

# SUPPLYCHAIN

## MANAGEMENT REVIEW<sup>®</sup>

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### Executive Guide to

# Supply Chain Resources



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A group of runners is shown on a paved road that winds through a hilly, sunlit landscape. The runners are in motion, wearing athletic gear like t-shirts, shorts, and sunglasses. The background features rolling hills and mountains under a clear sky. The overall tone is energetic and positive.

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# A resource for the year ahead

**I**t's December and thus time once again for our annual "Executive Guide to Supply Chain Resources." This is a comprehensive guide to services, products and educational opportunities targeted specifically to supply chain professionals. As with years past, we're also featuring several articles we trust will offer food for thought in your supply chain in the coming year.

First up is a look at McDonald's approach to supply chain management from Kate Vitasek. Best known for her work in vested supply chains, Vitasek takes an in-depth look at how the fast food leader stays atop the marketplace with a "System" where suppliers and McDonald's "share the pie." That theme is echoed at American Casino and Entertainment Properties (ACEP), where the Nevada-based operator of casinos and resorts embraced supply management principles for three of its most critical service supply items. The result, according to authors Heather Monteiro and Kevin Ball, has been a win-win for ACEP and its suppliers—generating millions in savings. Other

service-based organizations may take note.

What makes for a competitive supply chain? Is it cutting edge technology and best practices? Or is it a supply chain tailored to make good on your company's go-to-market strategy and deliver a competitive advantage? Those are questions that Larry Lapide, SCMR's "Insights" columnist, examines this month.

Last, but not least, executive editor Patrick Burnson sums up what we hope are the prescient reports and commentary on the changed economic landscape after Brexit and the U.S. presidential election.

The editors at *Supply Chain Management Review* wish all of our readers a successful year to come. We hope that the information and insights contained in this issue will play some part in that success.



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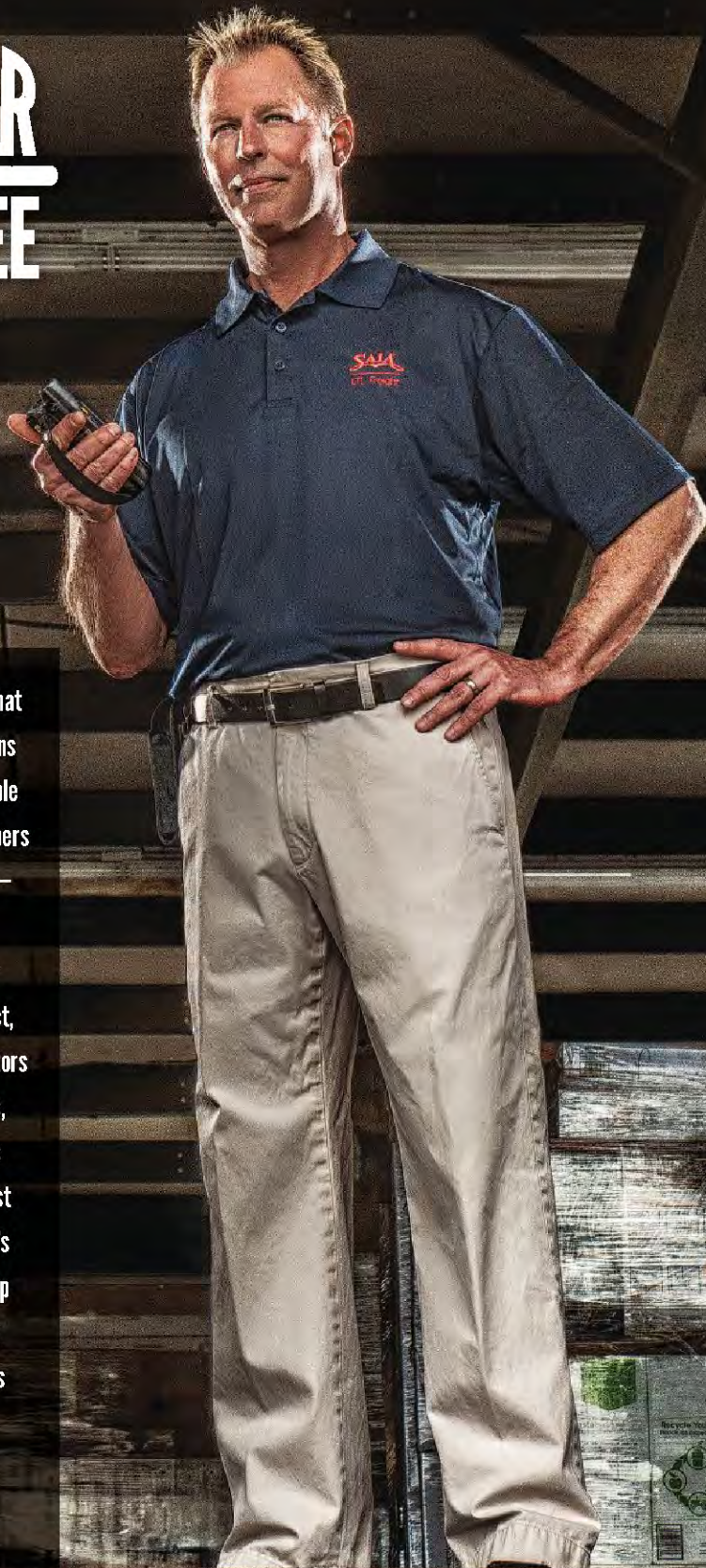
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# SUPPLYCHAIN

## MANAGEMENT REVIEW



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We've brought three columns by Larry Lapide together into one article. Think of them as a roadmap for the do-it-yourself supply chain strategic project manager—the kind of manager we defined in last month's issue—who doesn't necessarily need help from the outside consulting community.

