the receivers, identify inconsistent shipping lanes, and understand the cost of underutilized equipment. The model considered lead time, frequency of shipments per month, and average utilization of a trailer. Unyson's results indicated that managing buying patterns could bring significant efficiency and

lower cost. The customer used Unyson's supply chain model to negotiate terms with their customers, creating incentives to order less frequently with larger quantities per order. This resulted in lower costs due to less volume, a lower cost per pound with larger shipments, and better carrier rates on more consistent, reliable freight.

Unyson's customer gained improved order predictability and better service at a lower cost.



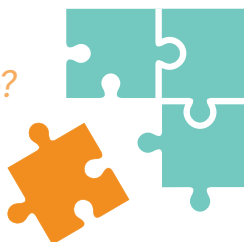
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Supply Chain Challenge?

SOLVED!



Mobile Powered Workstations Increase Receiving Velocity by 40%

Direct Relief turns to Newcastle Systems to speed the handling of crucial medicines to people in dire need.

THE CHALLENGE

Pharmaceutical companies and medical manufacturers donate most of the medicines and supplies that Direct Relief distributes to people facing disasters. Storage space is limited, so the ability to receive and then ship products fast is crucial. There is also the critical requirement of reaching 100% accuracy when distributing medicines. Since Direct Relief's inventory is comprised of donated items, SKUs are constantly changing, which also adds to the complexity.

THE SOLUTION

To improve speed while still maintaining accuracy, the facility recently moved to paperless processing and introduced Newcastle carts with integrated lithium power that have improved operations tremendously. The carts are currently used for inbound receiving, double-checking picked orders, and as mobile pack stations. The mobility

allows them to move to wherever work requires them to go.

The carts can power just about any peripheral Direct Relief could want on a cart. The receiving carts carry a laptop, monitor, scanner, printer, an electronic scale, supplies and a wastebasket. Both the carts and medicines are wheeled to storage locations or picking bins for direct put-away. This saves additional handoffs and assures that the products are placed in correct locations.

Similarly, the carts used in the packing area also contain computers and other peripherals, including printers, to create shipping labels and packing lists. The cart's batteries provide more than enough power to operate for the entire shift, but they are also hot swappable should the need arise for more power.

The combination of paperless processing along with the carts has led to some impressive results. "In the first month that it went live, we had an increase of 40%

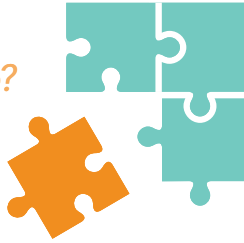


of the number of batches that we received. We did them more accurately and in 20% less time," says Thomas Tighe, President & CEO of Direct Relief.



To learn more about Newcastle's Mobile Power Solutions, email sales@newcastlesys.com, call 781-935-3450, visit www.newcastlesys.com.

Supply Chain Challenge?
SOLVED!



Full-Service Fulfillment Solution Helps E-commerce Company Deliver

Saddle Creek helped allheart get orders out quickly, control costs, and keep up with demand spikes.

THE CHALLENGE

As America's Medical Superstore, allheart carries everything from engraved stethoscopes to embroidered lab coats. Delivering personalized items in a timely fashion sets the company apart.

To get orders to customers quickly, accurately, and cost effectively, allheart needed a more strategic location, enhanced personalization capabilities, and improved visibility. The company also needed a provider with the flexibility to keep up with spikes in customer demand – particularly around peak gift-giving times like the holidays, back-to-school, and graduation.

allheart turned to Saddle Creek Logistics Services for a full-service, custom fulfillment solution.

THE SOLUTION

By moving allheart's distribution facility to Fort Worth, Texas, Saddle Creek provided advantages for inbound sourcing, improved speed to market, and reduced costs.

Saddle Creek also implemented



an order management system (OMS), which integrates with allheart's proprietary ERP and feeds into the 3PL's warehouse management system (WMS).

This seamless integration provides complete visibility to allheart's customer orders, allowing the company to better manage inventory for rapid order fulfillment and provide customers with real-time order status information.

With enhancements like these, Saddle Creek has helped allheart to get orders out quickly, control costs, provide customized products, and keep up with business fluctuations.

"In my mind, what set Saddle Creek apart was their technology, their flexibility, and their ability to design a process for my business," says allheart CEO Richard Pope.

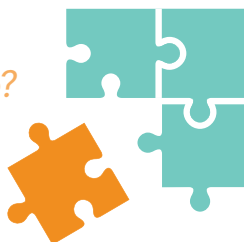
Today, he leaves warehousing, fulfillment and customer service to the experts and focuses on what he does best – running his growing business.



To learn more about Saddle Creek solutions, email sales@sclogistics.com, call 866-668-0966, or visit www.sclogistics.com.

Supply Chain Challenge?

SOLVED!



Technology Solution Offers Increased Savings

SwanLeap's Artificial Intelligence helped an HVAC supplier increase efficiency and annual savings.

THE CHALLENGE

Companies are struggling to stay competitive as supply chain technologies grow into the NextGen solutions today's market demands.

Research Products, an HVAC supplier, was plagued by inefficiencies and overspending due to their antiquated use of a static routing guide. The rules on their routing guides never changed, but variables such as price were constantly changing.

They were also using a mode shift rule to determine whether to ship something parcel or freight based on a weight cut off, all while quoting each shipment manually. This combination was causing missed savings, preventing growth, and wasting their employees' valuable time and energy.

THE SOLUTION

Research Products made the bold decision to move beyond TMS and adopt SwanLeap's NextGen supply chain technology.

The company unknowingly

had an erroneous rule in place that said they could only ship with a single carrier in a specific region. Using SwanLeap's carrier optimization feature, the company saved \$7,080.94 in the first month by jettisoning the old, and incorrect, rule.

Their mode shift rule was locking them into unnecessary shipping costs because of the system's inability to select a mode without considering weight. SwanLeap's pre-rating system finds the optimal carrier mode regardless of weight—yielding an additional savings of \$2,622.73—that's almost \$10,000 saved in one month by breaking just two rules.

Additionally, SwanLeap's assisted bidding tool created an immediate \$360,000 in annual savings for Research Products. Now, logistics and accounting can focus on customers instead of tasks with confidence in the smart technology driving their supply chain.



To learn more about SwanLeap's solutions, call 855-737-3444, email info@swanleap.com, or visit www.swanleap.com.



LEAN SUPPLY CHAIN

BY PAUL A. MYERSON

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Don't Let Your Office Go to Waste

When analyzing your supply chain for efficiency improvements, it can be easy to ignore administrative activities. But office activities can constitute approximately 50 percent of the order-to-shipment lead time, and about 60 to 80 percent of all cost pertaining to meeting your customers' needs.

Many companies treat office activities in the supply chain and elsewhere in business as an afterthought when it comes to efficiency and quality. The reason is that administrative functions are not always well documented and waste is harder to see.

When you examine office activities, you'll find waste largely consists of too many handoffs, unnecessary walking, and lack of proper understanding. To gain more insight, it helps to think in terms of the following eight office wastes, which form the mnemonic TIM WOODS:

1. Transportation. Refers to multiple paperwork handoffs and too many required approvals.

2. Inventory. Excess inventory can include too many office supplies and batch processing of transactions and reports. Unnecessary inventory means increased lead time.

3. Motion. Excess motion primarily refers to people having to walk to office equipment or to find people.

4. Waiting. Examples include

system downtime, paperwork/approval queues, and waiting for information from outside sources.

5. Overproduction. Printing paperwork before it is needed, purchasing items before they are required, and processing paperwork before the next step is ready for it may create a queue that will increase lead time.

6. Overprocessing. Includes re-entering/re-checking data, making extra copies, distributing too many reports, making excessive transactions, management accounting activities, and adding unnecessary details in expense reports or budgets.

7. Defects. This is often due to mistakes on paperwork/data entry, which increase lead time or result in unfilled orders and other potential manufacturing issues.

8. Skills. A lean program should utilize employees' skills and ideas. Everyone must generate ideas for improvement and be involved in implementation.

A logical next step in this process

is Value Stream Mapping (VSM), a lean mapping technique used to analyze the flow of materials and information currently required to bring a family of products or services to a consumer. Companies use VSM to identify value-added and non-value-added activities and to help create a more competitive overall process.

Companies can also use VSM to observe, measure, map, and analyze the office's processes such as sales quote and order handling, design/engineering processes, approvals, financial accounting, and material procurement.

After applying the eight wastes to administrative functions, you may find a variety of inefficiencies caused by technology gaps, excessive controls, dated process design, or poor layout.

By applying lean tools such as standardized work, visual controls, work cells, and one piece flow to develop a much improved future state, your organization can benefit by reducing work-in-process batch size and information dwell time, compressing lead times (including the order-to-cash cycle), and improving information accuracy.

Now's the time to get motivated to look more closely at administrative functions in your supply chain. ■



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[VIEWPOINT]

BY CYNDI BRANDT

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Recruiting and Retaining a Generation Z Workforce

Truck driver retention and recruitment consistently top the list of concerns for the transportation sector. The industry will need to hire roughly 900,000 new drivers to keep up with demand throughout the next decade, according to the American Trucking Associations.

As millennials become more seasoned professionals and more immersed in their current industries, leaders at every level should now start thinking about recruiting the next generation—Generation Z. The oldest individuals in Gen Z are just now turning 23, and they have the potential to enhance the industry through their expansive knowledge of technology and desire to learn.

Recruiting these individuals will require different tactics than the strategies used to attract their immediate predecessors.

Because they are the first generation to have lived all their lives with immediate access to high-speed internet tools, they have an uncanny understanding of technological devices and the ability to learn systems quickly, then utilize them with extraordinary efficiency.

To target these digital natives, the adoption of more sophisticated technology and tools across the

industry needs to grow to attract drivers, managers, technologists, and support staff throughout the next 10 years.

This increase in recruitment through technology will offset the big wave of retirements that has already begun and help fill the thousands of currently available positions in the industry.

Members of Gen Z tend to be smart and creative, yet often naively overestimate their own creativity, according to a study conducted by the Adobe Education Exchange. Mentors of this generation also discovered these individuals are not as well-prepared for adult work life as previous generations were at the same age. They found they lack real-world experiences.

Utilizing this information, the trucking industry must be able to provide more worker training programs to ensure individuals entering the industry feel prepared and well

supported. Research has shown they're eager for opportunities to learn and to be mentored.

Because they tend to be socially at ease, they thrive in mentorship situations, soaking up not just basic job and industry facts, but also wisdom, insight, and perspective from company trainers, seasoned co-workers, and corporate leaders.

A greater understanding of who members of Gen Z are, and their overall strengths and weaknesses, should help transportation organizations better plan today what their companies will look like a decade down the road. That can influence everything from the purchase of technological systems and new vehicles, to organizational structures, corporate training initiatives, and allocation of dollars to various line items in future budgets.

Gen Z, like all generations preceding it, offers companies a mixture of challenges and opportunities. Based on the research, the opportunities they represent outweigh the challenges. Companies need to begin thinking ahead and become ready to take advantage of what this generation has to offer when they start showing up for work within the next few years. ■

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[IT MATTERS]

BY JIM HAYDEN

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Can You Handle the IoT Big Data Onslaught?

Supply chain managers (SCMs) recognize the potential benefits of big data platforms, leveraged and fed by the Internet of Things (IoT). Yet, the combination of IoT and real-time data collection creates an overwhelming data flow, threatening to drown organizations unprepared for the influx of that data. Companies need to understand their analytical goals and underlying architecture in order to find the appropriate IoT platform or other solution.

Millions of data points from a manufacturing and logistics operation allow for predictions about future performance. Precise predictive shipment ETAs are a potent tool for SCMs. Accurate predictions confidently estimate arrival times, lessening the need for slack in many processes and saving money through shortened delivery windows, reduced buffer stock, and more.

Live streaming IoT facts give SCMs an unbiased source of truth. Real-time data allows SCMs to make decisions about disruptions before losing money and time. Consistently meeting service level agreements means higher customer satisfaction and fewer stockouts, creating more agile and efficient supply chains.

However, to take advantage of the influx of supply chain data, SCMs need the architectural assets to collect, manage, and analyze both real-time and historical data. They need to first

establish high-quality, real-time data sources. Most organizations still rely on the old electronic data interchange (EDI) format; these data are not real time and are often human-generated and susceptible to error.

By integrating data from already available sources such as enterprise systems, telematics devices, and real-time data feeds, SCMs can establish a stream of accurate, real-time data.

Integrating new real-time data with historical/third-party data is challenging. To tackle integration challenges, SCMs have three choices:

1. Build your own IoT platform.

Controlling and customizing features for your unique needs is naturally appealing. The problem is the sheer amount of time, money, and expertise required to build and maintain an IoT platform. You are not likely to have experts in the relevant hardware devices and software components in your company—and that's before

considering that the platform has to align with other IT initiatives.

2. Purchase IoT software through your ERP or CRM solution provider.

Buying software from a company that is familiar with your business processes makes sense, but their architectures may or may not be able to handle real-time processing of hundreds of millions of daily events or scale to IoT industry volumes.

A semi-functional mix of third-party components often is what ends up in use; however, it frequently can't do the critical work of sharing data with external parties in your global supply chain network.

True visibility requires information sharing and communication between all parties. IoT can create a connected global ecosystem of data producers and consumers, but not if it is a completely closed-end system.

3. Partner with an IoT platform provider.

This speedy path to delivering value allows SCMs to focus on the applications instead of the underlying platform. But pay attention to data privacy. Using a third-party broker usually allows organizations to share just the relevant data for more informed decisions without a full integration and its security risks.

Any company can generate insight from the mass of data, no matter what solution they pursue. Big data is leveling the supply chain playing field. ■

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REINVENTING YOUR WAREHOUSE OR DC

Some patently obvious warehouse improvements in layout and organization, docking, picking and receiving, fulfillment, and packaging can boost your bottom line and improve customer satisfaction.

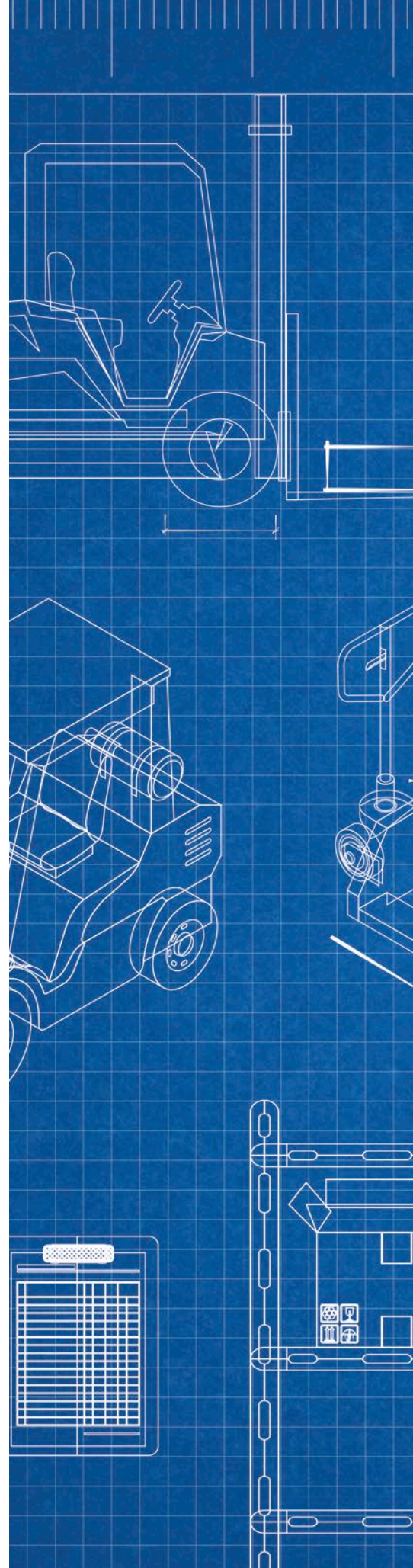
by Karen M. Kroll

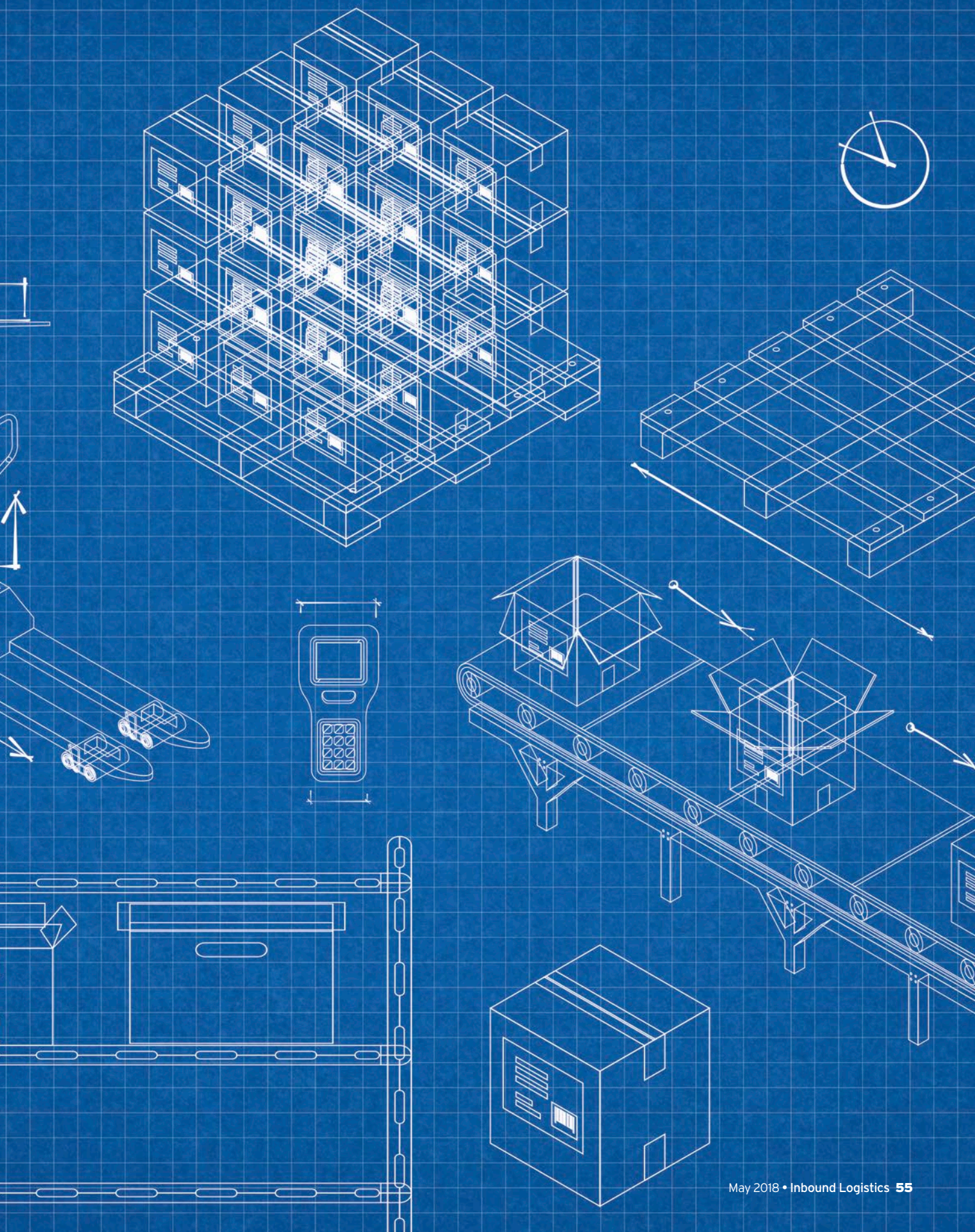
Jared Hammond, continuous improvement engineering manager with Kenco Logistics, a third-party logistics provider based in Chattanooga, Tennessee, was working with a warehouse team to build cereal displays. He noticed the forklift operators had to walk to a central clerk to obtain their orders. Once they arrived, they often had to wait for the clerk—who could be on the phone or working with other employees—to hand them their orders.

The result? “People were standing around and waiting, through no fault of their own,” he says.

Hammond worked with his colleagues to make orders available to operators through a heijunka box, which is similar to an intra-office mailbox. The instructions are arranged so operators know how to pull their next job. That has reduced the time the operators spend waiting for work. It has also nearly eliminated the interruptions the clerks must handle.

This example highlights one of the many ways—some small, some not—companies can boost their bottom lines and improve customer satisfaction by mastering the fundamentals of warehouse operations, including layout and organization, docking, picking and receiving, fulfillment, and packaging. Having a solid grasp of these functions pays off, whether an organization’s goal is to improve the efficiency of day-to-day operations, or implement a warehouse management system or other upgrade.





Several years ago, Mingledorff's, a Norcross, Georgia-based distributor of heating, ventilation, and air conditioning equipment, began using *Latitude WMS* from PathGuide Technologies across its 35 locations. Sean Wallace, business systems operations manager with Mingledorff's, knew the tidier the warehouse—products labeled correctly, little or no obsolete inventory—the more streamlined the implementation process. "I'd urge the warehouse staff to get things in order," he says.

Historically, warehousing often was considered a non-value-adding activity and ignored, says Michael Kuhl, professor and interim head, industrial and systems engineering department, Rochester Institute of Technology. Few facilities, however, can produce items on demand and ship them directly to the customer within the short lead times customers expect.

"As a result, warehousing and logistics have become increasingly important to a company's success," Kuhl notes.

Here are the basic areas to cover when renovating your warehouse or distribution center:

Start with the end in mind.

To improve warehouse operations, management needs to understand the processes in place, the reasons for them, and how—if at all—they support their strategy and customer requirements.

"All warehouse operations should link to the organization's goals and strategies," says Steven Murray, lead process auditor and senior research associate with the Warehousing Education and Research Council, a professional group. "If they don't, any other changes or investment have little chance of improving operations."

That means every employee, including those on the warehouse front lines, should know management's goals and customers' needs, and how their jobs relate to them, Murray says. For instance, if the organization is striving to be a low-cost operator, warehouse employees likely will focus on eliminating steps in product handling to reduce labor expense.

As part of this analysis, management should review the organization's



PHOTO: East Coast Warehouse

Retrofitting a warehouse with high-cube racking can help maximize costly inventory space.

portfolio of warehouses, says Dale Rogers, professor and director of the Frontier Economics Logistics Lab at Arizona State University.

One question to ask: how many large and permanent warehouses does your organization need? If a substantial percentage of your volume occurs in one quarter of each year, one or two permanent facilities, supplemented with several flexible warehouse operations, may cost-effectively meet demand.

"Would you build an entire church for Easter Sunday?" Rogers asks.

Plan the space outside the warehouse.

In the past, dock space often was considered non-essential, and square footage was kept to a minimum. As the speed of many supply chains accelerates and cross-docking plays a greater role, however, this space becomes more valuable.

"Having an area large enough to conduct all dock functions minimizes chokepoints, allows for more accurate receiving and shipping, and helps maintain a safe area in which to work," says David Rehnert, regional service center manager with C.H. Robinson, a provider of logistics services based in Eden Prairie, Minnesota.

To further boost efficiency, trucks should be assigned to receiving doors close to their designated put-away areas.

Ensure visibility to arriving and departing products.

"You can't be efficient inside the box if you don't have the visibility, systems, and processes to manage what's coming in

and going out of the warehouse," says Jamie Overley, CEO of East Coast Warehouse, a logistics provider based in Elizabeth, New Jersey.