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# McDonald's "Secret Sauce" for Supply Chain Success

The fast food leader stays atop the marketplace with a "System" where suppliers and McDonald's "share the pie."

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*Kate Vitasek is the author of six books on her "Vested business model" for highly collaborative relationships and a faculty member for the University of Tennessee's Graduate and Executive Education program. She can be reached at [kvitasek@utk.edu](mailto:kvitasek@utk.edu).*

**Is there a "secret sauce" for consistent supply chain success?** McDonald's—which is consistently ranked in the top echelon of supply chains by Gartner—thinks so.

Gartner's influential rankings of the top supply chains for 2016 once again has McDonald's occupying the No. 2 spot. In fact, the company has occupied the No. 2 slot since 2013 and has been entrenched in Gartner's top 10 rankings since 2011.

So what is the secret sauce? According to McDonald's, it is creating long-term supply chain success based on a "System" where everyone wins. University of Tennessee researchers studied McDonald's System as part of its research into what is known as the Vested business model. McDonald's relationships with its suppliers embodies the Vested mindset of expanding the pie and sharing the pie. Suppliers that help McDonald's succeed also succeed by building their own businesses. Both McDonald's and its suppliers create value rather than simply exchanging value, as in conventional transaction-based relationships.

BY KATE VITASEK

## The System

McDonald's deep-seated culture for long-term, win-win relationships with suppliers dates back to McDonald's inception, when founder Ray Kroc established a precedent of trust and loyalty with its business partners. Kroc's "System" philosophy is often described as a three-legged stool. One of the legs is McDonald's employees, a second leg is the owner/operators that run the restaurants and the third leg is McDonald's supplier partners. The stool is only as strong as all three legs. This means that franchisees, suppliers and company employees each support the weight of McDonald's equally. Kroc believed that if the restaurant owner/operators and suppliers were successful, success would come to him as well. Simply put, McDonald's, its owner/operators and their suppliers have a vested interest in helping each other succeed. Simply put, for one to prosper, each must prosper.

Kroc's insistence on what UT researchers coined a "what's in it for me" (WIIFWe) mindset has created the world's most powerful restaurant supply chain. WIIFWe thinking is ingrained in the DNA of McDonald's, its suppliers and its restaurant owner/operators. Kroc's System has stood the test of time because leaders within the System have continued to honor a "System First" approach where solutions always include the question: "What's best for the System?"

The results are staggering. The McDonald's System has expanded to more than 100 countries and more than 35,000 restaurants serving more than 68 million customers a day. McDonald's has also set the food industry standards for food quality, safety and assured supply. A USA Today article cited McDonald's food as "safer than a school kid's lunch," with quality standards that are five to 10 times safer than state standards for school meals. The USDA has promoted McDonald's as having the toughest food safety standards in the United States.

Simply put, customers know they will get the same consistent food and service from Arkansas to Alaska and from Argentina to Azerbaijan.

What is fascinating is that McDonald's achieves success from a 100% outsourced supply chain. Kroc decided to use an outsourced model for his operating plan from the very inception of McDonald's. The decision was simple. First, he didn't have the funds to build his own vertical supply chain.

But lack of funds wasn't the only reason. As a salesman calling on other restaurant chains, he had seen many cases where companies forced their franchised restaurants to buy goods from the company. The book, "Behind the Golden Arches," relates the widespread practice: "Tastee-Freez sold freezers to its licensees. Dairy Queen took 45 cents out of every \$1.40 gallon of mix. Chicken Delight required its franchisees to purchase its chicken cookers. General Equipment provided shake machines, broilers and most other kitchen equipment to its Burger Chef franchisees." Having captive licensees as guaranteed buyers, franchisers needed to do little else than sit back and collect money.

Kroc despised the short term thinking that virtually all of his competitors used. For Kroc, success was determined over the long term. Kroc's ultimate desired outcome was profitable, individual stores serving consistent, quality products. Finding suppliers who would be partners in the process was the key. Kroc was determined to work with suppliers that had the same long-term thinking. This meant all three "legs of the stool," owner/operators, suppliers and McDonald's employees, must have "what's best for the System?" as the primary consideration. Partnership and commitment to mutual goals are more important than the lowest pricing.

It is long-term thinking that actually drives suppliers to innovate. And innovation ultimately makes McDonald's cost structure significantly better than the competition.

While Kroc set the tone over 50 years ago, his legacy remains. To this day, "System First" has become shorthand for the long-term win-win behavior demonstrated by all three legs of the stool. The "System First" philosophy is institutionalized within McDonald's and its suppliers, standing the test of time as new leaders, new suppliers and new restaurant owner/operators enter the System.

Marion Gross, senior vice president and chief supply chain officer, North America, cites the System as a huge competitive advantage for McDonald's supply chain. "Our unique supply chain model is based on an exceptional set of operating principles that create long-term wealth and competitive advantage for everyone involved by mitigating costs, preventing safety issues, and producing quality and innovative products that delight customers in a uniquely McDonald's way. The result is increased customer value, better brand health and stronger business performance."

So what are these operating principles that have stood the test of the time? This is the question that UT researchers asked when they studied the McDonald's System. The result of the research, which included studying some of the world's most successful supplier relationships from companies as diverse as McDonald's, P&G, Microsoft and Water for People, was a codification of the Vested methodology that consists of five simple "rules."

### **Playing by the rules**

Virtually all supplier relationships use conventional transaction-based solutions (supplier gets paid per unit, per hour, per mile, per pound). Vested's five rules flip the conventional approach on its head and creates a business model based on achieving long term business outcomes. McDonald's and its suppliers are in sync with the Vested's five rules, leading McDonald's and their suppliers to mutual success under the golden arches.

### **RULE 1: Focus on outcomes, not transactions**

Rather than do RFPs chasing the best price, McDonald's consciously makes a decision to create long term relationships with suppliers. The company works with existing supplier partners to drive business value and achieve McDonald's key business outcomes.

Gross explains: "The System works because all parties build the relationships needed to infuse quality, safety and precision into the supply chain. McDonald's deals with food, which is a very sensitive thing. The supplier takes on the accountability to meet McDonald's exacting standards, which are believed to be the highest in the world. The restaurant is able to focus on customer service and not the back door. The System just works like it's supposed to."

The secret to making it work is the fact that McDonald's and its most strategic suppliers have a deep commitment to each other to continually deliver value for McDonald's System. Suppliers are confident the McDonald's business is not vulnerable to competitors' price-cutting and arbitrary change. And McDonald's is confident—and validates—that its suppliers are delivering the best possible value and looking out after

McDonald's interests to protect and grow the System.

Pete Richter, president, Global McDonald's Business Unit for Cargill and chair of the McDonald's United States Supplier Advisory Council, explains how a long-term relationship founded on high degrees of trust has affected how Cargill interacts with McDonald's. "The trust and confidence in the future means we shift a majority of our resources to driving innovation, quality, supply chain optimization and investing in future growth initiatives. This takes trust on both sides of the table, but once you establish, it creates amazing leverage vs. the traditional arm's length RFP type approach."

### **RULE 2: Focus on the what, not the how**

One of the key ingredients of Kroc's secret sauce was to know McDonald's core competency versus his suppliers. Kroc had the vision, but he knew he needed to rely on the suppliers and restaurant owner/operators for implementation. When it came to suppliers, Kroc—and later Fred Turner—took the lead with the standards for its famed QSC&V (Quality, Service, Cleanliness & Value) approach, and, at the same time, entrusting the suppliers to use their brainpower to determine "how" to best meet McDonald's exacting standards.

Suppliers consistently report that while McDonald's is very much aware of its supply chain partners, it does not micromanage them. One supplier summed up the McDonald's approach as liberating: "McDonald's is very supportive in setting the tone for all of the suppliers to work better to make the McDonald's System better. McDonald's lives and breathes to help its suppliers be successful. It seems simple, it's easy to talk about... but hard to do."

Because McDonald's does not prescribe the "how"—it frees up suppliers to consistently challenge better, faster and cheaper ways to deliver against McDonald's desired outcomes. Innovations to reduce costs, improve service or even create new products for the menu are commonplace among McDonald's suppliers. Says a supplier: "McDonald's relies on us to constantly question how we can do things better for the System." And, this means looking for ways to lower costs structures that create a competitive advantage for McDonald's.



### **RULE 3: Agree on clearly defined and measurable outcomes**

Business is dynamic. What was on Kroc's list of original desired outcomes are not on the list today. This is why McDonald's seeks to align its strategy with its suppliers by sharing key supply chain priorities that drive value for McDonald's System and ultimately the customers eating at McDonald's. To McDonald's, suppliers are part of the planning and execution of the strategic plan. Suppliers refer to this as "having a seat at the table." This enables suppliers to have essential buy in, where suppliers align their individual supply chain operations to the McDonald's Plan priorities. As a key leg in the three-legged stool, suppliers know they are a critical part of making the System work.

McDonald's Plan is a strategic blueprint that helps all parties in the System focus on the core drivers of McDonald's business. The objective is to keep the McDonald's brand relevant and meet the evolving needs of consumers in a dynamic business environment. Today, the customer-focused Plan concentrates on being better, not just bigger. It provides a common framework for global business while it still allows for local adaptation. Sanchez adds a supplier's perspective: "In today's environment, sustainability and cost reductions are very important to McDonald's."