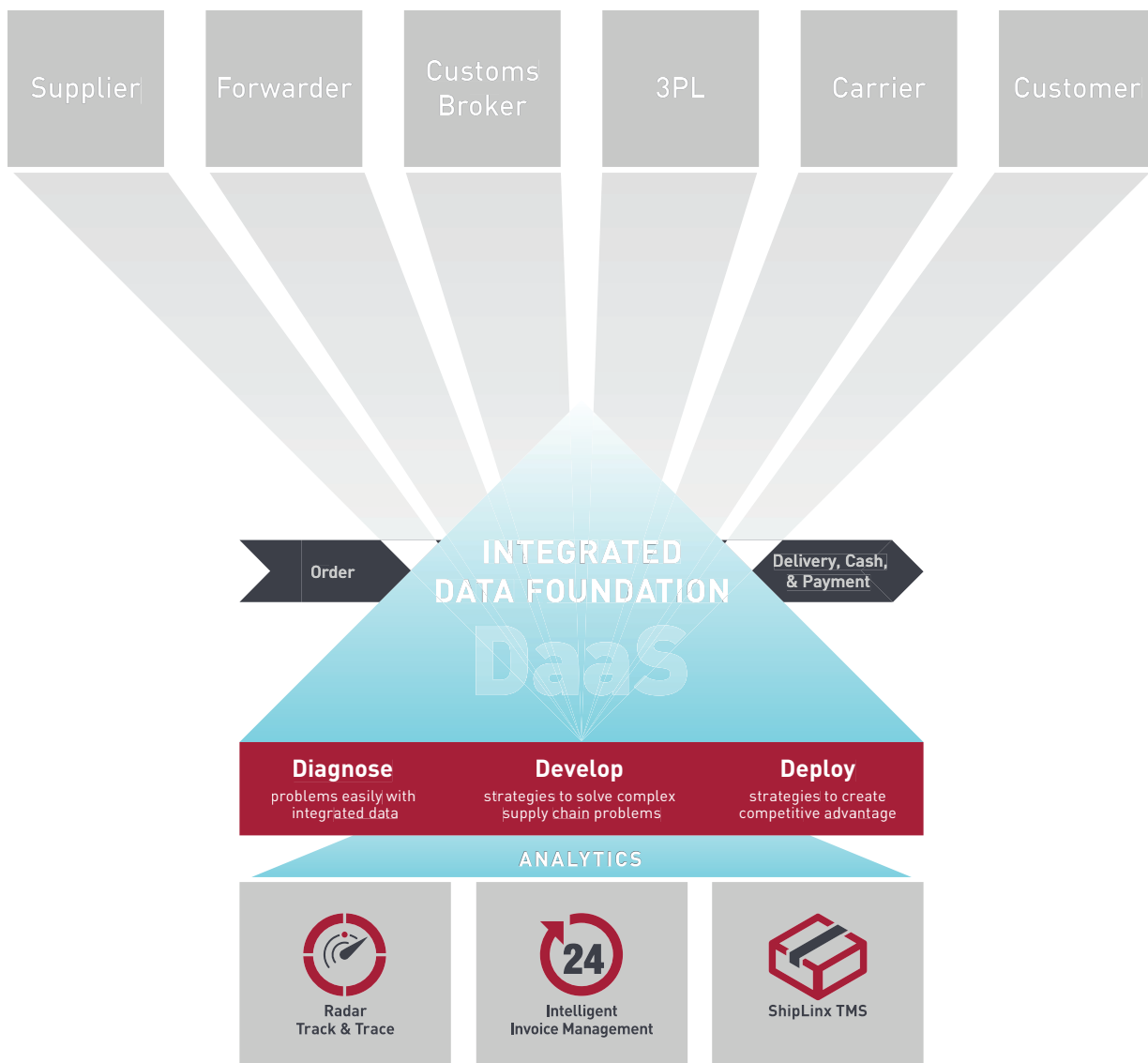
"This typically requires some level of automation, as well as collaboration with suppliers, carriers, and others who interact with warehouse employees," he adds. After all, it's difficult to boost efficiency if warehouse employees have no idea what products are arriving, and when. Conversely, if employees are alerted to spikes in arrivals, they can arrange to have the labor and equipment needed to manage them.

While some suppliers may balk at providing advance shipment notices (ASNs), many that are shipping to big-box retailers typically already are providing ASNs for those clients.

If the current process includes labeling, the company can work with suppliers to develop a standard format. Often, employees in procurement and/or product management will need to take on the job of encouraging—if not requesting—suppliers to provide this information. Warehouse employees themselves typically aren't in a position to ask for this from suppliers.

Scheduling appointments for outbound shipments gives warehouse employees a chance to ensure the product is available when the truck arrives. "If carriers arrive willy-nilly, items can sit on the dock, taking up room," Murray says.

Train employees. Capable, competent employees are the backbone of an efficient warehouse. Proper training is critical.



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Imagining Tomorrow's Warehouse

What might an efficient, effective warehouse look like a decade or more from now? "I expect to see fully automated warehouses, where people monitor the operations to address system anomalies," says Michael Kuhl, professor and interim head in the industrial and systems engineering department with the Rochester Institute of Technology.

Rather than acting as storage locations, warehouses will primarily function as fully automated cross-docking facilities, and a way to optimize logistics, Kuhl says. Getting to this point will require sensing, localization, and computer vision tools, as well as machine and deep-learning techniques that let supply chain professionals understand, evaluate, and make real-time routing and processing decisions.

The future warehouse will also involve greater use of wearable and mobile technology that enables functions such as vision picking, in which workers can scan a pallet just by looking at it, predicts Gary Allen, senior vice president of supply chain excellence with Ryder Systems. Wearables tend to offer more flexibility than traditional handheld scanners or voice picking, he adds.

The Internet of Things and robots will improve inventory control. "You can achieve 99-percent inventory accuracy because you're constantly monitoring it," says Evan Garber, CEO of EVS.

Any deployment of smart technology needs to drive efficiency and service-level improvements. Technology for its own sake rarely offers benefits.

"Some organizations have placed employees in situations where they didn't have sufficient training and weren't allowed time to understand procedures before being given the autonomy to operate alone," Rehnert says.

The results often include mistakes and bottlenecks in multiple areas of the warehouse, leading to problems for customers. Robust standard operating procedures, checklists, and e-learning can reduce training time.

Limit the number of operations contained within a single warehouse.

"You can't ask a distribution center to do too many things well," Rogers says. He uses the returns function as an example. Returned products tend to be small, but messy and time-consuming because they don't follow a schedule, and each return may require different handling.

"The problem is that the distribution center is working hard to do its main job, and other functions, such as returns, can be distracting," he says.

"You always want to reduce variability," Rogers says. While things happen that introduce "lumpiness" into the process, when possible, build a warehouse and network operation that can efficiently handle disruptions.

Optimize layout and processes.

The warehouse layout should, first and foremost, promote safety. This generally means

incorporating designated walk areas, maintenance areas, and materials handling equipment areas.

The process used to put products away is key. "Product put-away determines the rest of the operation's efficiency," notes Evan Garber, CEO of EVS, a Boulder, Colorado-based provider of ERP software and consulting. One simple rule: high-volume items—"A" products or fast movers—should be located near picking and shipping operations. Items that tend to stick around a while can be located farther from the action.

Even if the processes are manual, an efficient warehouse or distribution center will be "process driven," explains Mark Van Leeuwen, regional sales manager with PathGuide Technologies.

For instance, some companies allow employees to grab inventory from the warehouse and bring it back to their desks, perhaps to show a potential customer. While accommodating customers' needs is paramount, any inventory changes should follow a process.

Similarly, some management teams treat their warehouses as "black holes," and do all they can to avoid them, Van Leeuwen says. They're missing opportunities.

"Other companies understand that if they dial in their warehouses to the rest of the organization, it becomes a competitive advantage," he says. ■

Promoting safety is paramount when developing warehouse layouts. To that end, maintenance space and materials handling equipment areas should be clearly designated.

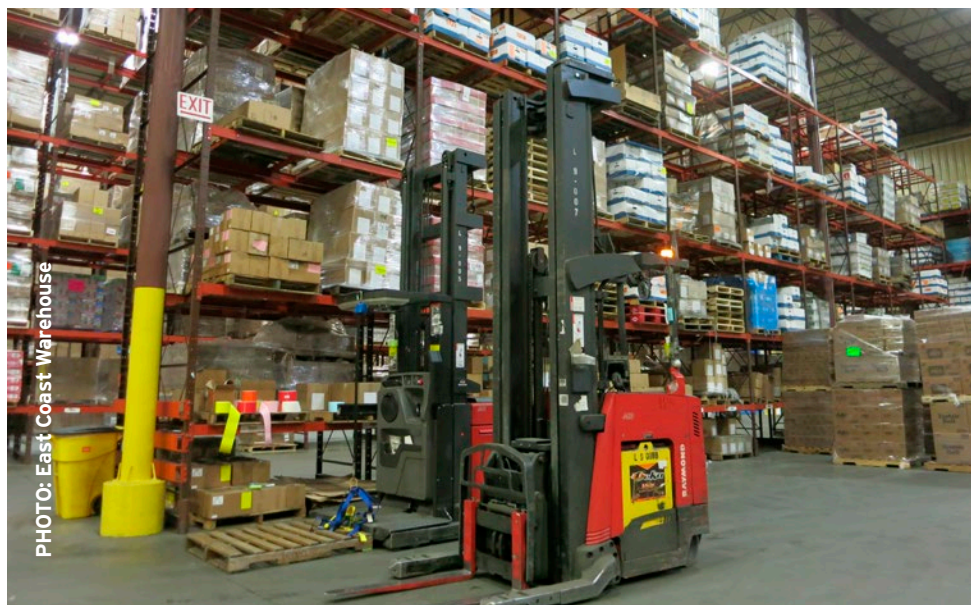


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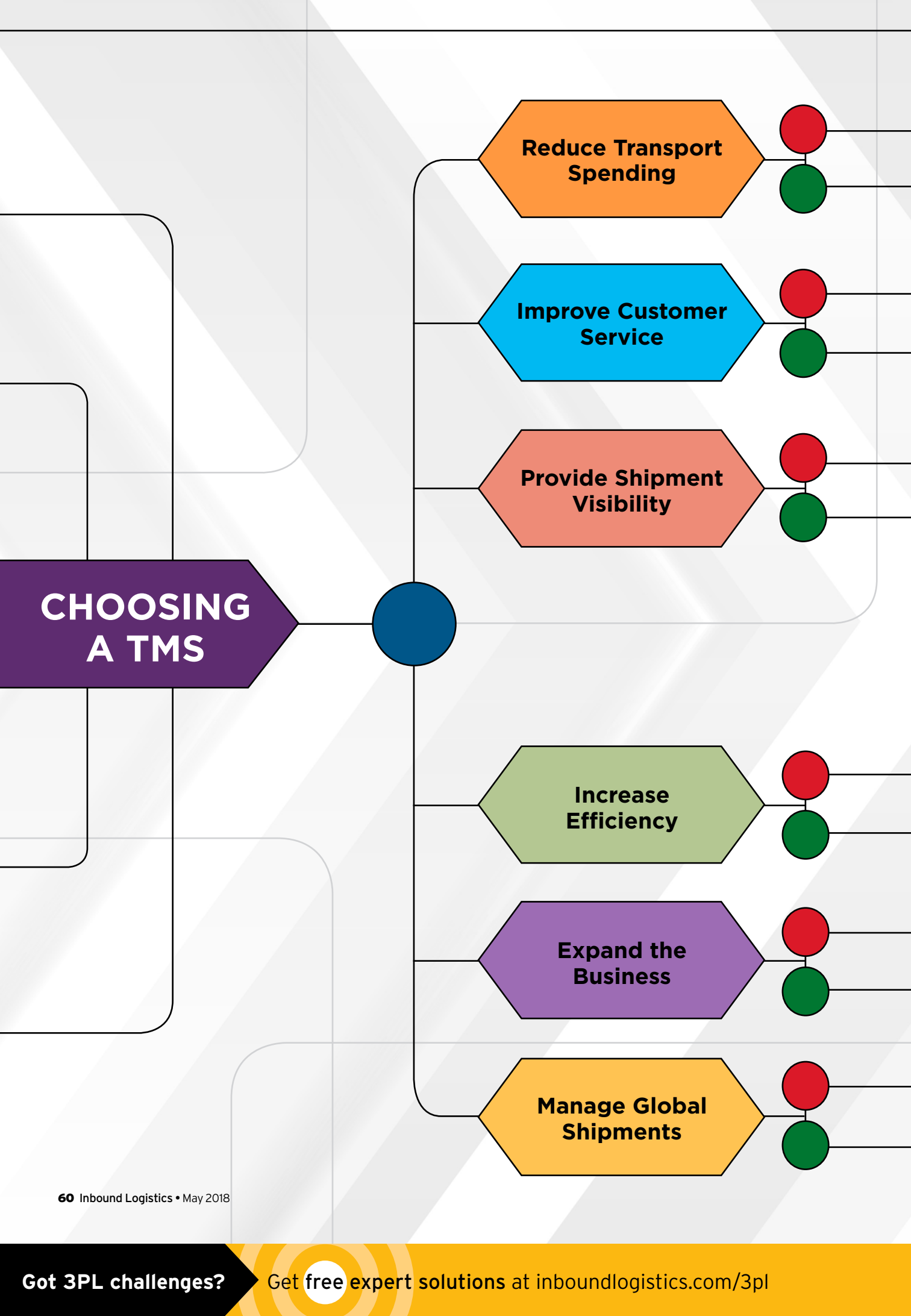
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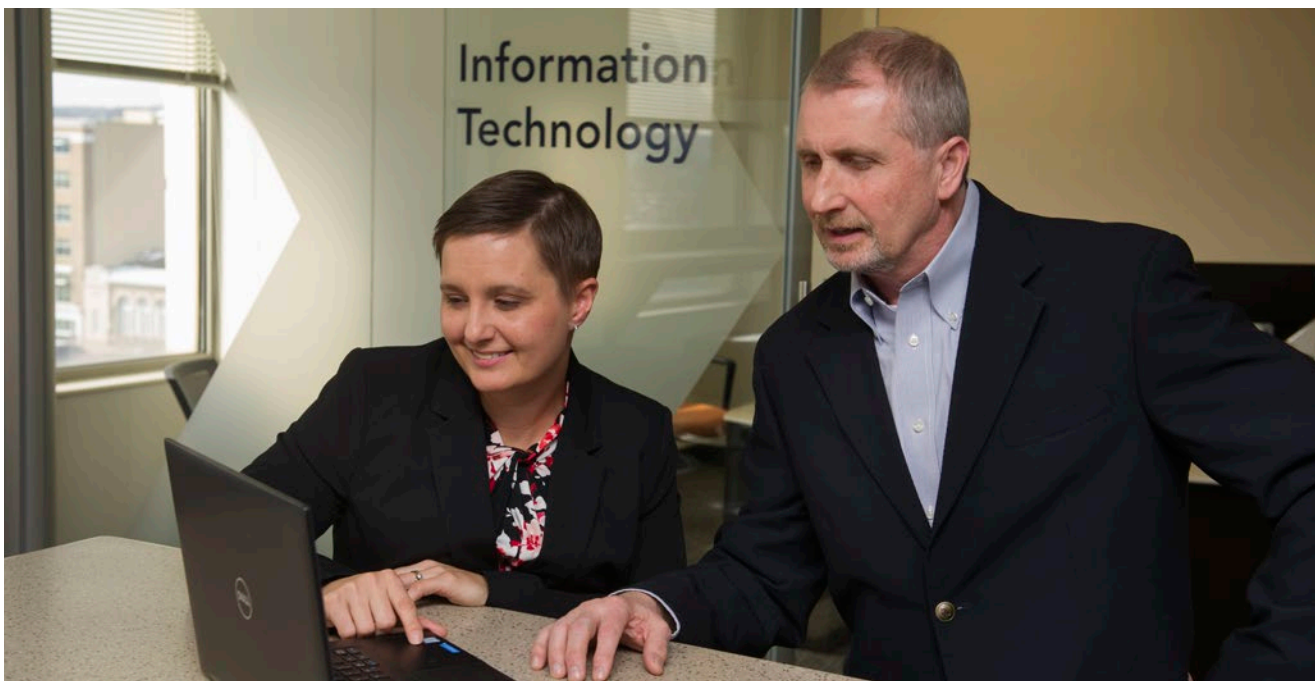
ENDGAME?

With so many choices available, shippers must truly understand what they want a Transportation Management System to accomplish in order to make the right selection.

By Emma James

Transportation management system (TMS) solutions have been in existence for some time, with third-party logistics (3PL) providers and brokers being early adopters. Increasingly, shippers in the retail, food and beverage, electrical, and electronics and distribution verticals are investing in this technology.

In the past, there was an expectation that only large companies with huge freight budgets, big staffs, and significant IT infrastructures could afford and benefit from the use of TMS technology. With the growing trend toward cloud-based computing, costs to invest in a TMS have also been reduced, making this technology more accessible for companies of all sizes. Additionally, cloud-based systems do not require the user to have a major information technology infrastructure.



Bill Grannis (right), vice president of information technology-transportation for ODW Logistics, recommends that shippers determine the challenges they are trying to meet before embarking on a search for a TMS.

Given the increased complexity of today's supply chains, adopting some form of technology, such as a TMS, is critical, whether a shipper purchases a TMS on its own, or works through a 3PL. "I honestly don't know how you can operate in this environment using spreadsheets," says Vincent Chiodo, chief commercial officer of Transplace, a Frisco, Texas-based transportation management services and logistics provider.

► Something for Everyone

The good news for buyers who are ready to kick the tires is that many TMS options are available in the marketplace, including broad-based systems that support multiple transportation modes as well as niche products, ideally suited for a specific market segment, such as freight forwarders. With so many choices, buyers must truly understand what they want the TMS to accomplish in order to make the right purchasing decision.

"Technology cannot fix bad processes," says Chiodo. Buyers must understand their business challenges as well as evaluate the internal resources available to support a TMS. He recommends assembling a cross-functional team to

lead the search, ensuring all stakeholders' expectations are addressed during the procurement process.

Bill Grannis, vice president of information technology-transportation for ODW Logistics, a 3PL based in Columbus, Ohio, shares this view. "The question buyers should ask is, what problem are we are trying to solve?" he says. "Is the goal to reduce transportation spending, increase efficiency, centralize transportation operations, or expand the business with new customers or partners?"

For Technicolor, a worldwide technology company serving the media and entertainment sector, the goal was to select a TMS that could become a standard platform for work across customers. The company uses MercuryGate TMS to support standard work processes across business units, according to Doug Suddarth, Technicolor's global logistics director of supply chain.

Buyers should consider scope and long-term strategy, which often play a role in a company's decision to adopt a TMS. Some shippers also consider geographic reach and the ability to manage across borders.

In addition to agility and ease of start-up, Technicolor was looking for a TMS

that offered the ability to add customers needing export/import as well as domestic transportation, adds Elaine Singleton, global logistics vice president.

Regardless of the operation's size or the reason for purchasing a TMS, one of the first steps in the process is differentiating between the must haves and the nice to haves.

Some common must haves for all businesses using a TMS are:

1. End-to-end Execution

A good way to evaluate a TMS is to look at the system's ability to execute end to end—from order to cash. "The technology should be able to select the right carrier, follow through on all orders, track and trace orders, and offer the ability for consolidation and route guide compliance," Chiodo says. "Finally, it should facilitate payment to carriers."

2. Connectivity

In many companies, the transportation department is part of a broader supply chain, with dependencies and relationships with manufacturing, distribution, sales, and customer service. To gain the greatest cost savings and efficiency from a TMS, users often



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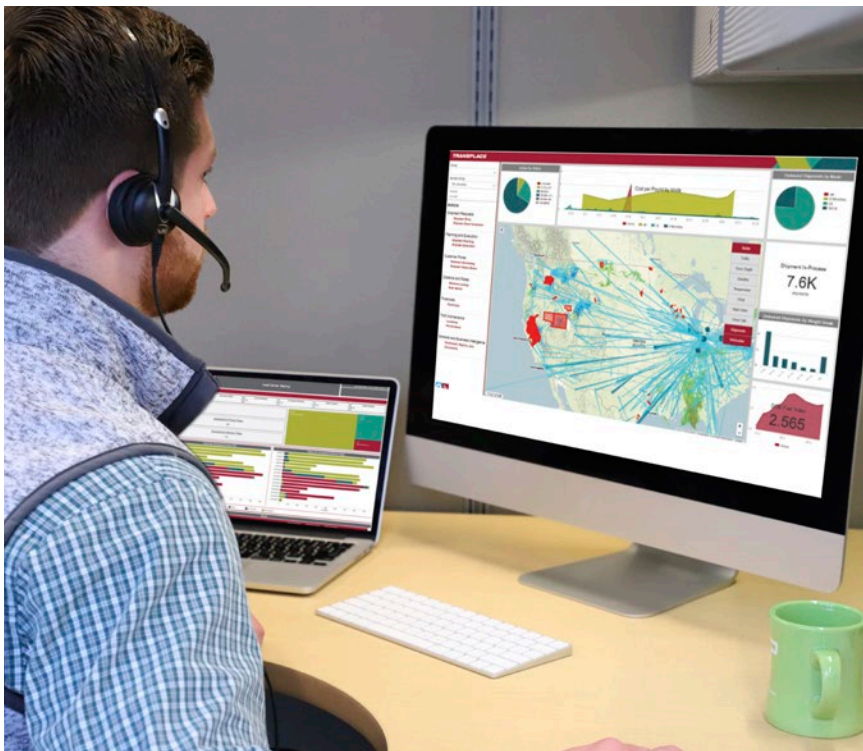
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Transplace offers its Transportation Management System either as a Software-as-a-Service product or as part of a managed transportation solution.

integrate this technology with other systems the company uses such as SAP, an Enterprise Resource Planning system, or a Warehouse Management System.

TMS connectivity enables departments and divisions to share information, and companies also can use a TMS to connect divisions. For example, companies looking to centralize the transportation function can benefit from a TMS. Not only does the technology support the establishment

of a centralized function, but it also can help managers identify areas of non-compliance as opportunities to achieve even greater efficiency and cost savings.

If a company is planning to use its TMS to select carriers and execute shipping orders, the system must be able to connect seamlessly with up to tens of thousands of carriers. This connectivity can help the user determine which carriers best meet their needs, from service parameters to cost.

Shippers can use a TMS to establish a carrier scorecard, using the shipper or 3PL's own data to measure service levels, onboarding, and rating. However, these benefits can only be realized by a TMS that can interface with large carriers, including parcel providers.

As e-commerce continues to expand, many companies that were once B2B providers are now being asked to also interact directly with customers. "That's why you need to know if your TMS has the ability to talk to the outside world," Grannis says. APIs and mobile applications are becoming the norm, not the exception, in certain aspects of the supply chain, he adds.

3. Ease of Use

The industry has come a long way from DOS-based technology to today's cloud-based market. Buyer expectations have also changed. Customers want the user interface to be efficient, effective, and intuitive. Today, supply chain professionals need business applications that are easy to use and don't require an advanced knowledge of IT systems in order to execute a transaction.

This ease of use can also translate into speed—a vital factor for a broker looking to access capacity quickly or risk losing a shipment to a competitor. Many TMS solutions are factoring this market dynamic into their user interfaces, designing business devices to be as easy to use as the devices we use in daily life—for everything from ordering a pizza to making a bank deposit.

Winning the Endgame

Before you go shopping for a transportation management solution, it's helpful to compile a list of the features and functionality you require. Here are some common capabilities to look for.

- End-to-end execution
- Connectivity
- Ease of use
- Security and support
- Carrier contract/bid management
- Freight settlement capabilities
- Risk management capabilities
- Item visibility
- Global logistics functionality
- Ability to provide business intelligence
- Parcel shipping support
- Ability to benchmark data
- Integrated freight management services
- Fleet capabilities
- Equipment maintenance schedules
- Access to multiple public and private bid boards to assess capacity
- Multi-modal capabilities

4. Security and support

With cyber theft now almost a household word, companies must understand how secure the technology is before selecting business applications. This task requires an open discussion with software vendors about their security processes, as well as a thorough examination of those in place within the user's supply chain.

5. Good customer support network

TMS users want to ensure that the system will stay in operation and that the provider has the bandwidth and infrastructure to handle high volumes of data. Negotiate uptime as part of the purchase.

► Nice to Haves

Many value-added features may be useful for certain buyers, depending on the unique aspects of their respective businesses. For example, companies that operate their own private fleets while also using common carriers often require a TMS solution with fleet capabilities.

Further, if a company needs fleet capabilities primarily to manage equipment maintenance schedules, it may choose a system that focuses on this aspect of fleet management. However, to optimize its use of a private fleet or determine when a shipment should move on company equipment, a different set of vendors may provide the better TMS solution.

Other examples of capabilities that may be nice, but not critical for a company's business include a procurement

tool to manage carrier bids, access to multiple public and private bid boards to assess capacity, or multi-modal capabilities.

studies, and working to understand the depth of the provider's capabilities and infrastructure.

Chiodo recommends asking for a demo based on the buyer's data, in addition to any general demos that the provider may offer. With regard to references, "I always request five customer references when viewing products," he recommends.

Finally, some shippers choose to access a TMS through their 3PL partner. Sustainable food packaging company Solut!, for example, outsourced transportation management to ODW.

"ODW's TMS has enabled optimization to save us significant money that would not be available in a direct-LTL environment," says Scott Rechel, president of Solut! "The business intelligence that we've gained from the reporting has helped us transform the way we view the supply chain."

For shippers planning to purchase a TMS on their own, there has never been a better time. The TMS sector has matured, the types of systems have greatly expanded, and across the board, systems seem to be improving.

When considering your endgame, the best way to select the right TMS is to approach the

search as an in-depth endeavor with a dedicated purchasing team, a clear vision of internal business processes, and specific goals the technology needs to achieve. ■

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Throughout the review and purchase process, it is necessary to be an informed buyer and do thorough research, including asking for demonstrations and customer case

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			LICENSED TO USER (INSTALLED LOCALLY)	HOSTED ON VENDOR WEBSITE	CLOUD BASED	
360data	360data.com	360data TMS	●	●		Integrates with ERP systems quickly and easily or operates standalone. Full functionality without large up-front costs.
3Gtms	3gtms.com	3G-TM		●		Lets users manage the full transportation lifecycle, including order management, routing, rating, optimization, tendering, and freight bill and audit.
Acuitive Solutions	accuitivesolutions.com	Global Freight Management		●		A suite of multi-modal TMS portals provides the ability to control decentralized decision-making, improve data accuracy, and create accountability and visibility.
Agistix	agistix.com	Agistix			●	Global supply chain visibility and execution platform to monitor, manage and measure inbound, outbound and third-party shipment activity across all carriers and modes.
Amber Road	amberroad.com	Transportation Management	●		●	Easily evaluate different options on international moves; calculate accurate total landed cost; perform freight audit; identify discrepancies; perform performance management analytics and reports.
AndSoft	andsoft.com	e-TMS	●	●	●	Software and consultancy services for transportation and logistics. e-TMS is 100-percent web based and comes with many modules.
AR Traffic	artraffic.com	CalcRate	●	●	●	A freight rating engine at its core, CalcRate lowers freight costs through optimized carrier selection, shipment consolidation, predictive and post-hoc analytics, and freight audit and payment.
Blinco/3rdwave	3rdwave.co	3rdwave			●	Global, multi-modal TMS manages and audits freight contracts for price, terms, and commitments, supports route optimization, ensures SOLAS compliance, integrates with operations and trade compliance.
BlueGrace	mybluegrace.com	BlueShip			●	Entirely cloud-based with full scalability and user-friendly interface. This advanced platform can integrate with many ERP, WMS, EAM, and ODBC-based systems.
Blujay Solutions	blujaysolutions.com	Transportation Management	●		●	Enables process automation and collaboration among all trading partners, with visibility and actionable intelligence for all freight moves across all transportation modes.

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CargoSmart	cargosmart.com	CargoSmart Transportation Management		●	●	Provides shipment management solutions that benchmark ocean carrier sailing schedules, performance, and contracts. Leverages big data and IoT for greater visibility and live exception management.
Carrier Logistics	carrierlogistics.com	FACTS Transportation Management	●	●	●	Provides integrated freight management solutions that help improve profitability.
CDM Software	cargointelligence.com	CDM Cargo Intelligence			●	Intelligent tracking solution that utilizes data capture mechanisms from all tracking sources, including GPS, RTLS, IoT, RFID, barcode, and e-commerce EDI/XML in one unified portal.
Cerasis	cerasis.com	Cerasis Rater			●	Multi-site supported enterprise TMS for over-the-road transportation supporting LTL, FT, parcel, intermodal, and last mile. Features reverse logistics, e-commerce, and vendor modules, as well as invoice auditing and consolidation.
Cheetah Software	cheetah.com	Cheetah LOOP Platform		●	●	Plans, dynamically manages, adapts, and optimizes fleets and drivers, resulting in companies using fewer trucks, driving fewer miles, and making more on-time deliveries.
ClearTrack	cleartrack.com	Load Tender x-Change		●	●	Allows organizations with one-to-many locations to review price and terms of service, and tender loads for shipment from a private carrier network.
Cloud Logistics	gocloudlogistics.com	Cloud Logistics TMS			●	Combines cloud, mobile, and social technologies for complete global TMS capabilities in a fraction of the time.
Command Alkon	commandalkon.com	TrackIt	●			GPS truck tracking, telematics and fleet and workforce management for the construction material transport industry. Provides full visibility into fleet, reporting, alerts, mapping, and integration.
CT Logistics	ctlogistics.com	FreitRater	●	●	●	Provides global rate quotes from multiple carriers in all modes; least-cost analysis; automated shipment execution; real-time status information; reporting, searching, and data mining.
CTSI-Global	ctsi-global.com	TMS		●	●	Empowers U.S. and global shippers and 3PLs to plan and execute transportation and fully integrate with CTSI-Global's freight audit and payment, BI, and managed services.

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Descartes	descartes.com	Descartes Transportation Management	●		●	Modular solution with standard and advanced functionality for transportation operations of any size. Leverages the Descartes Global Logistics Network to connect carriers and trading partners.
DHL Supply Chain	logistics.dhl.com	Transportation Management System	●		●	Provides order consolidation, optimization, and real-time tracking through direct carrier and fleet integration. Reduces transportation costs, improves performance, and increases customer satisfaction.
Echo Global	echo.com	Echo TMS	●	●	●	Simplifies transportation lifecycle. Automates order management and consolidation, mode/route optimization, shipment tender and tracking, exception management, and invoice audit/settlement.
Efreightsolutions	efreightsolutions.com	EFS TMS			●	Easy-to-use solution that connects shippers and carriers through automation.
Elemica	elemica.com	Logistics Management Solutions			●	Connects to LSP providing end-to-end supply chain visibility. Provides transport execution, optimization, slot booking, carrier rate sourcing, and freight invoice audit and management.
Eyefreight	eyefreight.com	Eyefreight SaaS TMS	●		●	Provides a single platform for central coordination and detailed data visibility over complex transportation operations to reduce costs, increase service levels, and ensure sustainability.
Fortigo	fortigo.com	TMS Software		●	●	Automates, optimizes, and audits logistics processes across the supply chain. Provides one system of record for logistics across multiple sites; interfaces with supply chain solutions.
Freightgate	freightgate.com	Freightgate Logistics Cloud		●	●	Highly customizable cloud solution managing all transport modes, dynamic 5-leg rating and routing, end-to-end visibility, procurement, invoice validation, what-if scenario analysis, PO and packing lists.
Freightos	freightos.com	Freightos			●	Enables advanced management of ocean, air, and trucking rates, instant international pricing/routing generation, and live comparison and booking from industry freight rates.
Freightview	freightview.com	Freight Management for SMBs		●	●	Helps small and mid-sized businesses streamline quoting, booking, tracking, and reporting processes for LTL and spot quote shipments. Supports multiple users and API access.

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			LICENSED TO USER (INSTALLED LOCALLY)	HOSTED ON VENDOR WEBSITE	CLOUD BASED	
Gelnius	gelnius.com	TMS			●	Offers quick set-up with pre-defined business logic with multi-modal, multi-regional, multi-currency, and multi-language capabilities. Perfect for mid-sized companies with an international supply chain.
GTG Technology Group	gtgtechnologygroup.com	Intermodal Management System and Extensions			●	Manages global transportation management systems for intermodal, brokerage, and drayage transportation companies of all sizes. All-inclusive software including EDI, document imaging, and integrated accounting.
Haven	haveninc.com	Haven TMS			●	Singular shipping: one full-featured platform from booking and tracking to data analysis and payment that allows global shipping teams to work smarter and reduce costs.
HighJump	highjump.com	HighJump TMS	●	●	●	A comprehensive solution for managing every part of a growing trucking operation and a full complement of features for carriers and brokers.
Highway905	highway905.com	Highway905 TMS		●	●	Simplifies carrier selections with smart insights. Reduces overall costs with optimized load scheduling and accurate freight billing. Enhances efficiency with multi-modal carrier integration and signed POD capture.
InMotion Global	thefreeTMS.com	AscendTMS	●	●	●	100% free for the basic system, no annual license cost, no downloads or installations. Mobile certified. Provides full enterprise-level TMS features to manage and operate any logistics operation.
Intellitrans	intellitrans.com	GVP		●	●	Provides complete operational, visibility, and analytical capability, and integrates with TransCore's fixed and handheld readers.
J.B. Hunt Transport	jbhunt.com	J.B. Hunt 360		●	●	Automates and optimizes multi-mode shipments. Features include real-time rate quotes, routing guide, automated carrier selection, automated tendering, mode/route optimization, load consolidation, and freight payment.
JDA Software	jda.com	Transportation Management	●	●	●	Helps infuse value and visibility into transportation and logistics networks by facilitating an end-to-end intercontinental planning process to manage transportation lanes for intercontinental moves.
Kuebix	kuebix.com	Kuebix TMS			●	Modular platform that scales to meet any sized company's needs. Encompasses all transportation modes, integrates premier applications, delivers analytics, and provides a comprehensive supply chain solution.

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Logility	logility.com	Logility Voyager Solutions	●		●	Automates multi-modal shipment planning, execution, and freight accounting. Supports automated, unattended operation by monitoring activities with real-time alerts. Analyzes productivity using KPIs to deliver reports.
Logistix Solutions	logistixsolutions.com	Logix	●			Transportation optimization and distribution network modeling/design. Routing and scheduling, private fleet, LTL and truckload shipment optimization for small and mid-sized shippers.
Logistyx Technologies	logistyx.com	Logistyx Transportation Management Execution	●		●	Enables companies to manage all carriers on one platform and ship more orders, faster, for the lowest possible cost, worldwide.
Manhattan Associates	manh.com	Transportation Management	●	●	●	Holistic suite of unified logistics software that simplifies, optimizes, and reduces costs for managing complex transportation networks.
MatchBack Systems	matchbacksystems.com	SaaS for Global Transportation			●	Provides configurable SaaS solutions that use proprietary algorithms and predictive analytics to identify, plan, and automate optimal matchbacks (street turns) for inland container moves.
MercuryGate International	mercurygate.com	TMS	●	●	●	Manages all stages of the transportation lifecycle—planning, selling, execution, and settlement. Shippers, 3PLs, brokers, freight forwarders, and carriers use the technology.
Navigate	navigate.com	Navigate			●	A cloud-based software platform for supply chain, logistics, customs, transportation, and vendor management. Provides API and full customer integrations and customization.
Next Generation Logistics	nextgeneration.com	FreightMaster TMS and Dynamics TMS	●	●	●	Enables shippers to better plan and execute the daily logistics needs of rate shopping, dispatching, tracking, and settlement.
Nulogx	nulogx.com	TMS & Optimizer	●	●	●	A hosted solution that supports all the activities necessary to manage and execute the full lifecycle of the transportation process.
Odyssey Logistics & Technology	gowithwin.com	WIN (Web Integrated Network)			●	No-cost, no-fee, browser-based technology lets shippers transact with existing carriers and brokers plus access new ones, while simplifying processes, increasing visibility, and offering savings.

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Omnitracs	omnitracs.com	Transportation Management System			●	Automates operations, provides robust data management and reporting, improves customer service, integrates flexibly with existing technology platforms, provides trip management and real-time event notifications.
One Network	onenetwork.com	TMS			●	Automated decision-making technology solves upstream and downstream issues that directly affect transportation and expand the TMS footprint.
Oracle	oracle.com/scm	Transportation Management Cloud			●	Manages all transportation activity throughout global supply chains. Supports shippers and LSPs. Applicable for basic transportation needs and/or highly complex logistics requirements.
Paragon Software	paragontruckrouting.com	Paragon Routing & Scheduling Systems	●			Used for operational and strategic route planning, resource management, business modeling, and to optimize home delivery services. Integrates with 30 telematics systems.
Pierbridge	pierbridge.com	Transtream Parcel TMS	●		●	Flexible, adaptable, scalable parcel shipping platform that provides transportation visibility, omni-channel shipping, technology integration, and analytics to lower costs, increase delivery choices, and improve processes.
Precision Software	precisionsoftware.com	Precision Transportation Execution	●	●	●	Provides centralized control and visibility throughout the shipment execution process. From one system, users can compare carrier rates and routes, produce and print labels and manifests, and manage service levels.
Princeton TMX	princetonmx.com	Transportation Management Software		●	●	Provides tools to improve efficiency, freight spend, load planning, execution and settlement, as well as optimize carrier selection.
ProShip	proshipinc.com	ProShip	●		●	A fully integrated, global solution handling shipping automation, advanced rating, tracking, and business rule processing to reduce cost per shipment at increased scale of performance.
Railinc	railinc.com	RailSight Supply Chain Visibility Solutions		●	●	Provides critical visibility, ETA, and other near real-time rail and intermodal shipment data for shippers, rail equipment owners, 3PLs, and transportation management software providers.
Ramco Systems	ramco.com/erp-suite/logistics-software	Logistics ERP	●		●	Designed to work across a multi-modal transport network and manage all key processes covering shipment order management, planning, execution, documentation, and billing.

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			LICENSED TO USER (INSTALLED LOCALLY)	HOSTED ON VENDOR WEBSITE	CLOUD BASED	
RateLinx	ratelinx.com	ShipLinx	●	●	●	Supports all modes and is small parcel compliant for all providers including UPS, FedEx, USPS, OnTrac, Purolator, Loomis, Canpar, Canada Post, and more.
Revenova	revenova.com	RevenovaTMS			●	The only multi-modal TMS built entirely on the Salesforce platform. Customer, carrier, and accounting management all in one application across all modes.
REZ-1	rez1.com	Dispatch Manager			●	Provides real-time shipment visibility by connecting logistics companies to their global trading partner network.
SaaS Transportation	saastransportation.com	Transportation Management Software		●		Customized TMS solutions using API technology and traditional contract management; specializing in LTL rating.
SAP	sap.com	SAP Integrated Business Planning		●	●	Fulfill demand with real-time supply chain. Powered by in-memory computing technology within SAP HANA, this cloud-based solution combines capabilities for sales, supply, and inventory optimization.
ShipHawk	shiphawk.com	Smart Shipping Software			●	Integrated fulfillment platform leverages product, order, carrier, service, customer data, and more to optimize and automate packing and shipping decisions.
ShippersEdge	shippersedgetms.com	Transportation Management System			●	An affordable and highly capable TMS for small to mid-sized businesses.
SwanLeap	swanleap.com	SwanLeap TMS			●	Advanced and powerful management and analytical tool that covers the full range of shipping modes. Provides full control and customization of easy-to-use, efficient software.
TECSYS	tecsys.com	TECSYS	●	●	●	End-to-end event tracking and delivery management system. Provides security, visibility, and efficiency throughout the delivery network—from the warehouse dock to customers.
TMC, a division of C.H. Robinson	mytmc.com	Managed TMS			●	Single global technology plus consulting. Features mode/route optimization, shipment tender, freight payment, yard and dock management, appointment scheduling, business intelligence, and language/currency capabilities.

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VENDOR	WEBSITE	PRODUCT	PLATFORM			PRODUCT DESCRIPTION
			LICENSED TO USER (INSTALLED LOCALLY)	HOSTED ON VENDOR WEBSITE	CLOUD BASED	
TMW Systems	tmwsystems.com	TMS Solutions	●	●	●	End-to-end transportation solutions for 3PLs, fleets, and diversified operations. Full order-to-cash workflow, asset and/or carrier management, multi-mode rating and planning, web portals, EDI, customer visibility.
Trans-i Technologies	trans-i.com	TransMobile	●	●	●	Mobile/web solution for last-mile tracking of transport fleets, with end-to-end visibility, digital POD, status updates, events notification, and customer portal. Supports FCL/LCL cargo.
Translogistics	translogisticsinc.com	ViewPoint	●	●	●	Ensures accurate and timely updates of all shipments, records important documentation, provides quick rating capabilities, and yields powerful analyses to inform strategic decisions.
Transplace	transplace.com	Transplace TMS			●	TMS Control Tower with actionable business intelligence, comprehensive routing, shipping optimization, cost-to-service metrics, predictive analytics, automated appointment scheduling, and proactive shipment visibility.
Transporeon Group Americas	transporeon.com	Transporeon and Ticontract			●	Digitally connects shippers and carriers to achieve smart, cost-effective movement of goods.
Transportation Insight	transportationinsight.com	Enterprise Logistics Platform			●	Blended proprietary and commercial technology platform operating within one enterprise logistics ecosystem offering multi-modal optimization, transportation management applications, WMS, FBAP, and BI.
TransportGistics	transportgistics.com	TGI:TMS	●	●		Features global multi-modal shipment bidding, rating, routing, planning, vendor compliance, execution, visibility, tariff management, freight audit and payment, analysis, business intelligence, and data mining.
Transwide North America	transwide.com	TMS and Dock Scheduling			●	Cuts down on transportation management cost while streamlining and improving communication. Supports multi-languages.
U Route	uroute.net	uRoute TMS			●	Designed for shippers wanting to manage their own logistics. Procurement, visibility, bill audit, dynamic reports, multi-facility scalability, and carrier driver management functions.
UltraShipTMS	ultrashiptms.com	UltraShipTMS			●	Modular single-source solution for transportation and private fleet management, optimization, scheduling, and settlement for high-volume shippers in food production, packaging, manufacturing, retail, and other industries.

PALLETS: BACKBONE OF THE WAREHOUSE

Wood or plastic? Lease or purchase?
Whatever your operations need, there's a
pallet provider ready to supply it.



Think of pallets like the tires on your car. Pallets are where the rubber meets the road, the point of contact between shipments and the various transportation modes in the global supply chain.

Pallets are so common they're practically invisible, yet without them, global commerce would run as well as a car without tires.

Pallets are the primary interface of a unit load. They protect the product, absorb the stresses, hold the weight, encounter fork truck impacts, and safeguard goods traveling through the supply chain. When you consider all they are expected to do, you will conclude they have a tremendous amount of influence on the outcome of a shipment.

Pallets are the first line of defense for ensuring products reach their

destination in the same condition as when they left the shipper. Higher-quality pallets allow a higher volume of products per shipment, reduce the amount of product lost to damages or contamination, prevent worker injury from overloaded or unbalanced shipments, and reduce expenses such as fuel costs.

"Too many shippers focus on the pallet price rather than developing a comprehensive unit load strategy based on the requirements of their specific needs. The late Rodney Dangerfield might have said, 'Pallets, they get no respect,'" says Gary Sharon, vice

president of Vienna, Ohio-based pallet provider Litco International, which offers pallet leasing, management, removal, and recycling services.

Rather than choosing a pallet based solely on the lowest price, shippers should select a pallet that meets the need for high stiffness, proper strength and size, durability, cleanliness, low weight, and low moisture content.

"When you consider the importance of the pallet to protect the product, it seems odd to me that many shippers purchase pallets based solely on the lowest price," he says. "The lowest-cost pallet's strength and functionality may not match their specific product protection needs."

More than 1.8 billion pallets are in service in the United States each day, 93 percent of them made from wood, according to the National Wood Pallet & Container Association. In Europe,

A Single Sourcing Option for Pallets

Managing pallet systems effectively can improve supply chain efficiency and economy. Glenn Meeks, director of pallet operations at South Plainfield, New Jersey-based Bettaway Transportation Logistics and Pallet Systems, discusses the critical role pallets play.

IL: WHAT ROLE DO PALLETS PLAY IN TODAY'S SUPPLY CHAIN?

Our industry motto is, "Pallets Move the World." This remains true today and in the foreseeable future. Pallets are a highly configurable platform that vastly improves efficiency in the supply chain. Also, in today's supply chain, technologies available within and around the pallet allow track and trace, chain of custody, and environment recording.

IL: HOW DOES THE PALLET MANAGEMENT SERVICE WORK? WHAT ADVANTAGES DOES IT OFFER SHIPPERS?

Pallet management as a program works best because it extends shipper capabilities by improving pallet quality, service, and cost re-capture within the supply chain. Quality assurance programs implemented in conjunction with user goals improve quality. Use of a widely available network of pallet depots that can service particular regions of the country improves service, and costs are re-captured through novel repair and return programs that positively impact the cost per pallet vs. the cost per pallet trip.



IL: CAN PALLETS BE CUSTOMIZED FOR SPECIFIC APPLICATIONS?

Yes. Pallets are often made-to-order based on the item or unit load being transported. Also, they can incorporate design elements that are specific to the type of transportation and supply chain they will be moving through (ocean, rail, truck, air). The industry uses specialized software to design and create pallet specifications to meet the needs of pallet users.

IL: WHAT DO YOU HEAR FROM CUSTOMERS ABOUT WHY THEY CHOOSE BETTAWAY OVER OTHER OPTIONS?

Our ability to service customers nationally is a strong value add in our portfolio. Additionally, we can create audit programs and implement them on the customer's behalf. We provide a single sourcing option for companies with multiple facilities spread throughout the United States and Canada.

Reduce Your Total Cost of Business



Driving Automation Efficiency

Great news for your bottom line.

There are more than 40 areas of savings with iGPS plastic pallets – the most comprehensive pallet solution for driving down your total cost of business. More lightweight, hygienic, sustainable and durable than wood alternatives, they offer remarkable efficiency and uniformity, and reduce transport costs, product damage and equipment downtime. That's why the unique iGPS Plastic Pallet Pooling System provides cutting edge, global supply chain solutions for some of the leading companies and manufacturers in the world.



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some three billion wood pallets are in circulation.

Pallets are ubiquitous in the supply chain sector, so any changes in the way they work may ripple through the entire shipping process.

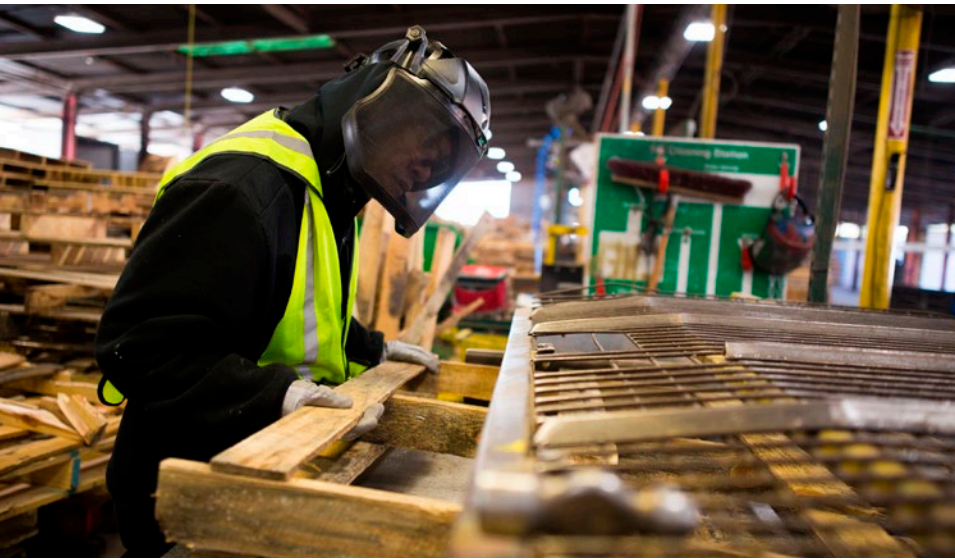
Since pallets have been the backbone of the logistics sector for generations, what possibly could be new? Quite a lot, it turns out.