In fact, sustainability of McDonald's supply chain has become a top priority. A good example of joint development initiatives is how McDonald's works with nongovernmental organizations (NGOs) and suppliers on sustainability of its fish supply. Marion Gross provides the big picture: "We have worked on sustainable fisheries for 15 years. Fish is a unique product as it is all sourced from oceans. Currently, the Marine Stewardship Council, the global leader for robust and scientific standards of all seafood eco-labeling programs, provides certification as to sustainable fishing. McDonald's—working with existing suppliers—worked to lead the industry with the NGO. The results? The Sustainable Fish Standards that are still in place today.

Because McDonald's suppliers helped create the standards, they have buy-in for achieving them resulting in 100% certified sustainable fish."

McDonald's and its suppliers use a Supplier Performance Index, a key lever to continuously improve performance. Typically, the SPI covers six categories: Management, System First, Assured Supply, Quality Systems, Innovation and Predictable Competitive

**"It is McDonald's commitment and long-term view that makes suppliers comfortable about not fighting over a penny when they know there is likely a nickel in the future. It is in neither McDonald's nor the supplier's best interest to focus on the lowest price or the natural short-term fluctuations in the market."**

Pricing. Gross explains the power of the SPI: "The SPI leads to insight, calibration and alignment and enables benchmarking. While the SPI yields a score for all of our suppliers, the scores are secondary to the conversation that ensues and the actions established to improve. The SPI allows us to be in synch with priorities and allows us to measure what matters."

### **RULE 4: Pricing model/incentives for cost/service trade-offs**

A key tenet of how McDonald's thinks about pricing models is to ensure members of the system secure a profitable, long-term financial picture—one that keeps both McDonald's and the individual companies successful by focusing on securing stable futures for all. It is McDonald's commitment and long-term view that makes suppliers comfortable about not fighting over a penny when they know there is likely a nickel in the future. It is in neither McDonald's nor the supplier's best interest to focus on the lowest price or the natural short-term fluctuations in the market.

Individual supplier pricing models (known as pricing protocols) reflect the concept of the three-legged stool. The pricing protocols themselves are highly transparent in nature and contain the variables to help all parties understand the business. The goal is optimization of the System. The

protocols are developed to help show trade-offs on the total costs. For example, a supplier might do something to save a penny up front that results in finished goods costing more based on location and transportation. The goal of the McDonald's pricing protocols is to reduce the total cost—not the price. It is a transparent approach that works with suppliers

**The objective is to establish an open culture that openly discusses and debates important issues and, ultimately, makes decisions based on “System First” thinking aimed at how to best achieve the Strategic Plan.**

to dig into the overall cost structures while preserving supplier margins.

Another McDonald's goal is to ensure price stability for the restaurants. Frequent changes to menu price result in owner/operator worry about the price of beef or profit pressure. For this reason, McDonald's and suppliers usually revise pricing protocols every one-to-three years based on the category and the region. When pricing is revisited, it is not done in the conventional vicious cycle of bid and deal renegotiation. Suppliers don't worry about the security of their business or profitably, but rather spend their energy aligning pricing protocols that provide a competitive advantage for the System and remain fair for all three legs of the stool.

**RULE 5: Govern for insight, not oversight**

McDonald's governance philosophy for working with its suppliers is some of the best UT researchers have seen. McDonald's shared the highlights of their governance approach in the book, “Vested: How P&G, McDonald's and Microsoft are Redefining Winning in Business Relationships,” in great detail.

Highlights of governance mechanisms start with using what UT researchers call a “two in a box” approach, which establishes a peer-to-peer relationship between each supplier and McDonald's for each level of governance—from operational to executive. The peer-to-peer alignment is a proactive approach to managing business.

One of the primary benefits of establishing two in

a box relationships is that it drives accountability—personal accountability. As one of McDonald's suppliers put it: “It's not just business, it's personal.”

Ed Sanchez, CEO of Lopez Foods, explains how it works: “The best part of McDonald's governance is the deep peer-to-peer relationships. Work takes place seamlessly on the peer-to-peer basis where problems

are solved at the lowest level possible. If we have a problem—they get it. You don't have to educate McDonald's people on the problem—instead our McDonald's counterparts are there to help us. But a key is they don't micromanage us.” Sanchez says: “For a different client, we were

short one truck the other day and the issue came all the way up to me. At McDonald's, it would never get to me. The right levels would just be on it and it would be fixed. I'd never hear about a short truck.”

In addition, formal “Supplier Summits” are held annually in the United States and every two years in other regions. All McDonald's suppliers receive invitations. With 400 to 600 people filling the room, suppliers hear from McDonald's top leaders including the CEO and COO, regional presidents and menu management. Francesca DeBiase senior vice president, and global chief supply chain and sustainability officer explains: “The purpose is to give suppliers a really well-rounded understanding of where McDonald's is going. This meeting is extremely important.”

An essential aspect of the Supplier Summits is the Awards dinner and presentations. About 15 to 30 awards are presented, depending on the area of the world. Award categories include such titles as “System First,” “Sustainability” and “Innovation.” The crowning event is the coveted “Supplier of the Year Award.” DeBiase continues: “It's a huge deal. The supplier who wins gets a visit from our entire senior management team, along with a festive party for the people who work on our account. These are really motivating.”