PALLETS AS A SERVICE

“X as a service” has been a big trend—from Software as a Service to ride-sharing apps such as Uber that offer transportation on demand. Companies such as 48forty Solutions, ORBIS Corporation, iGPS, and Bettaway Transportation Logistics and Pallet Systems, offer pallet management services that can be considered “pallets as a service.”

Over the years, shippers have transitioned from basic pallet procurement and retrieval to looking for resources to manage pallets as an integral part of the supply chain. While leasing and pool programs are still popular options, and purchasing pallets outright and managing them in-house remains a common practice, a growing number of shippers outsource some or all of their pallet operations to a third-party provider.

“Fifteen years ago, what else was



48forty Solutions, a pallet management company, offers an end-to-end solution to shippers, including new, custom pallets, pallet supply and retrieval, on-site services, and packaging materials.

Pallets 101

A quick primer to get you in the loop about pallets.

MATERIALS

Lumber: The majority of pallets are made of lumber because it’s strong and can be repaired.

Plastic: This durable option, often used for food and pharmaceutical products, is most cost effective in closed-loop shipping situations.

Metal: Steel is often used for extremely heavy freight. Both steel and aluminum are often used when there’s concern about product contamination or fire.

TERMS

Stringer pallet: This type has a strip of wood—a “stringer”—between the unit’s top and bottom decks. The decks are attached to the stringers. Notches are cut into the stringers for forklift entry.

Block pallet: The top and deck bottom boards are attached to blocks of wood—short supporting legs—instead of stringers.

2-way and 4-way: With a 2-way pallet, a forklift can only enter the pallet from two directions. In a stringer pallet without notches, the forklift can only enter from the two sides without stringers. Block pallets are 4-way, allowing forklift entry from all four sides.

SIZES

While custom sizes are an option, pallets are typically offered in two sizes:

GMA: The standard established by the Grocery Manufacturers Association (GMA) has a 48 inches by 40 inches surface.

Half pallet: Suitable for smaller retail spaces, half pallets are 48 inches by 20 inches on the surface.



Meet a plastic pallet more durable than wood that handles repeated use under even the harshest conditions. In fact, ORBIS® reusable pallets can complete up to 200 cycles without failure, compared with an average of just 11 for wood pallets*. Make the choice today to refine your pallet with ORBIS.

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*In FasTrack testing completed at Virginia Tech, using the 40 x 48 RackoCell® pallet.

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there to consider besides specs and cost?" says Kyle Otting, CEO of Atlanta-based 48forty Solutions, a recycled pallet management company. "But as supply chains evolved into ever more complex networks, the efficient management of pallet programs has become impactful to the bottom line and at the same time, more complicated than ever."

A crucial step in developing a pallet management system is an audit of the shipper's operations. Simply replicating types and number of pallets that purchasing records say are being used could lead to confusion.

"We need to understand who our customers' customers are, what they're shipping and where, and how their operation functions," says Hillary Femal, vice president of sales and marketing for 48forty. "What's happening at each facility, how pallets are used, and the spec of the pallets being used are often vastly different than what corporate procurement has on record."

As part of 48forty's "as a service" mantra, shippers can track their pallet management online. With the *PalTrax* app, 48forty customers can place order or retrieval requests, run reports, and

view invoices and bills of lading for multiple locations using their desktop computer or mobile device 24/7.

"This transparency and visibility is a huge advantage for our customers; they have all the information they need anytime, anywhere," says Femal.

FINDING THE RIGHT PALLET SOLUTION

"Companies have to do what makes sense for them, and sometimes it comes down to whether the company wants to invest capital upfront for pallets or use a leasing program instead," says Ryan Roessler, plastic pallets product manager for Oconomowoc, Wisconsin-based ORBIS Corporation, which provides reusable plastic pallets, totes, dunnage, and bulk systems.

Some pallet types are not suited for rental or lease pallet pools but are used for one-way and export shipping situations.

For example, Litco's engineered molded wood pallets are designed and priced to use in one-way and export shipping. They are not repairable when damaged; therefore they are not typically used in pallet rental and lease programs.

However, they are rated for limited

reuse and can be reused several times at a very low cost per trip, especially when they are employed in a captive, or closed-loop, system by individual companies that have the ability to retrieve them and want to own their pallets, Sharon says.

"Litco's engineered molded wood pallets reduce the cost of retrieval in closed-loop systems because they are nestable; up to 50 pallets fit in a 7-foot-high stack, reducing the shipping cost of retrieval by more than half when compared to other types of pallets," Sharon says.

A SUITE OF SERVICES

Orlando, Florida-based iGPS plastic pallets have developed a unique niche, being one of the only Grocery Manufacturers Association (GMA)-sized plastic pallets capable of withstanding rental pool service, says iGPS CEO Jeff Liebesman.

Once a retailer has finished using plastic pallets they can be sent directly back to the shipper, as opposed to wooden pallets that may have to return to the pool for repair first.

"That saves at least one transport leg and associated labor, directly reducing total cost of business," Liebesman says.

In the rental pool, iGPS manages pallet delivery, recovery, and upkeep, maintaining compliant quality pallets throughout the cycle.

"It's no longer enough to simply provide pallets; for companies to get the most out of pallets requires a suite of services—process analysis, shipment tracking, regulatory benefits, to name a few," Liebesman says. "Without iGPS's service, our customers would pay for



The durability of iGPS plastic pallets helps manufacturers and retailers reduce product damage costs.



Same service. New name.

CHEP Recycled Pallet Solutions is now 48forty Solutions. Though the name has changed, the reliable, end-to-end solutions remain the same. And we're still North America's largest recycling network. From the biggest retailers and manufacturers to small family businesses, 48forty simplifies pallet management. Every time.

48 FORTY SOLUTIONS

Pallet Management Made Simple™

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unnecessary transport and procurement of pallets between use and recovery as well as incur costs arising from damaged pallets.”

Wood pallets are still king, holding about a 90-percent market share. But other materials, including engineered wood, plastic, steel, and corrugated paper are gaining ground for specialized uses.

Much of the automotive industry has transitioned to plastic or metal options. A similar switch is underway in food processing as plastic units are replacing wood for both inbound and outbound moves.

“Today a lot of inbound ingredients come in on wood pallets,” Roessler says. “So food processors are working upstream to convert to a more sustainable, more hygienic, more consistently sized solution.”

PRECISION PALLET

Consistent pallet size is critical as more automated systems are integrated into warehouses and distribution centers. Wood pallets may vary slightly in dimension, especially those that have been extensively repaired. Plastic, steel, and engineered wood pallets typically maintain the designed dimensions across thousands of units. Sizing is vital in operations that employ automated guided vehicles, storage and retrieval systems, and other technology.

“With laser eyes and motion detection systems it’s critical to be consistent on every pallet,” Roessler says.

The consistent uniformity in size, shape, and weight of iGPS plastic pallets throughout the supply

chain supports automation technology. Additionally, all iGPS pallets have RFID tags.

“The reliability of the iGPS pallet specification makes them a far better fit than wood for companies investing in automation or robotics,” Liebesman says.

KEEPING IT CLEAN

Sanitation is another issue. Food and pharmaceutical companies must be diligent about using pallets free of mold, insects, and other contaminants to maintain sanitation from farm or factory to the dinner table and medicine chest.

Shippers are turning to other types of pallets to improve cleanliness in warehouses and retail stores. One retailer uses several hundred thousand plastic pallets per month to transfer order pick loads in addition to actual shipments, Liebesman says.

Shippers are coming to value other aspects of non-wood pallets such as reducing customers’ need to clean up the accumulations of wood debris and loose nails that are unavoidable with wood pallets, across the floors of both warehouses and retail stores.

“It is difficult to remain competitive, especially in high-risk industries with easily damaged products like food or pharmaceuticals, so customers are seizing on any and all cost-saving measures we offer and employing them wherever they can,” Liebesman says.

For example, a dairy products manufacturer turning products such as yogurt and sour cream is moving from wood pallets to plastic to improve productivity, Roessler

notes. While using wood pallets, the operators would shut down the line once a week to clean up the sawdust and pallet remnants.

“It would take almost a full day of downtime to clean all the equipment,” he says. “Cleanliness is important, but they also gain the benefits of eliminating costly plant downtime.”

READY FOR DISPLAY

Retail-ready floor displays reduce the number of touches necessary to move product from distribution center to the store aisle. To keep pace with the increasing demand for these displays, shippers can select from pallet base options that include Litco’s engineered molded wood, conventional wood, corrugated paper, and plastic.

“Display makers prefer to use Litco’s engineered molded wood pallets as a base because they are easy to assemble and durable enough to be used as both the shipping pallet and the base for the bottom of the display,” Sharon says.

Retailers like them because they are safer around workers and consumers. They do not have bottom boards that create “trip-points” or nails or staples that can cause injuries. Litco’s pallets are also easier to use because the design allows for smoother entry and movability with hand trucks. “They are a neutral color and won’t distract from the focal points on the display graphics,” Sharon says.

CUSTOMIZED USES

Some retail chains are moving to smaller footprint stores, making standard-size pallets a tight squeeze for stocking shelves or merchandising. Plastic pallet suppliers such as ORBIS have developed smaller plastic pallets with wheels that lock in place. Stock on smaller pallets can move in smaller trailers and transition from the DC to the floor without extra handling.

While many standard models meet most packaging needs, pallets can be customized to some extent, including a unique size or shape to fit a specific product. Bespoke designs generally require high volumes to be cost effective. Pallets are offered in a









Litco's engineered molded wood pallets are made of pre- and post-consumer wood waste and resin. They have been certified by the U.S. Department of Agriculture as BioPreferred and certified sustainable by MBDC: Cradle to Cradle® Assessment and Leadership.

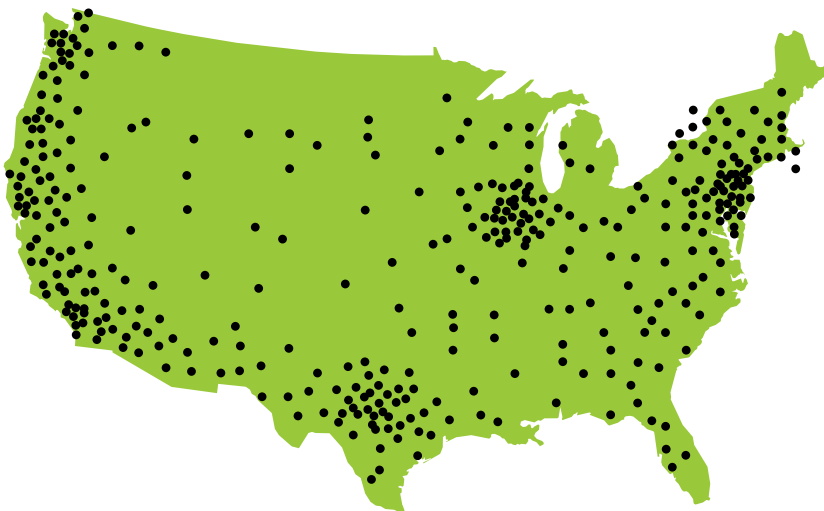
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*Bettaway has developed one of the largest national pallet depot networks with
over 425 pallet yards throughout the US and Canada*



Supply

Centralized software analyzes pallet orders to find more effective supply options to meet customers' needs.



Retrieve

End users directly contact Bettaway service center to coordinate pallet pick-up and transport.



Repair

Service centers sort and repair all salvageable pallets, which are then placed back into inventory.



Reissue

Pallets are reissued from inventory for a fraction of the cost of new purchases, saving waste and money.

Partnering with Logistics

Our sister company is a nationally reputable transportation and logistics provider. As the inbound service provider to many end user facilities, we can utilize our delivering trucks to backhaul pallet returns. These partnered services ease the pallet process for our clients by eliminating multiple vendors and trucks, and lower transportation costs by allowing continuous pallet supply movement. It also gives us a huge logistical edge over the competition.



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ORBIS provides a reusable plastic pallet program, which lets shippers reduce costs, drive sustainability, and optimize their supply chain.



range of sizes to fit many applications. For instance, a retail distribution center might opt for nestable pallets that are light enough to be lifted without equipment.

Some options can help shippers solve specific problems. For instance, plastic pallet makers can add rubber grommets for an improved coefficient of friction to keep products from slipping. A lip on the edge of a pallet can keep totes from sliding off.

Wood pallets can be built for specific customer uses, says Femal.

“Our engineers work in the Pallet Design System to design custom pallets for specific applications, while always looking for ways to reduce costs and meet the customer’s needs,” she says.

EXTRA PROTECTION

Another important pallet characteristic is resistance to vibration. Sensitive products such as electronics, pharmaceuticals, and food and beverages can be damaged in transit from stresses passed through the pallet from the road-way and handling equipment.

Because of their high stiffness ratings, Litco’s engineered wood pallets

transmit less vibration than other types of one-way and export shipping pallets, Sharon says.

Food manufacturers may ask for plastic pallets with metal additives to make them detectable by x-rays.

“X-ray and metal detectable pallets are another layer of protection companies can implement to help detect out-of-place items and contaminants, preventing recalls,” Roessler says.

Shippers should consider warehouse needs when choosing a pallet. Knowing how the pallets will be stored can determine the most appropriate pallet type and load rating. For example, ORBIS offers rackable pallets designed to be stored in racks and stackable pallets with bottom decks that allow for double stacking, Roessler says.

“The rackable pallets have little to no deflection, so they’re safe to handle the loads in a rack,” he says.

THE GREEN EQUATION

Determining the most sustainable solution requires examining the entire lifecycle of the pallet, from the cradle to the grave. The answers matter to those companies examining

the environmental impact of their supply chain.

Plastic pallet makers look at recyclability as a winning factor, while wood pallet manufacturers tout the forests as a renewable resource.

Wood is the only 100-percent renewable, recyclable, and reusable product available, the National Wood Pallet & Container Association says. Virginia Tech research found 95 percent of wooden pallets are being recycled rather than winding up in landfills.

RECYCLING OPTIONS

Each year more than 350 million pallets are recycled, and 87 percent of wood contained in pallets sent for recycling is used again in other pallets.

By comparison, plastic pallets are made from petroleum-based products, which can contribute to a high environmental impact in extraction, refining, and transportation.

One way to consider a sustainable pallet is to look for the one that lasts the longest with the least amount of repair.

While plastic pallets may have a

higher initial cost than wood, testing shows the plastic option is competitive over the entire lifecycle.

ORBIS research found pallets would need repair or replacement after 11 trips on average, Roessler says. A trip counts as an average handling sequence—loaded onto a trailer, pinwheeled, moved with an electric pallet jack, pushed across the floor, loaded onto a rack, loaded onto a gravity flow conveyor rack, and dropped. “The plastic pallet that we tested went more than 200 trips without failure which, depending on how many trips your pallets take, could last 10 years,” he says.

ENGINEERED WOOD

Litco’s engineered molded wood pallets are made of pre- and post-consumer wood waste and resin. They have been certified by the U.S. Department of Agriculture as BioPreferred and certified sustainable by MBDC: Cradle to Cradle® Assessment and Leadership.

During the manufacturing process, the wood fiber is dried to 3-percent

moisture content, mixed with resin, put in a mold, and heated to 350 degrees, which sanitizes the whole pallet. The pallet is dry, so it doesn’t attract moisture-seeking pests such as termites or carpenter ants, Sharon says.

At the end of their useful life, Litco’s engineered molded wood pallets are often ground up for boiler fuel, mulch, compost, and animal bedding.

LIGHTER PALLETS, LOWER FOOTPRINT

Shipping with lighter pallets consumes less fuel and may allow more product on each truck. For instance, iGPS says its plastic pallets weigh 30-percent less than standard 9-block wood pallets.

In fact, iGPS estimates replacing all wood pallets with plastic pallets would remove 9.25 billion pounds of weight from the nation’s supply chain. But they seem up to the task. iGPS has tracked its plastic pallets making more than 100 million trips throughout the grocery supply chain.

Wood pallets are valued for their

repairability, but eventually they are removed from service. Out-of-service units can be re-sold for consumer use or recycled into other products such as mulch. Plastic pallets can be recycled into new pallets or other products.

“If a company has a lot of pallets that have gone through their lifecycle and are now broken, we’ll buy them back, grind up that plastic, and re-inject it into other products,” Roessler says.

MAKING A STRATEGIC CHOICE

Ultimately, investment in pallets must align with the overall supply chain strategy, taking into account the full life-cycle return on investment. Like many choices, cheaper options may be more costly in the long run.

“Purchasing low-quality tires for your car can increase your gas costs, put greater strain on your brakes, and make an accident more likely,” Liebesman says. “Both tires and pallets determine how efficiently and safely you, or your shipments, arrive at your destination.” ■

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Frank McGuigan

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Q: *What is the current state of the freight market?*

A: In addition to the typical seasonal swings, there are a number of external economic factors that have impacted the market. For example, in Q1 of 2018, retail sales growth slowed, but the rise of e-commerce and omni-channel fulfillment has also dramatically impacted the supply chain in recent years and continues to exacerbate ongoing industry challenges. And this trend doesn't appear to be going away anytime soon.

Once consumers were shown what was possible in the world of online retailing and home delivery, their behavior—and expectations—began to change. This shift forced retailers to change how they did business, worked with suppliers, and served their customers.

Now consumers can compare products from multiple manufacturers and/or retailers in order to find the best product at the best price—all from the comfort of their own home—and then have it delivered within days or even hours. This consumer behavior has and will continue to put pressure on the supply chain.

Q: *What can shippers do to combat some of these issues?*

A: As manufacturers and retailers work toward optimizing their supply chains to address capacity constraints and changing customer demands, it's critical for them to make sure they have the proper processes,

technology, and logistics partners to deliver the velocity, visibility, predictability, and control they need.

The market will continue shifting and building supply chains to better support new channels and find new ways to service customers. Supporting a multi-channel delivery model requires an agile supply chain and exceptional planning and execution processes and technology to make it work. It also requires comprehensive connectivity with all business partners—from suppliers to manufacturers and distributors, retailers, transportation companies, and delivery fleets.

It's also important that shippers remain close to their logistics network and optimize their supply chains using actionable data. Proactively managing routing guides by using data and analytics enables better recognition of underperforming tender acceptance in lanes/regions and drives a swift sourcing action to improve performance.

Further, by using historical data to better predict when and where capacity shortages will occur, shippers can then dictate procurement requirements impacting carrier choice, lane depth etc., as well as drive better utilization of the trucks that are already in the network.

All of this can and should be automated with the right TMS to drive operational improvement on a daily basis.

Now is the Time to Take Action to Combat Carrier Capacity Issues

Q: *What are carriers saying about the capacity situation right now?*

A: The strong economy, increased manufacturing output, driver shortage and other industry developments have all combined to put the highest demands on capacity in years. Capacity utilization rates are at 95% and higher, in both the spot and contract markets. Higher demand points seem to be localized within several Eastern and Midwestern regions where it's typical to see higher demand.

Rate increases going into 2018 were inevitable and we see them happening across the board right now. Carriers faced with the reality of the capacity situation are finding it challenging to be able to communicate these rate increases to their customers.

Q: *How can shippers protect their portion of capacity and potentially find additional capacity in a market like this?*

A: It is now more important than ever for shippers to proactively work with their carriers to gain "preferred shipper" status. Start by working more closely with core carriers with the goal of accessing and securing capacity, not necessarily getting the lowest rate. Implement best practices and technologies that enable transparent collaboration with carriers and minimize detention and loading/unloading times.

A good dock scheduling system is an ideal solution since carriers can be set up to pick the time slots that work best for them, allowing them to schedule loads as a backhaul to pare down empty miles. A dock scheduling tool significantly cuts idle and wait times at

shippers' sites, sometimes by 30% or more, and loading and unloading times by 20% or more, and will help you honor time commitments to your carriers and schedule more realistically.

To find additional capacity, strategic, proactive sourcing methods based on technology specifically created for transportation procurement can uncover hidden carrier capacity by connecting shippers to logistics service providers that serve specific lanes, modes, and industries that may call for specialized equipment.

The second half of 2018 shows all signs of remaining a very challenging market environment. We are seeing shippers who are being put under pressure to react rather than acting deliberately to find capacity in this market, and are advising our customers to beat demand by resisting passive sourcing strategies.

Q: *What should companies look for within a TMS solution that will help with capacity challenges?*

A: Shippers should look for a collaborative solution that truly allows shippers, their carriers, and the customers they serve to thrive, even within challenging market situations. Comprehensive, end-to-end systems with modular product offerings can help shippers customize solutions to their needs rather than buying an inflexible, all-inclusive TMS package at a premium price.

Look for a solution from a provider with deep embedded vertical expertise that has experience with the processes and challenges specific to your industry.



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George Mimikos

Vice President of Sales, Hollingsworth
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www.hollingsworthllc.com

Q: *Why are major retailers going all-in on subscription services?*

A: Subscription boxes such as Birchbox, Stitch Fix, Blue Apron, and the Dollar Shave Club have become popular new avenues of retail in recent years, and now major retailers are jumping in on the trend. Apparel brands like Old Navy, Gap, and Nordstrom have launched their own subscription services, and retailers such as Target and Walmart have also created specialized subscriptions for kids clothing and beauty items.

Of course, the largest draw with subscription services is additional revenue. The subscription and/or membership model increases revenue while improving sales forecasting accuracy because the service ensures a steady monthly revenue from subscribers or members. This is particularly true with apparel rental services like Rent the Runway and Le Tote, which charge a monthly fee for the ability to borrow their clothing, in addition to revenue from sales when the customer decides to keep items.

Not only does subscription retail create new opportunities for revenue generation, these services are also a treasure trove of valuable data. Subscribers typically provide important data about inventory, which retailers might not otherwise be able to access or be able to obtain as easily. This insight can help a retailer's buyers more accurately follow consumer trends on the front end, while helping increase the optimization of inventory management when ascertaining which products to purchase more of or discontinue. Data can also be used to create loyalty programs and deeper connections with a broadened knowledge of their customers.

Major retailers also have the benefit of size. Standalone subscription e-tailers like Blue Apron have to deal with the challenge of balancing sales with the steep cost of marketing, which is required in order to retain their membership. In contrast, subscription services only make up a

fraction of a major retailer's business, typically creating far more revenue opportunity than added cost.

Q: *What are the pain points in fulfillment faced by subscription retailers?*

A: Merchandising is the key for success with subscription services, although the vast amount of subscriber data is very helpful for direction. Retailers must also constantly evaluate their assortment of products, new product additions, price points, and customer service to compete in this highly saturated market.

But there are some specific challenges with regard to supply chain management and order fulfillment that subscription retailers must overcome. Amazon has "trained" today's consumers to expect rapid delivery windows, quite often within 2-3 days and certainly no more than 5 days. Fulfillment centers must be strategically located to meet this demand, with highly optimized operations and streamlined processes to minimize time in the supply chain. Picking accuracy is also something to address, since the products included in each individualized subscription box must be picked and packed to an extreme degree of accuracy and speed in order to satisfy the customer's expectations.

Q: *What is the projected future of subscription retail services?*

A: Time will tell if subscription retail is a viably long-term innovation for the retail industry as a whole, or merely the next iteration of online shopping. But it's a retail trend that has certainly not yet reached its peak. New standalone subscription businesses, as well as major retailers, are joining the game every day, and it will be an industry-wide challenge to keep a subscription business' products and customer experiences fresh in an ever more competitive marketplace.

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A YMS for Exploding Business Growth

This specialty online retailer required a best of breed Yard Management and Scheduling system to support its exploding growth.

We all found the C3 Solutions' team extremely knowledgeable, not only about their product, but about the whole business area in which we work.

We could not provide the level of service that our reputation is built on without C3's first rate yard management system.

An extensive survey of the yard management market led to one vendor that had more than 20 years' experience in implementing its Yard Management platform in the retail industry - C3 Solutions. The C3 team worked closely with the operation to devise a solution that was able to deliver value starting on day one.

THE RESULTS

- **Fully Tailored:** Once implemented, the warehouse operations successfully levelled the influx of goods based on specific rules, automated where the drivers should go upon arrival at the site and also had visibility on the incoming loads.
- **Fully Integrated:** C3 developed and implemented a custom translator that met complex and multi-system integration requirements. This approach allowed the project team to greatly reduce IT involvement and project timeline.
- **Efficient Labour Planning:** The system provides a tool through which they can better plan their labor requirements.
- **Yard Tasks Automation:** In addition to scheduling the loads, C3 Yard's mobile shunter app provides clear instructions to yard drivers and tracks the execution of the tasks. Using the business rules and priority levels set up by yard controllers, C3 Yard constantly analyses the pool of work to assign drivers the most optimal tasks.

- **100% Elimination of Emails:** Furthermore, it eliminated 100% of emails from suppliers related to appointment requests due to the external bookings portal.
- **Fully Scalable:** Being a dedicated SaaS software, C3's scheduling and yard management system allowed them to easily turn on new sites across different time zones and countries.

Consumers who purchase goods on e-commerce platforms expect to know the anticipated delivery dates and to be kept informed if changes occur. This requires complete end-to-end supply chain visibility. Creating seamless integration between specialized in-house systems and best of breed applications requires rich web service APIs and a vendor that is capable of working closely with your internal team.



C3 Solutions

info@c3solutions.com

+1 514 315 3139

www.c3solutions.com



Trailer #:
040815162342

Carrier:
No Bull Transport

Check In:
05/01/18

Contents:
Health & beauty aids

Dock:
8675309

Gate IN:
12:34 pm

Gate OUT:
pending

Destination:
New York DC

Notes:
Usually on time

YMS Solutions: Working Yard For the Money

These YMS providers will treat you right.

A yard management system (YMS) can act as the link between your warehouse management system and transportation management system. It manages shipments and their containers from the yard gate to the dock.

A YMS can provide real-time visibility to trailer location and contents, and by doing so can drive efficiencies, reduce detention fees, and improve decision making.

Key components of an efficient YMS include:

- **Yard management:** Directs trailers to a specific location in the yard and tracks their movements to enable efficient retrieval and accountability.
- **Appointment scheduling:** Systemically tracks and organizes inbound and outbound appointments to align labor capacity and minimize congestion.
- **Dock door management:** Directs assets to specific dock doors for unloading and loading.
- **Guard check-in and check-out:** Enables guards to check each trailer in or out for security reasons.

This YMS Guide features some leading providers that can help aid your search for the solution that best meets your challenges.

YMS GUIDE

Ready to implement
a YMS solution?
These leading
providers can help.

VENDOR, URL		PLATFORM			DESCRIPTION	MAIN FEATURES					ADDITIONAL FEATURES				
		LICENSED TO USE (INSTALLED LOCALLY) HOSTED ON VENDOR WEBSITE CLOUD BASED				REAL-TIME VISIBILITY TO YARD ASSETS	YARD DRIVER TASK OPTIMIZATION	DOCK SCHEDULING	GATEHOUSE MANAGEMENT	INTEGRATION WITH EXTERNAL SYSTEMS	DOCK MANAGEMENT	MOBILE APPLICATIONS	EXCEPTION ALERTS	OPERATIONAL REPORTS	TRAILER WORKSHOP MANAGEMENT
4SIGHT Logistics Solution 4sightsolution.com	4SIGHT Yard Management	●	●	●	Provides carrier management, gate management, dock door scheduling, yard truck management, yard visibility, and management reports.	●	●	●	●	●	●	●	●	●	●
Apptricity apptricity.com	Apptricity Yard Management	●	●	●	Includes gate check-in and check-out, trailer movement requests, loaded inventory disclosure, and full integration with warehouse activities for just-in-time operations.	●	●	●	●	●	●	●	●	●	●
C3 Solutions c3solutions.com	C3 Yard			●	Empowers yard managers by providing visibility on yard assets, optimizing the flow of trailers and automating task assignment.	●	●	●	●	●	●	●	●	●	●
Comprehensive Logistics complog.com	Yard Management	●	●	●	Improves asset management, streamlines dock-assignment scheduling, speeds crossdock capabilities, provides greater visibility, and eliminates dock congestion.	●	●	●	●	●	●	●	●	●	●
Cypress Inland (YardView) yardview.com	YardView	●	●	●	Manages every aspect of the yard including gates, docks, yard drivers, loads, carriers, customers, scheduling, and materials movement.	●	●	●	●	●	●	●	●	●	●
Descartes Systems Group descartes.com	Descartes Yard Management	●		●	Yard management and trailer tracking software tracks trailer and content movement across locations; accesses trailer history, driver, and yard activity.	●		●		●	●	●	●	●	●
Exotrac exotrac.com	Yardtrac			●	Configures to fit individual needs—schedule appointments, and manage activities throughout the gate, yard, and dock doors.	●	●	●	●	●	●	●	●	●	●
Generix Group generixgroup.com	Yard Management System			●	Helps ensure on-time delivery, synchronizes yard and warehouse operations, and improves carrier relations through automated appointment scheduling.	●	●	●	●	●	●	●	●	●	●
HighJump highjump.com	HighJump Yard Management	●		●	Provides real-time information, intelligent work direction, and complete visibility of trucks, trailers, drivers, goods, and materials.	●	●	●	●	●	●	●	●	●	
inconso AG inconso.com	inconsoYMS	●		●	Covers complete yard functions from gate entry, ramp management, and parking lot management, to track and trace of assets and goods.	●	●	●	●	●	●	●	●	●	
Kuebix kuebix.com	Kuebix Yard Manager			●	Provides visibility to location and timing of yard assets/labor to optimize control of assets, improving labor and equipment efficiency.	●	●	●	●			●	●	●	
Made4net made4net.us	YardExpert	●	●	●	Manages trailer arrivals and departures to the DC, as well as internal yard movement and assignment to gates.	●	●	●	●	●	●	●	●	●	

YMS GUIDE

Ready to implement
a YMS solution?
These leading
providers can help.

VENDOR, URL		SOLUTION		PLATFORM	DESCRIPTION	MAIN FEATURES					ADDITIONAL FEATURES				
				LICENSED TO USE (INSTALLED LOCALLY) HOSTED ON VENDOR WEBSITE CLOUD BASED		REAL-TIME VISIBILITY TO YARD ASSETS	YARD DRIVER TASK OPTIMIZATION	DOCK SCHEDULING	GATEHOUSE MANAGEMENT	INTEGRATION WITH EXTERNAL SYSTEMS	DOCK MANAGEMENT	MOBILE APPLICATIONS	EXCEPTION ALERTS	OPERATIONAL REPORTS	TRAILER WORKSHOP MANAGEMENT
Manhattan Associates manh.com		Yard Management		●	●	●	●	●	●	●	●	●	●	●	●
Modifi modifi.io		Modifi Trucking			●	●	●	●		●	●	●	●	●	●
One Network onenetwork.com		Yard Management		●	●	●	●	●	●	●	●	●	●	●	●
PINC pinc.com		PINC Yard Management System			●	●	●	●	●	●	●	●	●	●	●
ProAct International proact.net		Yard Management Suite			●	●	●	●	●	●	●	●	●	●	●
Sentier Systems yardcommander.com		Yard Commander			●	●	●		●	●		●	●	●	
TrackX trackx.com		GAME for SCM		●	●	●	●	●	●	●	●	●	●	●	●
Transwide transwide.com		Slot Booking		●	●	●	●	●	●	●	●	●	●	●	●
UltraShipTMS ultrashiptms.com		UltraYMS			●	●	●	●	●	●	●	●	●	●	●
Yard Management Solutions YardManagementSolutions.com		Yard Management Solutions		●	●	●	●	●	●	●	●	●	●	●	●
Zebra Technologies zebra.com		Visible Value Chain		●	●	●	●	●	●	●	●	●	●	●	●

Transportation
Infrastructure

1

Access to U.S. Markets

2

Access to the World

3

Utilities

4

Workforce Development

5

Higher Education

6

Prime Real Estate

7

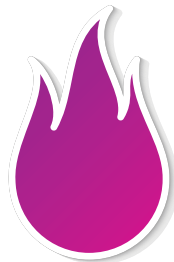
State and Local
Incentives

8

LOGISTICS HOT SPOTS: **What it Takes to Make the List**

With a combination of compelling traits, some places are particularly well suited to supply chain operations. Here are 8 characteristics that define a logistics hot spot.

By Merrill Douglas



AS COMPANIES SEARCH the U.S. map for places to build new manufacturing, logistics, and distribution facilities, cities and states compete for their attention. Every region touts a variety of logistics benefits, so how do you know where to set your sites? Here's a look at eight defining traits of a logistics hot spot.

1 Transportation Infrastructure

The more competing transportation options you have for moving product, the better service you can expect and the less you'll pay.

Georgia is one state that earns high marks for transportation infrastructure. Assets there include an extensive interstate highway network, two Class I railroads, the most-traveled airport in the world, and two busy seaports, Savannah and Brunswick.

New projects are making Georgia an even better choice. "The ports recently broke ground on the Mega-Rail expansion, which will double their capacity to handle rail movements," says Matt Markham, director of the Center of Innovation for Logistics at the Georgia Department of Economic Development.

Also, the Appalachian Regional Port, an intermodal facility under construction in Northwest Georgia, will add capacity, improve access to markets in the Midwest, and help to reduce transit times.

Looking to the future, the Georgia Department of Transportation has

announced plans to start construction in 2025 on the nation's first highway for commercial vehicles only, on 45 miles of I-75 between Macon and the Atlanta metro.

"The highway will get trucks out of the general-purpose lane so they can move more efficiently and safely," Markham says.

2 Access to U.S. Markets

Facing ever-greater pressure to get product to customers ASAP, U.S. companies want to put factories and distribution centers within easy reach.

One city that boasts such enviable access is Memphis. "The population center of the United States is just to the north of Memphis," says Mark Herbison, senior vice president, economic development, at the Greater Memphis Chamber. Advocates say that Memphis is closer to more metropolitan areas overnight by truck than any other U.S. city.

The second-largest river port on the Mississippi, five Class I railroads, and one of the world's busiest cargo airports

also extend Memphis's reach. A special benefit is proximity to the FedEx Super Hub, which lets companies turn over shipments to the parcel carrier in the wee hours and still get next-day delivery.

"Companies can literally add another eight-hour shift to their operation by being close to the FedEx Super Hub," Herbison says.

That late cutoff makes Memphis a magnet for companies that trade on speed, such as medical device manufacturers that ship products at night for use in surgery the next morning.

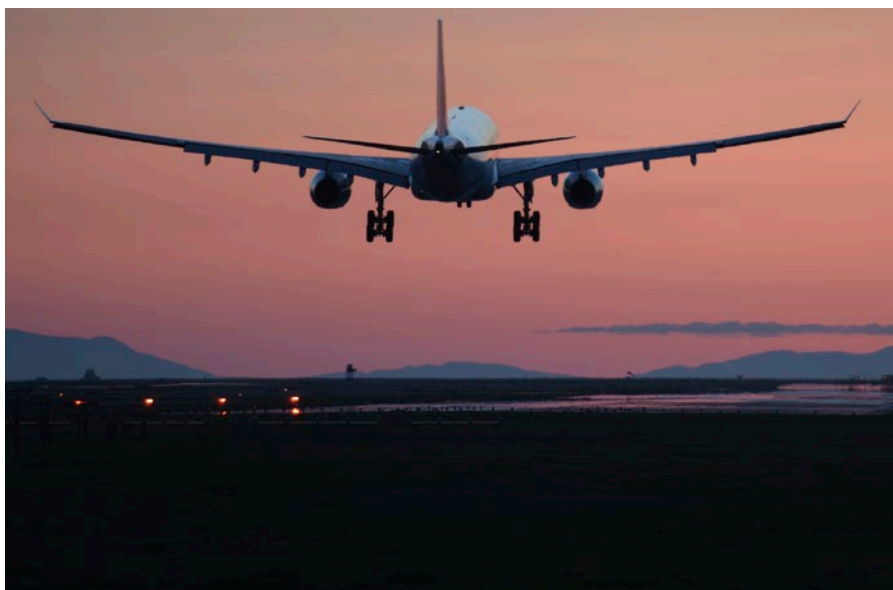
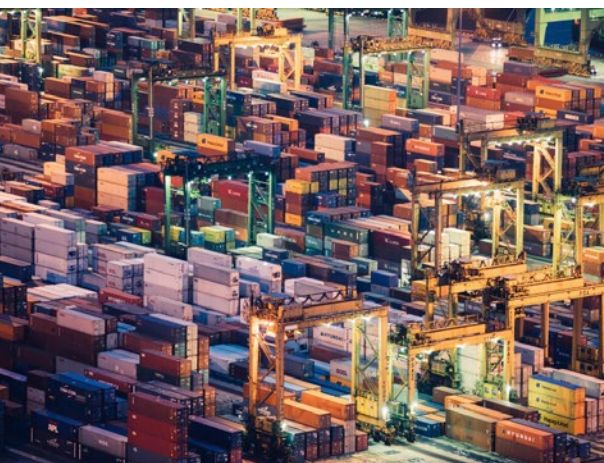
3 Access to the World

For companies whose trading partners span the globe, the sweetest spot may lie near a coastal port. That's why Los Angeles County touts its access to the Pacific Rim.

"You can get from the Port of Shanghai to the Ports of Los Angeles and Long Beach in 13 days," notes Michael Smith, international trade manager at the World Trade Center, Los Angeles. From there, product can move via road or rail to any market across the United States in seven days or fewer, making the trip faster and less expensive than sailing through the Panama Canal to a port on the Gulf of Mexico or East Coast.

Los Angeles-Long Beach sees a high volume of traffic from South America as well, including agricultural products and precious metals. "Also, being so close to Mexico, we see a lot of inflows

The coastal ocean ports and airports in Los Angeles County attract companies looking for easy access to global markets.





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PHOTOS: Marco Calderon

When hiring workers, the Mack Trucks facility in Lehigh Valley, Pennsylvania, leverages the area's abundant educational institutions, and career and technical schools that prepare students for jobs in manufacturing, logistics, and other fields.

coming from Tijuana up through Los Angeles," Smith says.

Among the companies attracted to Los Angeles are overseas firms trying to crack Western Hemisphere markets. One example is Tritium, an Australian company that makes systems for charging electric vehicles.

"Tritium will have manufacturing here not only to reach the United States, but also to connect to Mexico and Latin America," Smith says.

4 Utilities

A distribution center or factory can be a power-hungry operation. That makes reliable, inexpensive electric power an important attribute. Access to broadband and other utilities can also prove crucial.

Logistics operations in Nebraska benefit from the fact that all electrical power in the state comes from publicly owned utilities. Companies that site operations in Nebraska pay overall rates that are 13.2 percent lower than the national average, says Dave Rippe, director of the Nebraska Department of Economic Development.

Because the ratepayers own them, those public utilities can reinvest millions of dollars in infrastructure, keeping service highly reliable, he notes.

Public power makes Nebraska especially attractive to logistics projects that need a lot of cold-storage capacity. "The 880,000-square-foot Walmart grocery and perishables distribution

center in North Platte would be a prime example and, more recently, the multiple expansions of York Cold Storage," Rippe says.

Businesses in Nebraska also gain ready access to the internet. "Nebraska has 10 Tier 1 carriers, and 85.5 percent of Nebraskans have access to wired broadband 25 megabits per second or faster," Rippe says, citing figures from 2017 data collected by BroadbandNow.

5 Workforce Development

A thriving business needs skilled workers. In regions such as Pennsylvania's Lehigh Valley, schools and economic development organizations work to cultivate the necessary talent.

Along with Lehigh University, with its Supply Chain Management program, the Lehigh Valley boasts a wealth of other colleges and universities, plus three career and technical schools that prepare students for jobs in logistics and other fields.

To help ensure that training focuses on the right skills, the Education and Talent Supply Council of the Lehigh Valley Economic Development Corporation (LVEDC) collects data about workforce supply and demand, and uses that information to drive regional workforce development strategies.

LVEDC is involved in several initiatives that focus specifically on logistics. "As one example, the

National Center for Supply Chain Automation recently met in the Lehigh Valley, and LVEDC worked with them to bring employers and stakeholders together for a discussion about how to bridge the gap between educational institutions and employers," explains Don Cunningham, president and CEO at LVEDC in Bethlehem, Pennsylvania.

"We also discussed the National Center's marketing materials aimed at bringing awareness to supply chain careers," he adds.

6 Higher Education

Proximity to a top-ranked supply chain management education program can pay off in many ways.

That's why the Department of Supply Chain Management at the W.P. Carey Business School locates much of its activity on Arizona State University's West Campus, in Glendale.

"That's where a lot of the transportation companies and distribution centers are located," says John Fowler, Motorola professor of international business and former chair of the department.

Nearby companies can easily send employees to the department's undergraduate and graduate programs, Fowler says. They may also take advantage of the new Knight-Swift Logistics Lab, where groups of logistics professionals can explore issues such as the ideal size of a corporate fleet, or

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whether to enter a new market.

Local companies such as U-Haul, plus companies from across the United States, participate in the department's Supply Chain Executive Consortium. Corporate members have the chance to connect with faculty and some of the department's best students, learn about ongoing research, and possibly influence the university's supply chain curriculum.

"We've had many people from local companies teach classes for us," Fowler adds.

7 Prime Real Estate

Once you find your ideal location, you need to be able to buy, build, or lease the appropriate facility. You might well find the property you want in New Jersey.

With more than 40 percent of the U.S. population within one day's drive, the Port of New York and New Jersey close by, and an ongoing push for fast e-commerce fulfillment, the Garden State has seen a land rush in recent years. Luckily, supply is growing to meet demand.

"More than 12 million square feet of industrial space is expected to be delivered in northern and central New Jersey in 2018," says Margie Piliere,

chief economic development officer at Choose New Jersey.

Among those projects:

- Two state-of-the-art warehouse and distribution facilities at Bridge Port ePort, Perth Amboy

- 1.6 million square feet of industrial space at Military Ocean Terminal, Bayonne

- A 2.2-million-square-foot complex at the Rockefeller Logistics Center, Piscataway

- More than three million square feet of space on a 415-acre site at the Logan North Industrial Park, Logan Township.

Companies that have recently taken new space in New Jersey include food exporter Y International USA, third-party logistics provider Woodfield Distribution, and e-commerce lingerie startup Adore Me.

8 State and Local Incentives

An attractive package of business incentives—such as the state and local incentives available in Greater Houston—can offer a significant financial boost.

For example, some taxing jurisdictions in the Houston region offer freeport and goods-in-transit exemptions, which apply to inventory

brought into Texas that leaves the state within 175 days, says Jonas Titas, director of manufacturing and logistics partnerships at the Greater Houston Partnership.

Logistics facilities—and other operations—in Texas "Enterprise Zones" avoid tax on their equipment. The state also offers a Skills Development Fund, which provides customized training for employees.

"On the local side, 380 and 381 Agreements can be customized for a project," Titas says. An agreement might, for example, offer a tax abatement, or provide a cash grant for construction.

The goods-in-transit exemption was one of several incentives that recently persuaded Best Buy, Ikea, and Amazon to locate distribution centers in Greater Houston. Rapid market growth in the Sun Belt is driving a need for such facilities in the region.

"We're trying to be as accommodating and hospitable to these projects as we can," Titas says

Each of these hot spots offers multiple logistics advantages, as do many other regions across the country. Ultimately, every company needs to invest the time in exploring and evaluating all the options to decide which logistics location will turn up the perfect level of heat. ■

Proximity to the Port of New York and New Jersey—the gateway to one of the most concentrated and affluent consumer markets in the world—has helped create a land rush in the Garden State.



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St. Louis: World-Class Multimodal Freight Network

Thanks to its strong global and fast-growing market, the St. Louis region is a leader in freight, setting records and gaining national and global significance.



Photo courtesy of the St. Louis Regional Freightway

May 2018 • Inbound Logistics 103

St. Louis: World-Class Multimodal Freight Network

Unrivaled accessibility. Those two words define the logistics advantage the St. Louis region offers. Factor in an outstanding logistics infrastructure and a ready, willing, and able labor force, and it is little wonder that logistics providers and users are the area's biggest cheerleaders.

Ag Coast of America Activity and Industrial Market Growth Make St. Louis Region One to Watch

Located in America's heartland, a 15-mile section of the Mississippi River in the St. Louis, Missouri, region is rapidly becoming known as the Ag Coast of America for delivering the highest level of grain handling capacity anywhere along the river.

Investments of more than \$200 million in the agricultural product barge transfer facilities there since 2005 have helped increase handling capacity and other efficiencies driving growth. St. Louis regional ports have been ranked by the U.S. Army Corps of Engineers (USACE) as the most efficient inland port district for tons moved per river mile. The region's barge industry handles 500,000 tons per mile, making

St. Louis two and a half times more efficient than its closest competitors.

Those efficiencies translate into one-third of all freight traffic along the Mississippi River, from Minneapolis to the Ohio River near Cairo, Illinois, being captured by the St. Louis region's ports and river terminals, reinforcing the region's critical role in the national freight network.

The signing of a Memorandum of Understanding (MOU) in March 2018 by the St. Louis Regional Freightway, Plaquemines Port Harbor & Terminal District (located in the State of Louisiana) and four ports in the St. Louis region is expected to generate more barge freight traffic in the St. Louis region.

The Freightway will be collaboratively working with the Port of Plaquemines and America's Central Port, Port Authority of St. Louis, Kaskaskia Regional Port District, and Jefferson County Port Authority to support development of a new transportation link for container transport vessel shipments from Plaquemines to the St. Louis area. In 2017, the Freightway and three of the ports signed another key

MOU with the Port of New Orleans.

David Jump, president of American Milling based in Cahokia, Illinois, says the amount of river business in the region disproportionately increased over the past three decades. He attributes this to increased demand for grain transfers across the industry and recognition of the region's transfer facilities as a more cost-effective and efficient means to move products by barge to the Port of New Orleans.

"The St. Louis region is a rail and interstate highway gateway," says Jump. "It's more cost effective to move commodities into, out of, and through St. Louis by combinations of truck, rail, and barge than points upstream on the Mississippi and Illinois Rivers."

Exceptional Connectivity

St. Louis' ability to capture more than 30 percent of the 109 million tons of freight traffic is also due to exceptional intermodal connectivity via the regional freight rail network, which includes six Class I railroad carriers, critical unit train capacity available at many river terminals and ports, and four interstate highways providing national access.

Photo courtesy of the St. Louis Regional Freightway



The barge industry in the St. Louis region handles 500,000 tons per mile, making the region two and a half times more efficient than its closest competitors.

St. Louis Regional Freightway is elevating the region's global status through the Ag Coast of America. The region's unique combination of intermodal advantages, industry-leading manufacturing and logistics, and unrivaled inland freight capabilities make the region a hotbed for attracting growing businesses.