But governance is not just about personal relationships. It also includes formal mechanisms to ensure a proper “rhythm of the business.” McDonald's initiates communication through multiple tools that provide 360-degree feedback in both formal and

informal settings. These include monthly metrics reports, quarterly business reviews, site visits, ad hoc and social gatherings, formal and informal supplier events and the SPI dashboards.

Suppliers also have a meaningful voice through Product Category Councils, comprised of suppliers in key sourcing commodities, plus representatives from the customers that are represented by owner/operators association and McDonald's corporation. The objective is to establish an open culture that openly discusses and debates important issues and, ultimately, makes decisions based on "System First" thinking aimed at how to best achieve the Strategic Plan. This sometimes means that an individual stakeholder does not "win." Rather, the decision is the best long-term decision to optimize total costs across the entire supply chain and system.

### **A system built for success**

When you look back at McDonald's success, the results are impressive—and not only for its supply chain. This year, *Fortune* ranked McDonald's the No. 2 Most Admired food services company with high attribute rankings in key categories, including global competitiveness; financial soundness; people management; social responsibility; quality of management; and innovation.

Yet, when Ray Kroc set out to create the System based on long-term win-win business relationships, many thought he was crazy. In his book, "Behind the Golden Arches," he wrote: "The basis for our entire business is that we are ethical, truthful, and dependable. It takes time to build a reputation. We are business people with a solid, permanent, constructive ethical program that will be in style...years from now even more than it is today."

Sixty-one years later, that remains the case. McDonald's, its owner/operators and their suppliers have indeed created a System to be reckoned with—one that continues to set records and sit near the top of Gartner's supply chain rankings year after year.

But ask anyone at McDonald's and they will tell you they could not do it alone. The trust in the System that closely follows the Vested five rules inspires collaboration that consistently drives process

and product innovations on a regular basis. Gross explains: "Our long term win-win approach to working with suppliers allows suppliers to feel comfortable investing in innovations that creates value for all parties in the System."

Suppliers agree that trust in McDonald's win-win System earns not only the hearts and minds of suppliers, but also benefits their wallets, as they make investments in time and capital to help grow the System. Suppliers refer to the level of trust, transparency and collaboration as "unparalleled"—not only between McDonald's and the supplier—but also between suppliers. Suppliers openly share product and process breakthroughs because they have come to believe that what is good for the System is good for the supplier. For example, it was two suppliers working collaboratively that perfected the Chicken McNugget. And one supplier created a patent that doubled beef patty production and shared the patent with competitors to benefit the entire McDonald's System.

What's more, every supplier in the UT research put McDonald's at the top of their list of best clients. For example, Cargill Master Chef Stephen Giunta proposed to transfer to the McDonald's account full-time. A classically trained chef from the world's finest cooking schools, he could work just about anywhere he wants. He chooses to spend his time working with McDonald's. His motive for asking to be staffed on the McDonald's account full time was simple. "With McDonald's, I get to work with best of the best in the industry—the best minds of McDonald's, Cargill and competitors. It's the 'A Team.' I'm competitive and I love the challenge of developing food for millions of customer every day," he said.

Vested is all about creating relationships that create win-win relationships and for McDonald's three-legged stool, it is win-win-win that brings out the best in suppliers like Giunta and Cargill. It is the reason UT researchers are convinced that McDonald's will continue to thrive for years to come. ☺☺

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*The McDonald's story is described in detail in the book "Vested: How P&G, McDonald's and Microsoft are Redefining Winning in Business Relationships."*



## HOW THEY DID IT:

# American Casino's Winning Strategy

BY HEATHER MONTEIRO AND KEVIN BALL

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Supply chain management (SCM) has long been promoted by manufacturers as a way to reduce costs, improve value, and create mutual benefit, higher commitment and long-term viability. However, most organizations in the service sector have been slow to embrace the principles of supply chain management, especially when it comes to the procurement of goods and services. As a result, they leave money on the table by neglecting the numerous benefits that can accrue from carefully managing the supply chain.

In many service industries, procurement is the dominant paradigm for purchasing the items that are critical to delivering the services that define their businesses. But procurement is transactional: Rather than creating mutual benefit, a purchasing agent buys goods directly from a supplier, frequently on a

**American Casino and Entertainment Properties embraced supply management principles for three of its most critical service supply items. The result has been a win-win for ACEP and its suppliers—generating millions in savings.**

low-cost basis, with little to no consideration to what happens down the supply chain beyond that direct supplier. In that model, negotiations, goods and money move solely between the supplier and the buyer.

SCM involves looking beyond that supplier to managing relationships and product flow with other members of the supply chain such as distributors, manufacturers and transportation providers. In SCM, negotiations, goods and money may move between various parties within the supply chain and not just the buyer and supplier. Incorporating principles of SCM in service supply relationships can increase the quality of the supply, reduce the risk of supply disruption and lower the total cost of materials.