TheFreightway.com


The St. Louis Regional Freightway is an all-purpose authority for freight operations and opportunities within the St. Louis region. Visit **TheFreightway.com** for more information on how we can help your business or organization succeed in the bi-state area.



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St. Louis: World-Class Multimodal Freight Network

Photo courtesy of the St. Louis Regional Freightway



Workers at North Bay Produce's MidAmerica Airport Warehouse are among the St. Louis region's well-educated and experienced workforce, providing added value to warehousing, distribution, and e-commerce companies, all at competitive prices.

The location in the center of America's agricultural heartland also provides the northernmost ice-free and lock-free access on the Mississippi River to the Gulf of Mexico.

"Barge rates from St. Louis to New Orleans are very competitive," says William Grebenc, General Manager of COFCO GROWMARK. A partnership between global agri-business COFCO International Limited and the robust farmer cooperative network of GROWMARK, COFCO GROWMARK jointly owns a barge, truck, and rail terminal in Cahokia, Illinois.

"The St. Louis harbor is able to load 14-foot hull barges (2,000 to 2,200 short tons per barge) versus the locking rivers loading 1,600 tons per barge," says Grebenc. "This makes barge rates more competitive and loadings more efficient."

Job-Ready Workforce

The same assets and advantages contributing to the success of the Ag Coast are also driving steady growth in St. Louis' industrial sector. Companies are

attracted to special tax abatements and other incentives, and are impressed by the speed at which they can build a new project in the region.

A job-ready workforce and available land and space are also critical amenities. The region is keeping up with the labor demand by proactively working with universities, community colleges, and technical colleges to train workers in the two-state area.

The availability of a strong workforce precipitated the opening of General Motors' one-million-square-foot 3PL facility and expansion of Reckitt Benckiser's operations, both located in St. Charles County, Missouri.

Retail giant Amazon has two fulfillment centers in Edwardsville, Illinois, two smaller facilities in St. Louis County, and announced plans for its first Missouri fulfillment center in St. Peters, Missouri. The company attributes its ability to expand in the region to "incredible customers and an outstanding workforce."

St. Louis-based World Wide Technology signed a lease for two million

additional square feet of industrial space in Edwardsville, Illinois. The company has 1,200 employees there, and will add another 500 jobs, increasing its regional workforce to more than 3,200.

Procter & Gamble has a manufacturing plant in St. Louis and a distribution center in Edwardsville, Illinois. Procter & Gamble product supply warehouse leader Herbert Hall oversees three million square feet of space and the movement of several hundred trucks every day. He sees potential for more growth in St. Louis, particularly with continued investment in the region's infrastructure.

"We've purchased land next to our North St. Louis facility for expansion," Hall says. "The labor workforce, freight availability, and cost of living are good, but seeing improvements to key road infrastructure will be a big win for us."

Investing in Multimodal

The Freightway is committed to delivering that win for Hall and other companies that want to grow their operations in eastern Missouri and southwestern Illinois. The role of the Freightway is to optimize the regional freight transportation infrastructure and to advance its position as a world-class freight distribution hub.

"We recognize investment in our multimodal interconnectivity is critical for continued growth," says Executive Director Mary Lamie of the St. Louis Regional Freightway. "A key focus has been uniting local governments, Class I railroads, manufacturing and logistics leaders, port and barge industries, and other stakeholders in regional freight around a list of 20 priority projects necessary to modernize our freight infrastructure."

More than six million square feet of new projects are underway as of early 2018, or breaking ground soon. With two additional industrial parks totaling 925 acres planned in prime industrial corridors on both sides of the Mississippi River, the growth continues.

"Investors are parking tens of millions



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— Babe Ruth



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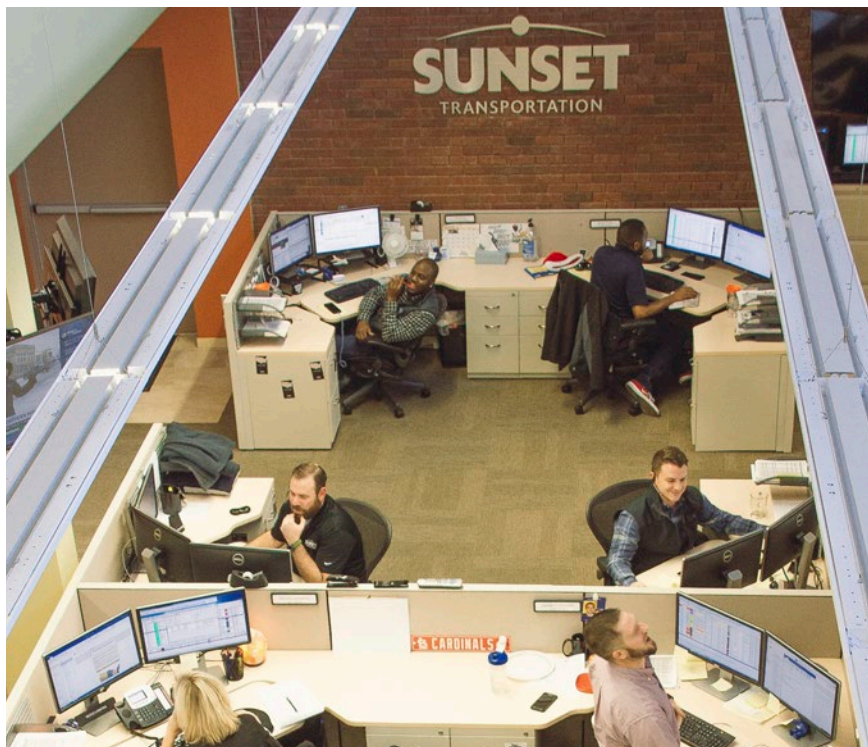
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St. Louis: World-Class Multimodal Freight Network

Photo courtesy of Kacey Schaeffer



St. Louis-based logistics service provider Sunset Transportation focuses on hiring capable, passionate people from a talented and fresh pool of candidates.

of dollars at a time in the St. Louis region because it has established itself as a stable, productive market without the highs and lows of Tier 1 markets,” says Pat Reilly, Senior Vice President with Jones Lang LaSalle.

Magnet for Manufacturing

One by one, the St. Louis region checks off the contents in a bill of particulars:

- Four major interstate highways allow outbound trucks to reach 70 percent of the U.S. population within 48 hours.
- Six Class I railroads offer access to the third-largest U.S. rail terminal.
- The Port of Metropolitan St. Louis is home to the third-largest inland port.
- Two international cargo airports position the metropolitan area for immense growth.

“With so much potential, we are proud to call St. Louis home,” says Brian Pierce, vice president/operations for Sunset Transportation, a St. Louis-based logistics company that specializes in

supply chain management, shipper technology, transportation brokerage, and freight auditing and payment services.

“Aside from expansive infrastructure options, St. Louis provides a high quality of life for a low cost of living,” he adds. “The area is attractive to businesses—manufacturing in particular—with available, affordable properties for distribution services, one of the lowest corporate tax rates in the country, and highly skilled talent coming from at least 12 local colleges offering logistics or supply chain management degree programs.”

Sunset has been around not only to witness the area’s growth, but also to contribute to it. “Sunset has been a family-owned business in St. Louis for nearly 30 years,” Pierce explains. “We’ve seen firsthand the growth and logistics evolution of our city.

“We’re proud to say we’ve been growing the same way, focused on hiring capable, passionate people from an extremely talented and fresh pool of candidates,” he notes.

“Our innate knowledge of the geographical area has been a comfort to local customers and, above that, our emphasis on shipper technology and optimization has only fostered Sunset’s place in local and national logistics circles,” Pierce says.

The company works hard to be a gem in the St. Louis logistics marketplace through attention to individual customers’ needs. “Sunset isn’t a one-size-fits-all 3PL,” says Sunset COO Lindsey Graves. “Our founding principles are the basis of what we promise our customers every day: savings, visibility, data-driven solutions, continuous improvement, and relationships above transactions.

“Sunset’s diamond in the rough is truly our culture, and the integrity and pride we have for our jobs, our fellow employees, and customers,” she adds. “Combine those family-style ethics with advanced shipper technology and visibility tools, and you have Sunset at your service.”

Continuing Growth

Still, the company is not resting on its laurels. This year, Sunset added two new locations to its branch network by acquiring Snowland Freight Services in Wisconsin and Minnesota. The acquisition further strengthens Sunset’s role in St. Louis.

“Snowland’s expertise in temperature-controlled shipments, and the expansion of our national reach into crucial freight markets has been a welcomed addition to the Sunset family,” Graves says.

Moreover, Sunset serves as a prime example of the state-of-the-art approach that logistics providers in St. Louis take to business.

On the technology side, “Sunset’s corporate business operations teams have been working diligently to upgrade our business intelligence suite to ensure customers have maximum, up-to-the-minute shipment visibility,” Graves explains.

If unrivaled accessibility is key to the



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St. Louis: World-Class Multimodal Freight Network

Photo courtesy of FW Logistics



FW Logistics' St. Louis warehouse provides access to both coasts for easy international delivery. Another advantage of being located in St. Louis is that it enables easy access to eight neighboring states to help simplify logistical planning services.

logistics strength of St. Louis, so, too, is the saturation of its resources.

"Most of our facilities are located within the St. Louis area, which makes it easy for us to keep a large number of staff on call for our clients," says Mike Dieckhaus, director of sales and business development for FW Logistics. Founded in 1949 with a focus on food-grade storage, over the years FW has expanded its expertise to include contract warehousing, dry storage, and temperature-controlled warehousing.

FW operates warehouse facilities across the nation, including in California and the St. Louis, Kansas City, Indianapolis, and Atlanta metropolitan areas. "With eight of our 15 warehouses located centrally in the United States, it is cost effective for us to ship just about anywhere and get product there fast," Dieckhaus says.

"FW Logistics enhances these assets by accommodating our clients with space, staff, technology, and trucking when they need it most," he adds.

On the Road

In addition to its warehouses, FW offers trucking services with more than 85 company-owned trucks and 250 trailers servicing the continental U.S. The company offers same-day service within 325 miles of St. Louis and next-day service up to 550 miles.

Its breadth notwithstanding, the

company maintains its focus on customer service. When you're talking about logistics, you might call that attitude the "spirit of St. Louis."

"We are small enough to be nimble to our clients' needs, yet large enough to handle the volume. Our focus is to treat our clients like family because that's how we would want to be treated," Dieckhaus says. "With 15 locations nationwide, 85 dedicated trucks, and over 8 million square feet of warehouse space, we can accommodate for just about anything."

Advantages of the Midwest

Another component of the logistics spirit of the region is constant attention to what is just ahead, over the horizon. In keeping with that spirit, FW is always looking for the next big thing.

"The biggest trend that we—and everyone else in the United States—is seeing is the uptick in e-commerce demand," Dieckhaus says. "This greatly improves the advantages that FW Logistics offers. We are able to accommodate not only quickly, but also efficiently."

Having its corporate base in the St. Louis area has contributed significantly to the company's status as one of the fastest-growing logistics companies anywhere.

"We believe that our consistent growth is directly related to our location

in the Midwest, coupled with our customer service, and the ability to flex," Dieckhaus says. "We always suggest that our clients have product in the Midwest to increase their competitive advantage in their market."

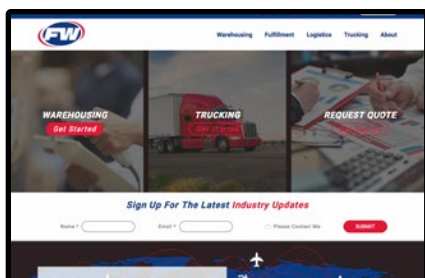
In the Center of it All

The company's St. Louis warehouse is centrally located, close to the city and its outlying areas. This allows the company to service customers in both Illinois and Missouri.

"The advantage of having a warehouse in this Midwest location is that Missouri lies at the center of a vast transportation network, which is directly connected to foreign and local markets," Dieckhaus says. "Missouri has a great history of warehousing and distribution along with low tax rates, gas prices, and energy rates, which is helping to shape the future of the logistics industry with help from FW Logistics."

"Our St. Louis warehouse provides resourceful access to both coasts for easy international delivery," he adds. "Another advantage of having a warehouse in St. Louis is that it enables easy access to eight neighboring states, which helps simplify logistical planning services."

Unrivaled accessibility and saturation of resources. That's the long and the short haul of the St. Louis region's story of logistics excellence. ■

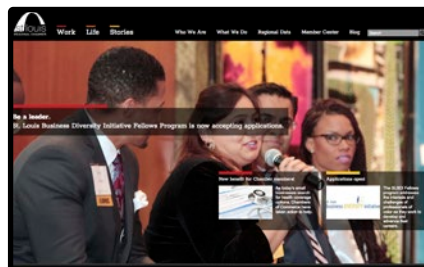


FW Logistics • www.fwwarehousing.com

FW Logistics is an experienced logistics service provider that is big enough to handle all your supply chain logistics needs while still being small enough to give you specialized service. Founded in 1949 with a focus on food-grade storage, over the next 50 years FW has spread its expertise to include contract warehousing, dry storage, hazmat storage, and temperature controlled warehousing. With more than 7 million square feet of warehouse facilities across the nation, FW is the right size for any 3PL need.

St. Louis Regional Chamber of Commerce • www.stlregionalchamber.com

Given its geography and infrastructure, it's no surprise St. Louis has a tradition of leadership in transportation, distribution, and logistics. Its manufacturing is among the most technologically advanced and highest value-added, as home to Boeing's Defense Space & Security business unit. From a macro standpoint, the St. Louis regional economy largely mirrors the U.S., with industry sectors rising and falling in sync with national trends. And, like everywhere, its regional economy continues to evolve. Startups in the technology and life science fields are getting launched and funded at a rate unimaginable just a few years ago. It's an amazing transformation to witness.



St. Louis Regional Freightway • www.thefreightway.com

Established as the St. Louis region's go-to source for coordinating freight activity, the St. Louis Regional Freightway provides site selection and other assistance to manufacturing, logistics, and multimodal transportation companies and their service providers. As a business enterprise of Bi-State Development, the Freightway plays a critical role in the growth of the region's manufacturing and distribution sector within the City of St. Louis and seven adjacent counties in Missouri and Illinois. The St. Louis Regional Freightway offers a unique combination of competitive advantages unavailable anywhere else in the country.

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Submissions must be received by June 8th, 2018. One winner will be announced in the July issue of *Inbound Logistics*. Enter submissions at bit.ly/APICS_Scholarship

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Casebook | by Sandra Beckwith

Cookware Company Stirs Up a Sizzling Supply Chain

Cast-iron cookware, a kitchen staple for generations, is surging in popularity. Industry experts attribute a 50-percent jump in sales this decade to millennials and others who appreciate cast iron's value and versatility. Home cooks can prepare nearly any recipe in cast-iron skillets and pots on the stovetop or in the oven.

When sales of cast-iron cookware heat up, a well-known brand prepares a solution to expand manufacturing capacity and warehouse space.

Nobody knows this better than 122-year-old Lodge Manufacturing Company, the oldest family-owned cookware company in the United States. As it tried to manage more orders for its cast-iron skillets, griddles, and other cookware than it could fill, the company added a third production line to its foundry. Even that wasn't enough to help the largest employer in South Pittsburg, Tennessee, keep up with demand.

That's when Lodge decided to invest \$85 million in a second foundry, a single distribution center to replace three others, and its first warehouse management system (WMS).

Business has been especially good since Lodge introduced its

foundry-seasoned cookware in 2002, the first company to do so. Today, its product line includes the top-selling 12-inch and 10-inch seasoned cast-iron skillets, porcelain-enamel Dutch ovens and pans, carbon steel pans and skillets, and camp ovens. Lodge manufactures products in both the older foundry and a new, 127,000-square-foot facility that began pouring in late November 2017.

A new 212,000-square-foot distribution center went online in July 2017, replacing the previous 40,000-square-foot warehouse and two smaller storage-only buildings. Lodge's first WMS, EVS's *mobe3™*, supports a completely new fulfillment process involving a



zoned layout and six times as many dock doors as before.

When Sam Touchstone, Lodge senior vice president of finance and administration, began the new distribution center design process, it was clear the company had to replace the paper-based system it had always used for processing orders. Sage Technologies, the company's ERP system provider, introduced Touchstone to EVS, an enterprise software company in Boulder, Colorado.

Touchstone told the EVS team in early 2017 that his goal was to transition to the new distribution center in July without any down time. That was a significant challenge considering employees would be using technology, rather than paper, to pick and fill orders in a new space with a different layout and flow.

But EVS was up to the challenge. The software company knew Lodge would need to define new warehouse processes before implementing a WMS,

so it connected Touchstone with Tom French, CEO and founder of the Supply Chain Coach.

When evaluating Lodge's ERP data, French discovered a significant opportunity. Noticing a large percentage of the company's business comes from cookware retailer e-commerce orders, he recommended reducing shipping costs and delivery time by drop-shipping those orders from retailer sites directly to the consumers placing orders.

To do that, the distribution center should be set up in zones according to customer types that include online retailers, French said. In addition, to get the functionality required, the WMS would have to be disconnected from the ERP.

Stirring Things Up

Coincidentally, this presented EVS with an opportunity to beta-test its new WMS, which would allow Lodge to eliminate shipping to retailer warehouses for e-commerce order fulfillment. That appealed to Lodge, but it wasn't the only software feature that made sense for the company's situation. The new mobe3 was the first iOS-based WMS, which made the user interface much more attractive to Lodge than alternatives.

"Many of our people have been with us for more than 20 years, and we would be asking them to start using an automated system instead of the paper process they knew and trusted. It was a big shift," Touchstone says. "But they're familiar with iPhones, and that made the transition to a completely new way of doing things easier than it might have been with other options."

"The workers weren't just implementing a new WMS," adds Nate Brown, chief technology officer at EVS. "Their roles and responsibilities would also change. Lodge had to re-define all the roles because the physical process was now much different."

And yet, after taking a long weekend in late June to count and slot inventory,

FRYING HIGH

Lodge Manufacturing Company's \$85-million expansion includes:

- Two second-foundry DISA molding machines that can produce up to 550 molds per hour in addition to the three DISA molding machines existing at the older foundry that can still produce 400 molds per hour.
- A 212,000-square-foot consolidated distribution center replaced the 40,000-square-foot warehouse and two smaller storage-only buildings.
- Four-layer direct-to-consumer product flow racks for 300 locations—SKUs—can be stacked with as many as 100 products.
- 34 aisles that are seven pallet locations high provide almost 17,000 individual pallet locations.
- 24 dock doors—up from four in the old facility.
- A new fiber optic network for internet access that took the company from 35 megabytes for uploads and six for downloads to 100 megabytes both up and down.



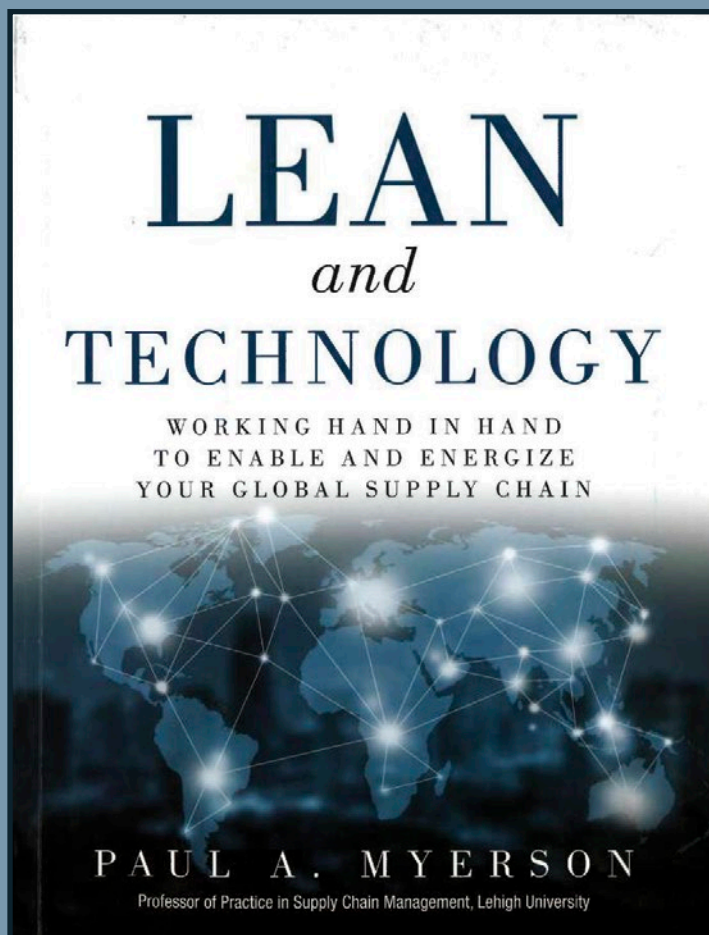
Cast-iron skillets move through Lodge Manufacturing Company's new foundry.

when the new distribution center opened on Monday, orders were filled and shipped. Preparation and training had a big impact on the company's ability to minimize downtime, but so did the fact that mobe3 let Lodge simulate and test processes before the facility went live.

"We were confident the processes and rules were correct because we

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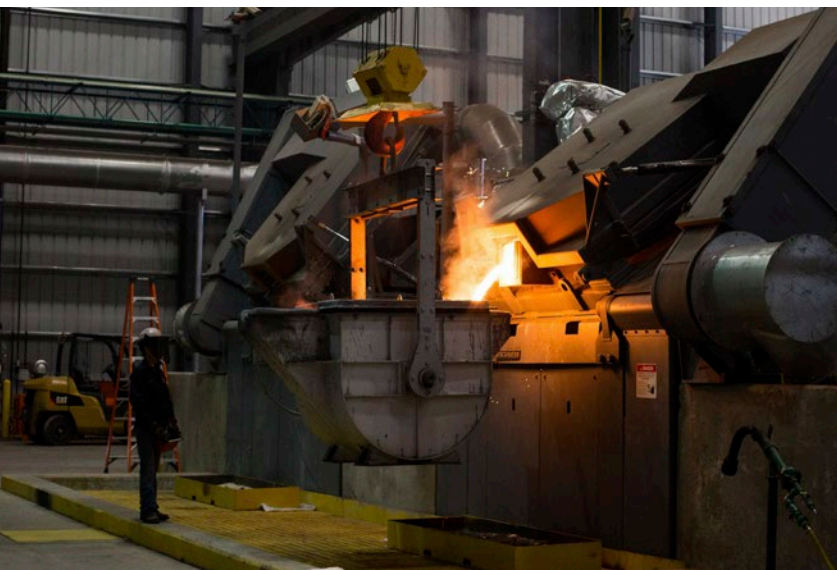
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Lodge's new distribution center is five times larger than the warehouse it had previously used to fill orders for its cast-iron cookware.

Lodge Manufacturing Company built a second foundry in South Pittsburg, Tennessee, to help meet demand for its popular cast-iron cookware.

could simulate everything before the warehouse opened," says Evan Garber, CEO of EVS.

Still, the changes for Lodge's 30 distribution center employees extended far beyond using technology built around their institutional knowledge. The zone approach to filling orders is different, as are storage systems.

"The couple of shelves we used before have expanded to three pick aisles with our first-ever flow racks," says Teresa Baugh, distribution center manager.

Improvements Pan Out

New fulfillment zones are set up according to customer types and fast-sellers. For example, mixed-SKU pallets have their own zone, as do single-product pallets. There's one for fast movers and another for retailer e-commerce orders.

The new facility, processes, and equipment also allow for a much more efficient shipment weighing process.

"We had no weights or dimensions in our ERP before, so we'd have to pick and weigh each order before shrink-wrapping the pallet. Only then could clerks route the order for pickup," says Touchstone.

The WMS contains every product's package weight and dimensions. "We now know how many pallets the order will have, and what the order weighs before it's picked, so we can route it immediately," he says.

Even without factoring in increased production from the new foundry that went online almost six months after the distribution center opened, results have been transformational. They include:

- Nearly doubling the record for most pounds shipped in a single week, going from 1.2 million to 2.2 million.

- Breaking the record for most pounds shipped in a single day, jumping from 500,000 to 700,000 pounds.

- More than doubling picking capacity from an average of 700,000 pounds weekly to a record 1.8 million.

- Dramatically improving the time it takes for order entry to ready-to-ship from 14.5 to 8.3 days.

- Cutting the turnaround time for orders shipped to an Amazon warehouse from as many as 12 days to three.

With continuous improvement in mind, Lodge will soon implement a transportation management system (TMS) that will allow it to schedule pickups more efficiently.

"This will change the flow at our dock doors because we'll be able to schedule when outbound shipments get picked up instead of waiting for the customer to tell us when the truck will be here," Touchstone says. "It will give us much more predictability."

It will also allow Lodge to expand pre-paid freight to more customers. "A TMS will help us get better at pricing that so we can offer it to more of the customers that are asking for it," he says.

Show Us Your Skillsets

Reflecting back on the challenges involved in making such significant changes in 2017, Touchstone is struck by how well Lodge employees adjusted to a complete overhaul of their work processes. He admits that the company's profit-sharing program helps—Lodge gives 10 percent of its pre-tax profits to employees every quarter. But it's bigger than that, he says.

"We have tremendous people," Touchstone says. "When we tell them we want to change something that will improve the process, they embrace it."

Chefs everywhere appreciate that can-do attitude. ■



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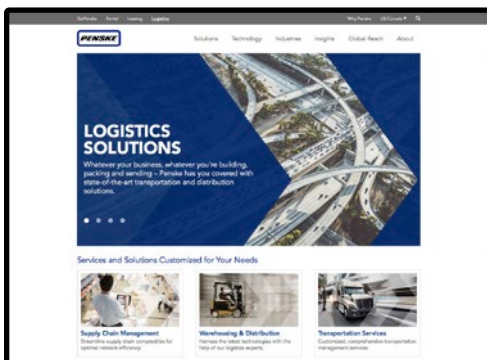
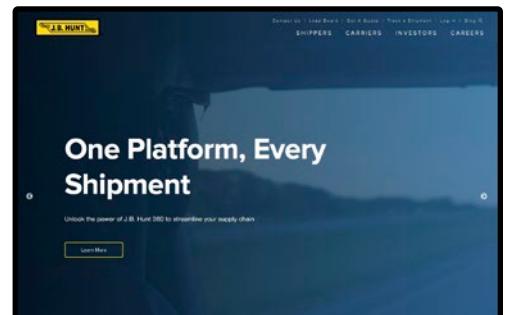


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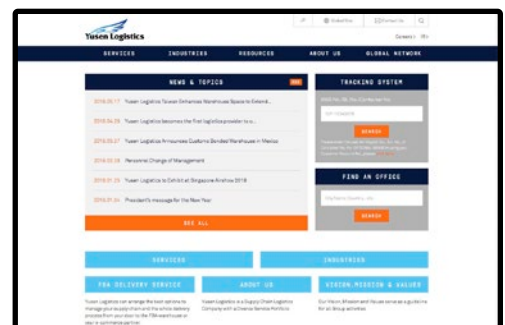


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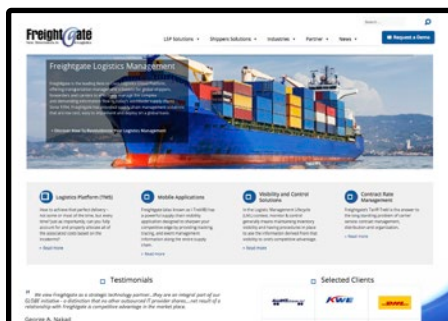
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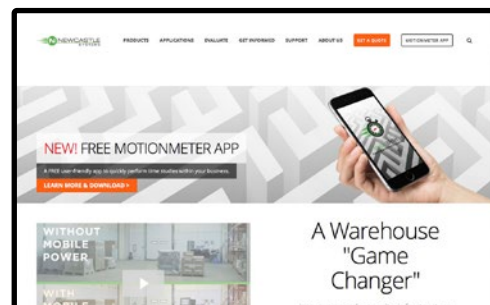
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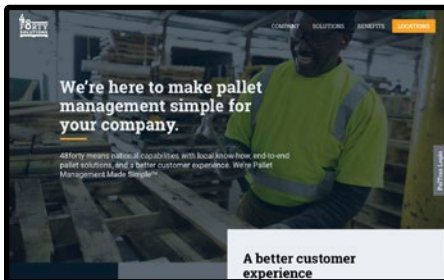
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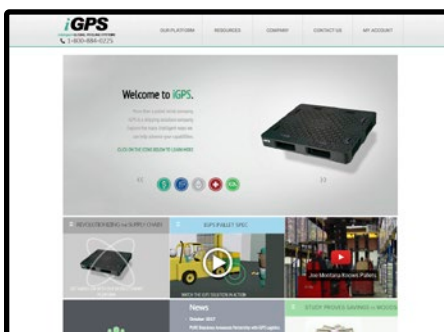


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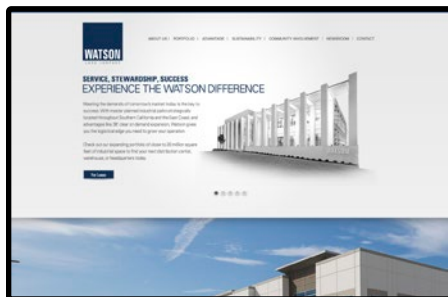
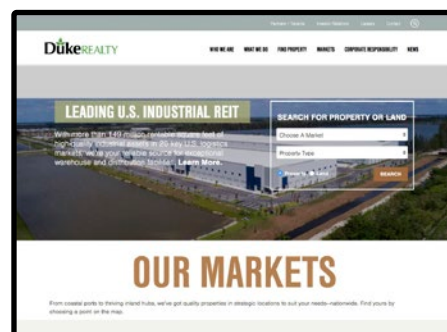
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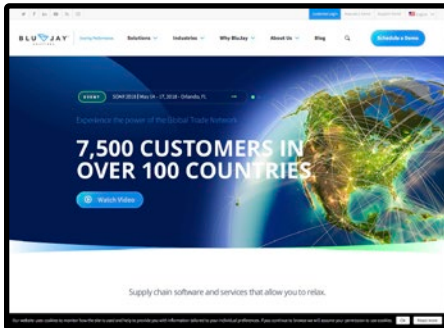
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TMS

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AR Traffic has been providing shippers with advanced transportation management software and third-party logistics services since 1964. All its products and services are designed to improve your efficiency, accuracy, record-keeping, control and auditability as well as to lower your freight costs. For a free study to show how you can cut costs, improve customer service, and streamline your business, visit the website today.





BluJay Solutions • www.blujaysolutions.com

When you partner with BluJay, you gain the advantage of the largest global trade network, a cloud-powered portfolio of application services, hands-free customs, real-time data analytics, and the visibility and velocity to adapt quickly. BluJay's proven, advanced technologies scale with your business. Equally important, its customer-centric team has the transportation expertise and passionate commitment to help you soar.

CT Logistics • www.ctlogistics.com

Since 1923, organizations have leveraged CT Logistics to provide global freight audit and payment and transportation management solutions. Partner with CT to design and implement customized supply chain and rate management solutions. CT's Business Intelligence platform provides global spend visibility and data analysis using SOCII and ISO 9001:2008 certified processes. Services also include: shipment execution, bid management, shipment planning and execution software, and professional services for consulting and advising.

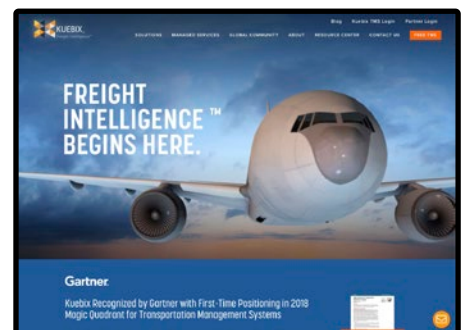


Fortigo • www.fortigo.com

Fortigo's team of experts specializes in logistics optimization and enterprise Web-based software. For companies seeking to reduce costs, improve customer satisfaction, and increase profitability, Fortigo automates, optimizes, and audits logistics decisions. Fortigo plugs into established supply chain applications and provides rapid return on investment by optimizing and deploying closed-loop logistics processes, minimizing ship-to-order times and streamlining collaboration with logistics providers.

Kuebix • www.kuebix.com

Kuebix offers a modular, scalable, and intuitive Transportation Management System (TMS) platform that supports all modes of transportation. Users can rapidly connect parcel, LTL, full truckload, rail, ocean and air carriers on a single Kuebix platform. And since it's built on the latest cloud technology, Kuebix can seamlessly scale to meet any company's complex needs.



IN THIS SECTION:

TMS



nVision Global • www.nvisionglobal.com

nVision Global is a leading international freight audit, payment, and logistics management solutions provider. With locations in North America, Europe, and Asia, our staff is fluent in more than 25 languages, and processes and pays freight invoices from more than 190 countries worldwide. Over the years, our customers have come to rely on our prompt, accurate Sarbanes-Oxley-compliant freight payment services, as well as our leading-edge information management analytical tools including global mapping, graphing, benchmarking, modeling, and network optimization analysis to help them manage their overall supply chain costs.

Odyssey Logistics & Technology Corporation www.odysseylogistics.com

Odyssey Logistics & Technology Corporation (Odyssey) combines deep industry expertise with leading technology to provide multimodal logistics management services to the chemical industry and other process manufacturers. Odyssey enables clients to outsource any part of their logistics processes to achieve savings through reduced transportation and infrastructure costs, measurable customer service and process improvements, and improved data quality and management. Odyssey is a leader in intermodal with expertise in liquid food, chemicals, and metals transport.



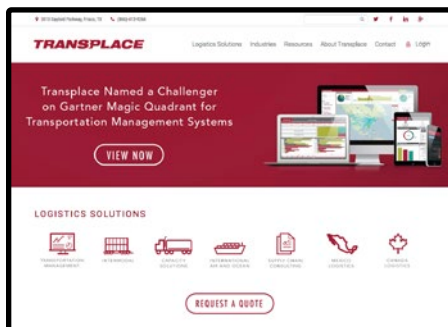
Sunset Transportation • www.sunsettrans.com

Through our diversity of services and technology to our transparent and customer-focused culture, Sunset Transportation is positioned as a dominant logistics management partner for mid-market and large businesses. Sunset's flexibility and entrepreneurial spirit makes us The Right Size 3PL for your growing business—large enough to provide professional, multi-modal solutions while remaining agile and committed to our roots with personalized service.

SwanLeap • www.swanleap.com

Forward-looking companies understand the limitations that rule-based decision making has created in best practices. SwanLeap TMS is not held back by these outdated rules—instead it gathers data across all modes to show you your options and find you the optimal shipping choice. SwanLeap's modern, intuitive TMS gives you the power and freedom to leverage your data to solve day-to-day challenges, generates transportation savings, and improves your customers' experience.



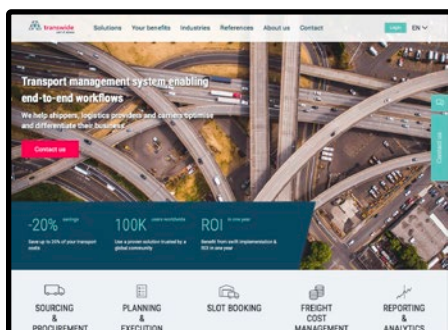


Transplace • www.transplace.com

Transplace is the leading provider of transportation management services and logistics technology, helping manufacturers, retailers and distributors optimize supply chain operations and increase financial performance. Offering a complete suite of transportation management, strategic capacity, and cross-border and global trade services, Transplace's customizable logistics solutions and best-in-class technology give businesses greater control of their transportation operations and enhanced visibility of shipments and overall supply chain performance.

TransportGistics • www.transportgistics.com

TransportGistics is a global, multi-product and services company that provides market-leading, simple, incremental solutions for transportation management and logistics functions within the supply chain. Our Web-based solutions enable our customers to source, procure, and execute transportation services; enable collaboration; reduce costs; improve processes; identify hidden costs of transportation; improve vendor compliance routing guides; improve Supplier Relationship Management; monitor vendor performance; improve shipment visibility; generate automatic, status-driven alerts; and monitor carrier performance with respect to time in transit, service failure, and billing.



Transwide • www.transwide.com/en

Transwide TMS is a modular, global, on-demand (SaaS) collaboration platform that enables shippers to increase logistics performance through simplified carrier sourcing and procurement, optimized planning and execution, increased visibility, and cost management. With 225+ customers in 80+ countries across 6 continents, the Transwide solution suite enables shippers to organize, centralize, optimize, and analyze their transportation with maximum cost efficiency.

TRANSPORTATION MGMT/FREIGHT MGMT

Werner Enterprises • www.werner.com

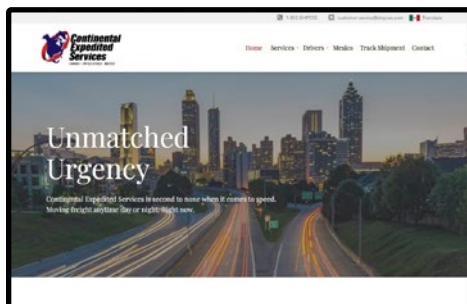
Werner Enterprises, Inc. (Werner), Omaha, NE, was founded in 1956 by C.L. Werner, our first driver. Werner is a premier transportation and logistics company. Werner is among the five largest truckload carriers in the United States, with a diversified portfolio of transportation services that includes dedicated; medium-to-long-haul, regional and expedited van; and temperature-controlled. The Werner Logistics portfolio includes truck brokerage, freight management, intermodal, international, and final mile services.



IN THIS SECTION:

Trucking - Warehousing

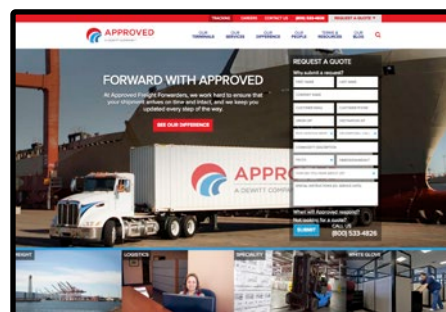
TRUCKING

**Continental Expedited Services • www.continentalexpedited.com**

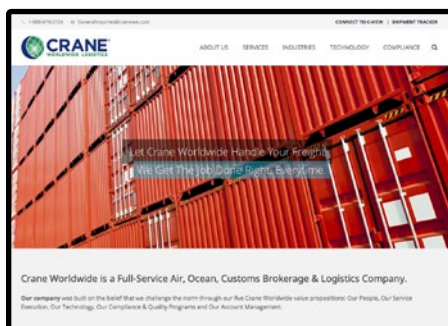
Continental Expedited Services (CES) is one of the largest and fastest-growing providers of premium transportation services in North America, accommodating a full range of transportation solutions with one-call, door-to-door services to and from almost any location in the world. CES's 24-hour service center can provide, within minutes, a competitive price and response time for your time-sensitive freight. When you have a critical shipping emergency, call CES for the most reliable expedited service throughout the United States, Mexico, Canada, and now around the world.

Approved Freight Forwarders • www.approvedforwarders.com

Since 1991, Approved has been dedicated to the unique shipping needs of the Hawaii and Guam trades, and provides freight forwarding throughout the mainland U.S. Approved accommodates all types of commodities and all sizes of freight. Its highly trained logistics experts use advanced technology to tailor shipping solutions that fit your specific requirements. Approved works hard to ensure that your shipment arrives on time and intact, and keeps you updated every step of the way. To learn more about Approved's freight and logistics solutions, sailing schedules, and competitive rates, visit the website.



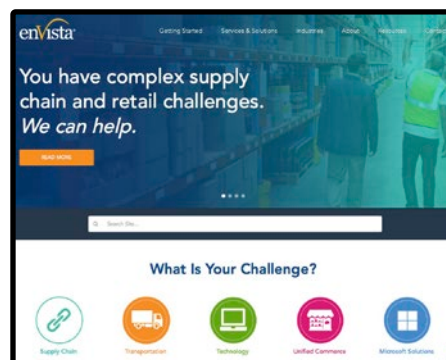
WAREHOUSING

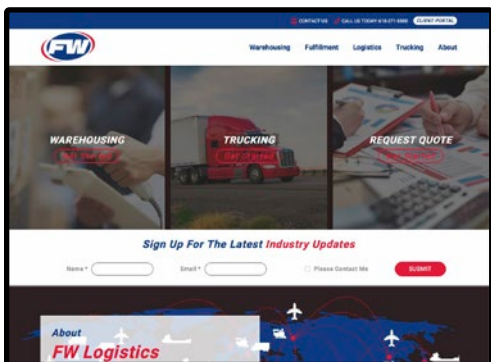
**Crane Worldwide Logistics • www.craneworld.com**

Crane Worldwide is a full-service air, ocean, trucking, customs brokerage and logistics company built on the belief that we challenge the norm through our five Crane Worldwide value propositions: Our People, Our Service Execution, Our Information Technology, Our Compliance & Quality Programs, and Our Account Management.

enVista Corporation • www.envistacorp.com

enVista is a leading global consulting and software solutions firm, delivering transportation spend management services to reduce cost and improve visibility for clients across the globe. enVista's experienced team of transportation management professionals provides cost savings solutions, including: global freight audit and payment, carrier contract analysis and negotiation, TMS selection and implementation, transportation consulting, and business intelligence. enVista's innovative solutions improve profitability, enhance customer service, and reduce waste from source to consumption.



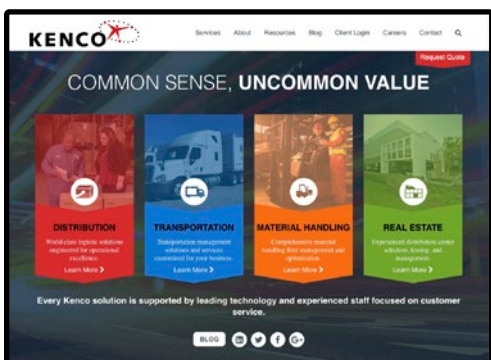


FW Logistics • www.fwlogistics.com

When you select FW Logistics to manage your logistics processes, you get a knowledgeable partner and a recognized leader in logistics planning services within the warehousing industry. Because FW Logistics is one of the most innovative and progressive transportation companies, we provide a unique and advanced approach to the storage and transportation of your goods. Our years of experience makes us the leader in the industry, and we continue to grow by helping companies understand how planning their logistics strategy will build their business.

Hub Group • www.hubgroup.com

Hub's extensive service network—built over many years—enables it to provide innovative transportation solutions that are versatile, flexible, and designed to deliver maximum efficiency. With this advantage, Hub Group is able to collaborate with customers daily to help them meet their transportation challenges. With intermodal, highway, and logistics transportation offerings, the Hub Network is your single source—coast to coast, border to border. Visit the website to learn what Hub can do for you.



Kenco • www.kencogroup.com

Adding value to your bottom line? That's the mission of Kenco. For more than 50 years, Kenco has guided some of the most demanding supply chains in the world. Kenco's convergence approach can help you streamline your supply chain and bring a greater return on assets and investments. Kenco invites you to visit this website so that you might get to know its services. Then, contact Kenco so that you might truly understand its unique strategic advantages.

Lynden • www.lynden.com

Over land, on the water, in the air—or in any combination—Lynden has been helping customers solve transportation problems for almost a century. Operating in such challenging areas as Alaska, Western Canada and Russia, as well as other areas around the globe, Lynden has built a reputation of superior service to diverse industries.



IN THIS SECTION:

Warehousing - Yard Management

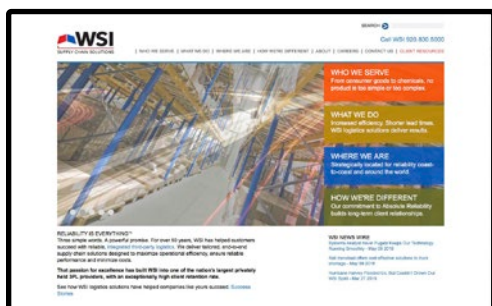
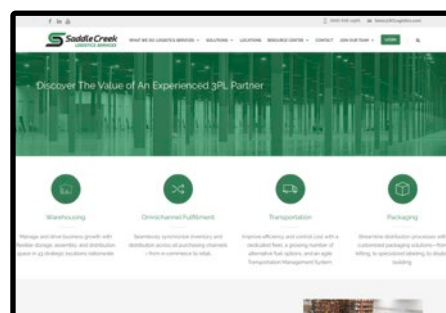


Ruan • www.ruan.com

With Ruan, you can take advantage of door-to-door shipping solutions without the hassles and overhead associated with owning and operating your own fleet of trucks. We have more than 5,200 employees operating, servicing, and coordinating some 3,400 power units and 5,600 trailers out of more than 100 locations throughout the continental United States. But you get more than just drivers and equipment—we become an extension of your team, advocating for your bottom line. Find out why the right partner can drive costs out of your supply chain—call 866-RUAN-NOW or visit our website—ruan.com.

Saddle Creek Logistics Services • www.sclogistics.com

Saddle Creek is an omnichannel supply chain solutions company providing a variety of integrated services, including warehousing, omnichannel fulfillment, transportation and packaging. We leverage these capabilities, advanced technology and our nationwide network to customize scalable solutions that help retailers, manufacturers, and e-commerce companies support their business goals. For more information, visit www.sclogistics.com.



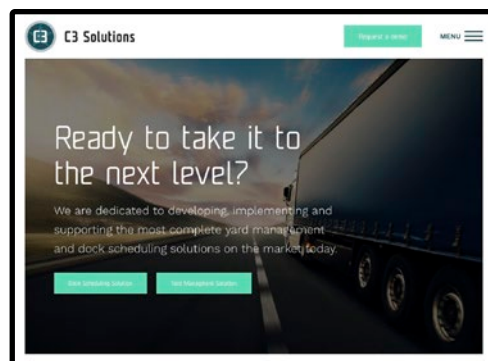
WSI (Warehouse Specialists, LLC) • www.wsinc.com

Reliability is everything. At WSI, that has been our approach to integrated logistics and supply chain solutions for over 50 years. Our promise of Condition, Count & Time ensures accurate, timely, and sound performance—every time. Recognized as one of the top 3PL providers in North America, WSI delivers custom solutions for warehousing/distribution, fulfillment, transportation, import/export, information technology, and customer support services. Depend on WSI for increased efficiency, reduced costs, and absolute reliability.

YARD MANAGEMENT

C3 Solutions • www.c3solutions.com

C3 Solutions is an information technology company specialized in yard management (YMS) and dock scheduling (DSS) systems. Since its founding in 2000, C3 has gained the confidence of clients around the world and across many industries including retail, grocery, distribution, manufacturing and parcel post. Headquartered in Montreal (QC), Canada and privately owned, C3 is dedicated to developing, implementing and supporting the most complete yard management and dock scheduling products on the market today. For more information on C3's products, schedule a free online demonstration.



WhitePaperDigest

Industry experts amass supply chain management best practices and skill sets, and invest in new research and evaluation tools. Now you can benefit. *Inbound Logistics* has selected this collection of whitepapers that will give you a jump on important supply chain issues. For more information on any of these whitepapers, visit the Web sites listed below.