In Nevada, one service sector organization, American Casino and Entertainment Properties, LLC (ACEP), took this approach. By embracing SCM principles, ACEP significantly lowered the cost of three of its highest-volume service supplies: linen, terry and glassware. And, by developing a strong relationship with both the manufacturers and distributors of those products, ACEP not only reduced its costs, but also reduced supply risk and price volatility—while improving service levels. Through the adoption of SCM practices and supplier relationship management strategies, ACEP has reaped millions of dollars of savings since launching the initiative. Just as important, the manufacturers and distributors of the products ACEP needs to deliver a customer experience are also creating value for their organizations. This is the story of how they did it.

## **A new model**

ACEP owns and operates four resort properties in Nevada, including the Aquarius Casino Resort, Arizona Charlie's Boulder, Arizona Charlie's Decatur and Stratosphere. ACEP's net revenues have been increasing over the past two years, driven by increased occupancy and per-guest spending. Initially, ACEP was like many service organizations, and probably many other casino and resort companies. When it came to purchasing goods and services, longer-term relationships with existing suppliers were common, while developing relationships and negotiating with upstream supply chains was not a practice. The typical approach resembled

smaller scale purchasing with straight or modified re-buys, dealing solely with the distributor.

While that approach may have worked in the past, it was clear to Kevin Ball, corporate vice president of strategic sourcing at ACEP, that it was no longer working. During his 25-year tenure in purchasing, Ball had developed a keen interest in supply chain management and its potential applicability to the service industry. In just one example early in his tenure at ACEP, Ball was shocked by how frequently the cost of cotton products increased. Linen and terry products like towels, sheets, blankets and napkins are critical to performance in integrated resorts; they are purchased frequently and in high volumes. However, the linen and terry distributor that was Ball's direct supplier could not reduce its prices because they were pushed upwards by the unpredictable price swings in the cost of the raw material: cotton. As a result, the manufacturer of those products set the price, and not the distributor. Based on his previous experience in the hospitality industry, and coupled with his interest in supply chain management, Ball concluded that the utilization of supply chain management techniques at ACEP could help his company hedge against the forecasted increase in cotton prices.

Ball approached his CEO, Frank Riolo, with a plan to negotiate directly with the linen and terry manufacturer to lock in the price of cotton over a longer-term contract, but still source the items he needed at ACEP through a distributor, which would also be a laundry and delivery service.

There have been some service hiccups as the two organizations learn to operate in this new model, but the program has been extremely successful by reducing price variance in a critical, high-volume product for ACEP.

What's more, rather than purchase linens and terry, as in the existing model, he wanted to rent them from the distributor. The CEO gave Ball his support to enact his plan.

Because manufacturers set the price of linens and terry, Ball began his negotiations with Sobel Westex, the original manufacturer of the products he used. In order to obtain price stability, ACEP agreed to make a hefty up front payment of \$1 million to Sobel Westex to lock in the price of cotton; while seemingly steep, the initial payment had the potential to save up to \$2.5 million over a three-year contract that included two one-year extensions. In addition, the two parties negotiated a profit margin that was acceptable to both organizations, whether the price of cotton went up or down. It was a win-win: ACEP stood to save a considerable amount of money and Sobel Westex gained predictable production volumes and cash flows.

The next step was to select a distributor. Ball released a request for proposals (RFP) to laundry service providers in the region, on the explicit condition that they purchase only from Sobel Westex at the prices and conditions negotiated by ACEP. The laundry service providers were also to base their linen and terry rental rates on those same prices and conditions. The winning bid went to Brady Linen Services, a Las Vegas-based supplier of linens to resorts. While the linen and terry rental model was not unheard of, hedging the raw

material price was a novel method of generating bottom line cost savings. Ball says there have been some service hiccups as the two organizations learn to operate in this new model, but the program has been extremely successful by reducing price variance in a critical, high-volume product for ACEP.

Ball's initial focus was simply on stabilizing—and perhaps reducing—the cost of linen and terry to his properties, but during the execution of the contracts he realized that a similar process could work in other situations. He and his team at ACEP evaluated the applicability of the method to other products. They determined that the best candidates for this type of close, exclusive relationship were products that were purchased in high volumes, were critical to a guest's experience and were available from a limited number of suppliers.

The next product on Ball's list was glassware. Ball replicated the linen and terry process for the glassware used across all four of ACEP's resorts. After negotiating with Hospitality Glass, a glass manufacturer, he approached Brady Industries, his existing distributor of janitorial products (not affiliated with Brady Linen), about storing and distributing the glassware products. The reason was simple: During a visit to Brady Industries' warehouse, Ball had learned that the distributor had excess warehouse space, a rarity in Las Vegas. ACEP and Brady Industries negotiated the distributor's profit margin, based on a set purchase cost per box, which will not change even if the per unit cost of the product does change over the course of the contract. Not only did Ball secure scarce warehouse space near the Las Vegas Strip, but ACEP has enjoyed significant savings from the plan. This has also given Brady Industries higher, consistent cash flow and a full warehouse to create the elusive 'win-win' supply chain relationship.

ACEP is currently implementing a similar plan to consolidate nearly 85% of beef inventory with a single distributor, with the intent of saving costs and creating a supply at lower risk for disruption. While beef fits into the characteristics of critical, high-volume products, its perishability

requires different techniques and expectations and its volume and value is smaller than linens and terry and glassware.

#### **Four lessons learned**

After going through this process with three large product categories, four themes have emerged for both ACEP and Ball. First, there should be strong, positive, pre-existing relationships with the suppliers and manufacturers. Second, corporate level support is essential. Third, communicate the mutual benefits of these types of supply relationships with all parties involved including the manufacturers, distributors, C-suite, and purchasing/procurement within the company. Finally, there are some product types that will convey more value as a result of this type of process than others. Let's expand on each of these four.

##### **Good relationships are absolutely essential.**

Laying the foundation for excellent relationships with suppliers, distributors and manufacturers is absolutely essential. It's not enough to spout collaboration and mutual benefit, it must be demonstrated and reinforced in word and deed. If you are continually squeezing your suppliers and pushing down their margins, it is unlikely they will be receptive to your efforts to negotiate. However, if you develop relationships that are truly based on trust, mutual respect and benefit, then both parties can come to an agreement, perform and prosper.

For Ball, developing good relationships means physically visiting the manufacturers, distributors and suppliers; learning about their businesses; discussing ways both sides can benefit one another; and even going out for rounds of golf together. Yes, the social aspect of organizational relationships also makes a difference. Good supply chain relationships develop the level of trust that is necessary to perhaps forego higher margins now for longer term, guaranteed revenue. Treating suppliers, distributors and manufacturers like valued customers is not only valuable, but goes a long way toward developing strong supply chain relationships.

##### **Strong corporate support is required.**

Without strong corporate support, the amount of

time and effort required to develop these supply chain relationships is unlikely to go anywhere. Corporate support includes both C-suite and organization-wide support and endorsement, particularly from procurement or purchasing departments. There is a time investment required to develop the aforementioned essential business relationships, and these relationships pay back in the long term.

To develop corporate support, it is helpful to quantify the expected benefits of the relationship. This can be quite difficult in a service sector organization (see sidebar). Procurement and purchasing agents can be an excellent starting place for cost data, the analysis of which can help identify potential savings. That being said, emphasis should be placed on expanding the focus beyond cost to other benefits of strong supply chain relationships such as reduction of supply risk and reduced price volatility.

##### **Create mutual benefit.**

In order for suppliers to be willing to compromise on things like their profit margins, some type of mutual benefit must be created. The best way to find out how you can help create value for the supplier is to get to know their business. Many times for suppliers, distributors and manufacturers, this mutual benefit takes the form of long-term, consistent product flow and cash flow. Other times, as was the case with Brady Industries, mutual benefit means filling up empty warehouse space with revenue producing inventory, while saving on ACEP's overall costs.

To find out what you can do for your supplier, first develop strong relationships, and learn more

**Laying the foundation for excellent relationships with suppliers, distributors and manufacturers is absolutely essential. It's not enough to spout collaboration and mutual benefit, it must be demonstrated and reinforced in word and deed.**

about the company and the individuals who work there. Then, it's possible to explore unusual combinations, such as having a janitorial supplies distributor with excess warehouse space become your glass distributor. The time and energy used to create those strong supply chain relationships up front can pay off by letting you see these types of unconventional possibilities with your relationship partners. If Ball had never walked into the janitorial supply distributor's warehouse, he would not have considered the possibility of filling that space with his glassware.

**High-volume and/or high-value products work best.** According to Ball, high-volume products or high-value products work best for this type of supply chain relationship. Some products used in the performance of services are commodities, which may not show enough tangible value to develop these time-intensive relationships. For ACEP's resorts, for example, the decision to utilize SCM principles for linen, terry and glassware was based on the very high-volume and essential nature of the product to the guest experience. Not every item that must be purchased is of this nature,

including products consumed internally such as paperclips and ink pens. In order to decide if a product may fit into the high-volume, essential category, you may ask yourself: Which of these products, if absent, would cause my business to close its doors? The answer to that question will provide a good starting point for developing a strategic sourcing plan.

High-value products may also be well suited to this type of SCM, with strong supplier relationships. High-value products are often rare and specialized. Often times, organizations already have a closer relationship with suppliers, distributors or manufacturers of high-value products, simply due to that rarity and specialization.

### **SCM principles for the service sector**

With a thorough understanding of the potential benefits to multiple members of the supply chain, the service sector can move forward and progress toward SCM principles. This involves changing sometimes reticent minds who have "done it this way" for a long time. However, given the lead manufacturing has taken on SCM, and the guid-

ance that can be taken from it, there is nothing holding the service sector back from realizing these benefits.

Though we hear over and over again that organizational relationships are absolutely essential, we cannot hear it enough. Organizational relationships are absolutely essential; and their development is the first step on the path to effective SCM.