Rad Power Bikes

TITLE: *Radburro: The Built-For-Business Etrike*

DOWNLOAD: <http://bit.ly/Radburro>

SUMMARY: To meet today's logistics challenges including urban congestion and lack of parking, rising fuel costs, and consumer expectations for delivery speed, forward-thinking companies are adopting cutting-edge e-cargo solutions, such as the RadBurro, an enterprise-ready mobility and logistics etrike. Featuring 700 pounds of cargo capacity and an estimated 40-80 mile range per charge, the RadBurro offers best-in-class capacity, durability, and battery life. Download this free brochure to learn more.

Ruan

TITLE: *Transportation Industry Update*

DOWNLOAD: <http://bit.ly/RuanTransportationUpdate>

SUMMARY: In 2018, the transportation industry must navigate a confluence of opportunities and challenges—regulatory pressures, innovative disruptions and changing marketplaces—to capitalize on increasing demand for freight and tightening capacity. Download this whitepaper for a detailed look at these challenges and suggestions for overcoming them.



Kane Is Able

TITLE: *Managing Freight in a Tight Capacity Market*

DOWNLOAD: <http://bit.ly/KaneFreight>

SUMMARY: In this seller's market for freight, carriers are more selective than ever about the loads they haul. To position your business as a shipper of choice for carriers, download this free eBook and learn seven bold steps shippers can take to ensure you can get the freight capacity you need.



DHL

TITLE: *Digitalization and the Supply Chain: Where Are We and What's Next?*

DOWNLOAD: <http://bit.ly/DHLDigitalization>

SUMMARY: Digitalization in the supply chain is happening fast and it's difficult to keep pace. Disruptive technologies—e.g., next-generation robotics and autonomous vehicles—now integrate with big data analytics, sensors, blockchain, and other virtual applications. The opportunities are endless but where are companies on their supply chain digitalization journey? DHL Supply Chain surveyed supply chain and operations professionals around the world to find out.

Spotsee

TITLE: *Logistics Network Analysis*

DOWNLOAD: <http://bit.ly/SpotseeAnalysis>

SUMMARY: Logistics network analysis gets beyond the marketing hype to see what's really happening throughout your power-gen supply chain. A detailed look at your network and how each segment and carrier performs helps you identify opportunities for improvement and predict performance so you can mitigate potential problems. To learn how to save time and money in your supply chain, download this Logistics Network Analysis whitepaper.



Transplace

TITLE: *The Business Case for Transportation Management*

DOWNLOAD: bit.ly/TransplaceTransportationMGMT

SUMMARY: To meet continually changing consumer demands and expectations in an increasingly competitive market, shippers need a fast, efficient supply chain. Fortunately, as the supply chain has evolved, so, too, have transportation management systems (TMS); now providing organizations with greater visibility and control over their supply chain than ever before. Download this new whitepaper to examine how transportation management solutions can help your company reduce risk, improve operational efficiency, and drive meaningful change within your organization.

Legacy Supply Chain Services

TITLE: *When It Comes to eComm, Why Reinvent the Wheel?*

DOWNLOAD: bit.ly/LegacyECommerce

SUMMARY: Flexibility is key to e-commerce fulfillment. As e-commerce fulfillment evolves, two things are clear: 1) supply chain must revolve around a consumer who has many buying options, and 2) success comes from flexible and adaptable supply chains. Legacy partnered with Adrian Gonzalez of Talking Logistics on this brief two-part series.

PRODUCT SPOTLIGHT

WAREHOUSE WORKHORSES

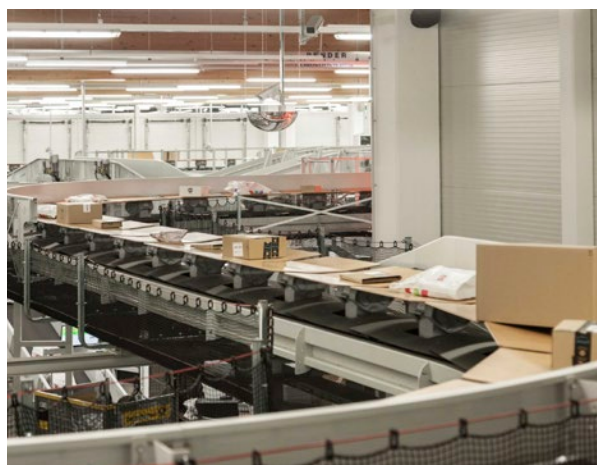


Raymond High-Capacity Reach-Fork® Truck: This new, integrated high-capacity reach truck from the Raymond Corporation lifts up to 4,500 pounds and reaches 542 inches. Applicable for cold storage and freezer usage, the high-capacity truck allows pallet storage from eight to 10 levels for potentially 25-percent more warehouse storage. The truck offers integrated telematics capabilities to increase efficiency, and universal stance and open-view mast for improved visibility and ergonomics.



Speedy Sort: This new sorter from Sitma Machinery features a ring design and can reach speeds of up to 12,000 pieces per hour. Speedy Sort can work with four infeed points, each one featuring up to three conveyors, simplifying the operator's job. If the exit from the product flow is not available (e.g. because of a temporary obstruction or absence of the carriage), Speedy Sort keeps the product within the pocket until the exit becomes usable again.

BG Sorter: BEUMER Group's new sorter family offers precise, controlled sortation for a wide range of items in distribution centers. The cross-belt system maximizes the usable belt surface, permitting the handling of a wide mix of goods easily and safely. The tilt tray sorter prevents items from getting stuck between the trays, which helps to avoid collisions and downtime.



Jungheinrich EJG 212 - 216 Series Walkie Stacker: Recently introduced by Mitsubishi Caterpillar Forklift America to its North American product line, this lift truck series provides a high degree of maneuverability with an overall width of 35.4 inches—ideal for facilities demanding efficiency in tight spaces. With a 2,600- to 3,500-pound load capacity, these counterbalanced walkie stackers feature electric steering and a tiller arm that lets operators handle loads with precision and minimal effort.



iGo Neo: This dual-use automated guided vehicle (AGV) from Dematic operates as both a traditional walkie-rider machine and as an AGV for efficient, ergonomic, and economical automated mixed case picking. As an AGV, the iGo Neo automatically follows alongside the picking operator at all times during picking/putting. It eliminates the time-consuming actions of getting on and off the machine and walking with product over distance during picking.



Lydia Voice 8: This voice recognition software solution from Ehrhardt + Partner Solutions (E+P) uses deep neural network technology for enhanced voice recognition performance. Along with the Lydia VoiceWear solution (pictured), a vest outfitted with specialized microphones and directionally optimized speakers, Lydia Voice 8 delivers almost-perfect recognition rates and helps with diverse workforces speaking a range of dialects.



RollerTop Autonomous Mobile Robot: One of the latest additions to Fetch Robotics' VirtualConveyor family of autonomous mobile robots (AMRs), the RollerTop robot supports a broad range of workflows for materials handling and transport. These AMRs have integrated active conveyor modules that, combined with the robotic platform's new precision alignment feature, lets the robots hand off or receive material from fixed conveyance systems.



Pick-it-Easy Workstation:

These workstations from KNAPP can carry out various tasks—picking, storage and retrieval, defragmentation, and consolidation—depending on the processes the warehouse needs to handle. The Pick-it-Easy series is based on a modular system, meaning the workstations can be tailored to specific demands. They reduce the number of monotonous and strenuous tasks involving lifting, stooping, and stretching to reach objects, boosting order processing efficiency.



North Carolina Ports

acquired three neo-Panamax ship-to-shore cranes. The \$62.8-million investment allows the Port of Wilmington to accommodate the largest containerships calling on the East Coast. The additional cranes enable the port to handle ultra-Panamax vessels carrying upwards of 14,000 TEUs as well as load and offload two ultra-Panamax ships simultaneously.

//Services//

Supply chain solutions provider **Bolloré Logistics USA** opened a FTZ facility in Miami. The 200,000-square-foot site consolidates freight forwarding and contract logistics activities previously housed at two different locations, improving cargo turnaround time for shippers with time-critical logistics requirements.

DHL relocated its Ontario, California, service center to a larger, \$7-million facility to accommodate increased growth in international trade and e-commerce. The new service center provides 75,000 square feet of building space. The DHL warehouse features additional dock doors and two conveyor belts that can process up to 3,000 pieces per hour.

Logistics solutions provider **Spot Freight** opened a larger office in Charlotte, North Carolina's South End. At 8,424 square feet, the new office location reflects the company's rapid growth plans, with Spot on track to add around 50 positions to its current team by the end of 2018 and ultimately up to 300 jobs across its locations by 2023.

► **Hunter Industrial**, Hunter Fan Company's industrial division, offers the Titan fan for warehouses. This high-volume, low-speed fan is available in sizes that range from 14 to 24 feet and allows for widespread air movement and low operating costs. The Titan fan is operated by touchscreen controls that integrate with building management systems. One touchscreen panel can control up to 30 fans.



//Transportation//

Virgin Atlantic now offers cargo shippers moving goods to and from Orlando, Florida, additional gateways across the United Kingdom. In March 2018, Virgin Atlantic Cargo launched a weekly service from Belfast to Orlando, which departs from Northern Ireland every Monday throughout the summer. Starting in June, a weekly Friday service will also be added. This new direct Orlando offering is in addition to 17 flights a week from Gatwick, 12 flights from Manchester, and Virgin's twice-weekly Orlando operation from Glasgow.

Beginning Sept. 1, 2018, **Lufthansa Cargo** will offer the cargo capacities of passenger airline Brussels Airlines. Freight shippers benefit from this joint agreement, which adds the belly capacities of 10 wide-body aircraft, gaining gateways in West, East, and Central Africa, directly from Brussels. Brussels Airlines covers 17 African destinations, including Dakar, Monrovia, Abidjan, Douala, Kinshasa, and Entebbe.

Dachser USA Air & Sea Logistics now offers shippers looking for direct access from Germany to the United States weekly less-than-container-load (LCL) services from Bremen to five additional U.S. cities. The LCL service originates from multiple points in Europe including Germany, Austria, Switzerland, Belgium, Denmark, Netherlands, Czech Republic, Poland, and Slovakia to major cities in the United States: Los Angeles, New York, Chicago, Boston, Houston, Atlanta, and Charlotte. With the LCL service, Dachser consolidates shipments from various departure points throughout Europe.

Freight forwarding company **Davies Turner** added an export LCL cargo service by rail from the United Kingdom to China. Freight headed for China is consolidated through its nationwide hub-and-spoke operations and then loaded at its regional distribution center in Dartford onto a daily trailer service to Hamburg. In Hamburg, freight is transferred onto the rail service, which then heads east, passing through Poland, Belarus, Russia, and Kazakhstan, before arriving in Wuhan, China.



◀ Using a video-based safety program, supply chain solutions provider **Penske Logistics** implemented truck fleet safety technology in more than 2,800 heavy-duty trucks across its North America operations. The system includes event-triggered onboard cameras from SmartDrive that face inside the truck cab, and outwards to the road, along with an ongoing driver safety coaching program.

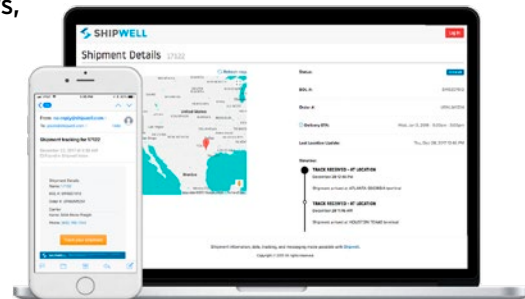
//Technology//

e4score, a provider of cloud-based supply chain digitization and visibility solutions, launched two applications for shippers that automate key delivery tasks to reduce driver wait time and detention accessorial. *EZCheck-In* accelerates gate check-in/out and *ExpressRA* enables instant refusal authorization. Shippers can leverage these tools to become a shipper of choice with their carriers.

Supply chain services provider **APL Logistics** partnered with demand planning vendor **ToolsGroup** to offer retailers a sensing, inventory optimization, and inbound logistics solution. The system ensures APL Logistics ships goods to the optimal locations in the right quantities when they leave the manufacturer. It analyzes demand requirements at the item location level to provide cost and time savings for retailers.



► Recently launched online service **Shipwell** connects shippers, brokers, and carriers through one platform for fast quoting, dispatching, tracking, and communicating. Shipwell lets shippers get multiple quotes, book instantly, and track shipments in real time. Shippers receive shipment notifications, which they can share directly with customers.



Crowdsourced last-mile logistics company **Deliv** partnered with **Zapiet**, which creates store pickup and delivery solutions for SaaS-based e-commerce platforms such as Shopify. Retailers running Shopify sites can now add scheduled same-day delivery powered by Deliv as a checkout option across 35 markets, covering 1,400 U.S. cities. The technology integration lets retailers offer customers the ability to choose and schedule local delivery within specific time windows for the same day or up to 30 days in the future.

FourKites, a supply chain visibility and predictive analytics platform, unveiled *Predictive Weather Intelligence*, a real-time severe weather risk assessment offering that enables shippers and 3PLs to plan around disruptive weather events before they impact freight in transit. Updating weather forecast data every 15 minutes, the solution traces shipments in transit, diagnosing the impact of real-time and forecasted weather conditions along each shipment's route.

//Products//

◀ **BISON**, maker of container jacking systems, launched an automated container lift solution for importers and exporters. The A32 offers an alternative to traditional container handling equipment, allowing shippers to lift containers independently, at optimal times and places, improving operating efficiencies. The A32 comprises four mobile lifting columns, driven by electric-powered hydraulics and controlled by a wireless remote.

Mezzanine Safeti-Gates, designer and manufacturer of industrial safety products for distribution centers, launched a new Dock-Lift gate that provides a safe environment for employees moving material to and from loading docks. The self-closing gate automatically closes and locks into place as the lift elevates. The gates stay locked until the lift is lowered and back on the ground.

Rite-Hite's NEMA 4X Dok-Commander system, which integrates multiple pieces of loading dock equipment into one centralized control unit, added a new element: a real-time trailer presence monitor, Lok-Vu, which provides a camera view of the exterior vehicle restraint. It also lets users see when engagement with a trailer's rear impact guard takes place. The system allows equipment such as Dok-Lok vehicle restraints, overhead doors, and dock levelers to be programmed so they operate in a safe sequential order.

▶ PT Series Container Tilters from precision hydraulic equipment maker **Presto ECOA** tilt containers up to 85 degrees to allow workers to access contents without bending into the container. As containers tilt up, all items end up in a position for easy retrieval. These portable, battery-powered container tilters are designed for applications that require sharing between multiple users or work cells, or where workers need to pick up and return containers to and from staging areas. They work with a variety of containers and are available in 2,000- and 4,000-pound capacities.



ADVERTISEMENT
PRODUCT SHOWCASE

Introducing..."The Exporter"

A low-cost, strong, internationally accepted pallet designed for export shipments.

Here's how Litco's "Exporter" OUTPERFORMS conventional wood, plastic and corrugated pallets for one-way domestic and export shipping!

- ISPM 15 compliant "as is"; no additional costs to heat treat or fumigate
- Low M.C. of 3% at time of manufacture
- Mold, termite and bacteria resistant
- Sanitized at 350 degrees Fahrenheit in the molding process
- Typically 33% lighter than new hardwood pallets
- "The Exporter" has a 52% greater resistance to pallet edge damage

The Exporter is twice as stiff as new hardwood pallets! Stiffer pallets are always better because:

- They are more stable
- They reduce the vibration transmissions and stresses on packaged products
- They help to resist load shifting during transportation.
- They reduce the distribution cost of packaging materials.



Engineered Molded Wood, Export-Grade Pallets
48"x40" as low as \$7.00 (truckload qty.)

Download the Whitepaper comparing Litco's Molded Wood Inca Pallets to conventional wooden pallets at www.litco.com/GMACompareReport

**For a free sample visit our web site:
<https://www.litco.com/molded-wood-pallets>**

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SEPT
30

Council of Supply Chain Management Professionals

CSCMP EDGE Supply Chain Conference & Exhibition

cscmpedge.org | Nashville, Tenn. | SEPT 30 - OCT 3, 2018

AUDIENCE: Supply chain management professionals
FOCUS: Real-world strategies to maximize and transform supply chains; global supply chain best practices; increasing visibility; integrated business planning

SEPT 24-27 Philadelphia, Pa.

International Quality & Productivity Center
Cold Chain Global Forum 2018
coldchainglobalforum.com

AUDIENCE: Cold chain professionals
FOCUS: Adapting cold chain processes and increasing collaboration to satisfy new user and regulatory requirements; building an agile and flexible supply chain while minimizing risk; creating supply chain synergy across the global marketplace

CONFERENCES

JUN 10-12 Fort Myers, Fla.
Transportation Marketing & Sales Association

2018 TMSA Logistics Marketing & Sales Conference
tmsatoday.org/annual-conference

AUDIENCE: Supply chain stakeholders; sales executives
FOCUS: Transportation and supply chain trends that can help sales professionals align strategy with those of the marketplace; achieving organizational alignment between departments and associates to reduce friction and accelerate an organization's growth and success

JUN 25-27 Greenbrier, W. Va.
SMC³

Connections 2018
smc3connections.com

AUDIENCE: Supply chain and logistics professionals
FOCUS: Emerging trends, current challenges, and new innovations in the supply chain; creating value in reverse logistics; mobile apps for profit and delivery; how the regulatory environment will continue to impact business throughout 2018

JUL 16-17 Lake Geneva, Wis.
Midwest Association of Rail Shippers
2018 Summer Meeting
mwrailshippers.com

AUDIENCE: Rail shipping executives
FOCUS: Railroad operating practices; resolving transportation and freight car supply issues; innovations in transportation and legislative matters

SEPT 11-12 New Orleans, La.
IWLA

IWLA Technology & Operations Solutions for Warehousing Conference
bit.ly/IWLAtech

AUDIENCE: Warehouse IT and operational professionals
FOCUS: Addressing operational challenges in the warehouse; increasing warehouse productivity and efficiency; measuring and improving return on investment and tracking new efficiencies

SEPT 11-12 New Orleans, La.
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IWLA Safety & Risk Conference
bit.ly/IWLASafety

AUDIENCE: Warehouse managers, safety managers, and operations personnel with risk responsibility
FOCUS: Best practices and strategies to minimize on-the-job risks and improve the bottom line; assessing the strengths and weaknesses of safety protocols; HR trends and challenges; creating a culture of safety; OSHA updates

SEPT 16-18 Long Beach, Calif.
Intermodal Association of North America
Intermodal Expo 2018
intermodalexpo.com

AUDIENCE: Intermodal freight stakeholders
FOCUS: The future of intermodal terminals; dealing with tight trucking capacity; intermodal network capacity in the face of unpredictable demand; what brokerage means for intermodal; the implications of the next generation of smart equipment on intermodal

SEPT 30 - OCT 2 Chicago, Ill.
American Production and Inventory Control Society

APICS 2018
apics.org/annual-conference

AUDIENCE: Supply chain, operations, and logistics management professionals
FOCUS: Best practices to drive supply chain innovation; key strategies to create more sustainable, strategic, and value-driven supply chains; optimization in complex manufacturing operations

OCT 16-18 Toronto, Canada
Clarion Events/Urban Expositions
Multimodal Americas
multimodalamericas.com

AUDIENCE: Stakeholders in the North American supply chain, logistics, and transportation sector
FOCUS: How blockchain will deliver smart and secure supply chains; adapting to warehouse robotics and the changing face of retail; exploring the possibility of a fifth industrial revolution

SEMINARS & WORKSHOPS

NOV 15-16, 2018 Cambridge, Mass.
MIT Sloan Executive Education
Supply Chain Strategy and Management
bit.ly/MITsupplychainstrategy

AUDIENCE: Logistics and supply chain professionals
FOCUS: The next big trend in supply chain strategy, and the key skills required to be successful; how to better structure a company's supply chain strategy; guidelines for making strategic sourcing and make-buy decisions; integrating e-business thinking into supply chain strategy and management

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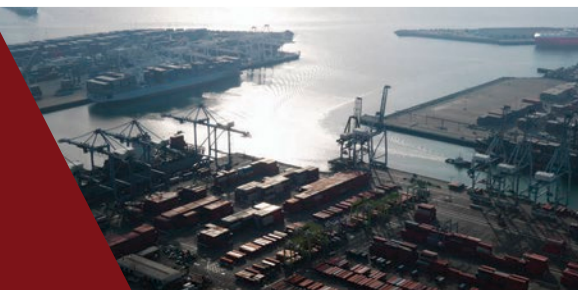
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- Promote the capacity of the logistics corridors of Mexico for transportation of goods by all modes: road, intermodal, maritime and air



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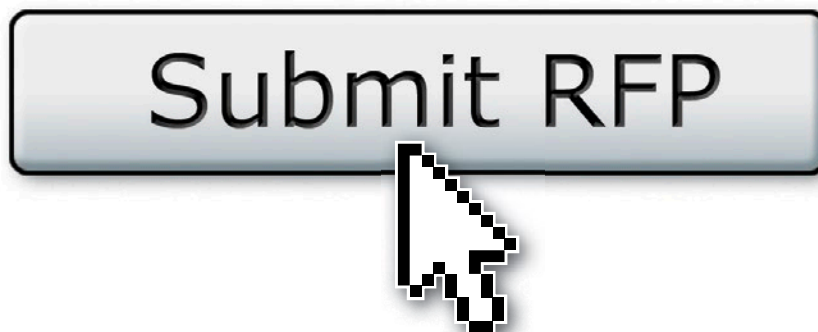
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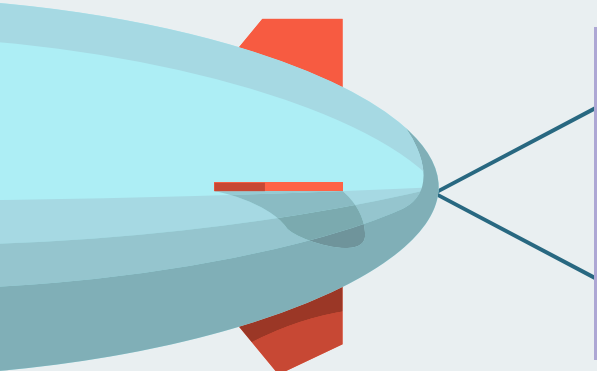
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INVENTORY IN THE CLOUDS



Call it an airborne distribution center, package-laden blimp, or cargo airship, the concept of floating warehouses is taking off. Aircraft makers and retail giants such as Walmart and Amazon are working to get prototypes aloft. Let's hover over some promising projects:



Not Quite a Blimp

French aerospace company Flying Whales made airwaves with its cargo airship, the 500-foot Flying Whale,

with a prototype scheduled for its first flight in 2021. Twice as long as a Boeing Co. 747 jumbo jet, the Flying Whale will have a rigid structure with pockets of helium, technically making it an airship rather than a blimp, which relies on internal gas pressure. Small diesel or electric engines will power the airship.

The airship already has an initial application: lifting 60 tons of logs from forests. Beyond logging, it's expected to transport outsize parts and machinery.

Amazon Flies High

Receiving a patent for an airborne fulfillment center (AFC) in April 2016, Amazon is aiming high: altitudes of 45,000 feet or more. Floating above the clouds, the airship would hold items from Amazon's online marketplace, replenished by a logistics shuttle. Then drones would fly into the AFC, pick up items ordered by consumers, and transport them to the customer's home.

High on Helium

Receiving an order for as many as 12 aircraft worth \$480 million



in 2016, Lockheed Martin's LMH-1 has achieved the most buoyancy so far. The Lockheed Martin LMH-1 can carry 20 metric tons of freight and like the Flying Whale, it can land without the traditional mast. A true blimp without a frame, it lowers cargo transport costs to remote areas.

Walmart Catches the Tailwind

Walmart applied for a U.S. patent for a hovering warehouse in summer 2017. While the airship would make last-mile deliveries via drones similar to Amazon's AFC, it would be closer to the ground, similar to a blimp, hovering at heights between 500 and 1,000 feet.



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