Ball and his team reduced their overall cost on three product categories essential to ACEP's service delivery and reduced supply risk. While the development and strengthening of business relationships may seem nebulous, approaching the process with an attitude of mutual benefit can help other service organizations find bottom-line improvements in the supply chain. ☺☺

### **Tracing costs**

One of the difficulties in identifying supply savings in service industries is that tracing costs is more difficult in services than in manufacturing, where concrete parts and products can be counted and identified. When output is tangible, as it is in manufacturing, it is easier to quantify how much input equals how much output. That, however, becomes more difficult during the service encounter.

One way to think about supplies in service industries is to consider the inputs required to do the job. For example, flight attendants do not sell pretzels or toilet paper, yet those items are essential to performing their duties. A trucking company is selling a service, so what are the inputs? Fuel, tires, truck cabs and communication systems are all essential to performing their duties. How about CPAs? They also perform services, yet have required inputs without which they could not accomplish their work such as computers, internet connections and training to qualify them for their job. The intangibility of inputs in service industries makes it more challenging to evaluate costs. However, clearly identifying those inputs needed for a service professional to do their job can attribute dollar signs to service performance.



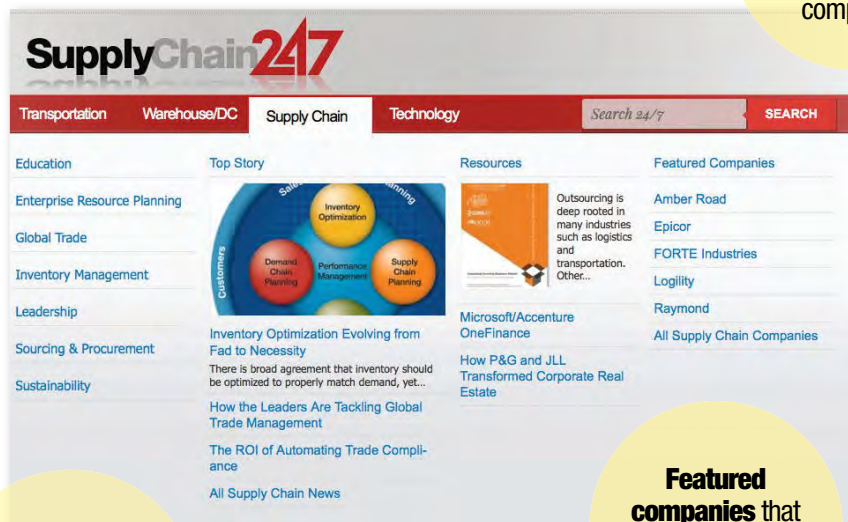
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# Competitive Supply Chains

The best supply chains are more than a collection of technologies and processes. As supply chain evolves from tactical to strategic, they enable a company's go-to-market strategy and competitive position.

BY LARRY LAPIDE

# W

**hat defines a competitive supply chain?** That is a question that Larry Lapidé addressed in three of his “Insights” columns in 2015. The short answer, according to Lapidé, is that a competitive supply chain is essential to a company's go-to-market strategy, and important to winning business. It really comes down to three critical elements: excellence, strategic alignment and optimized demand management. As Lapidé wrote in an author's note to the last column, the three elements work together: “Without formal, routine joint decision-making processes, a supply chain organization is not really playing a major role in executing a corporate strategy, even if it is strategically aligned.”



### **What is excellence?**

During the MIT Supply Chain 2020 Project that researched the future of supply chain, we focused on future excellent supply chains. The research compared today's excellent supply chains with non-excellent ones in order to answer the question: What is excellence? The definition needed to be reasonable to everyone. It also needed to be operational to provide advice to managers looking to maintain excellence into the future.

We simply defined excellence as having a competitive supply chain. That is, a supply chain needed to be positioned to play a leading (not just supporting) role in competing in the marketplace. It had to be recognized as a critical element in a company's competitive go-to-market strategy, and important to winning business. The definition should have included having a corporate culture possessing the three traits discussed above. However, it would have been deemed as an intangible necessity and insufficient characteristic.

### **Why not the Gartner 25 criteria?**

The excellent supply chain framework we devised as part of the SC2020 Project was published a couple of years after AMR Research (now part of Gartner Inc.) inaugurated its annual list of Top 25 Supply Chains. Since the publication, there has been some confusion around the ranking criteria used by Gartner and the excellence definition.

Most supply chain managers misunderstood the intent of Gartner's list, thinking it is the 25 most excellent supply chains. That wasn't the intent. The companies ranked by Gartner are big and public. The list was developed to foster discussion among supply chain professionals about "the demand-driven operational and innovation excellence" of companies. After each annual ranking, analysts point out that these are not necessarily the top-performing supply chains; rather, they are heroes to emulate.

There are several reasons why the list doesn't necessarily represent the top excellent supply chains. Gartner's criteria weigh financial data

and analyst/peer opinions. First, because it has limited visibility into the detailed practices of the supply chain organizations in companies, it de facto assumes supply chain plays a leading role. Second, because financials include return on assets, inventory turns and growth, Gartner's criteria downgrades mature and asset-intensive companies that most certainly have excellent supply chains. Take, for example, companies in the large-scale petroleum industry: They efficiently source and distribute about 90 million barrels of oil daily, on a worldwide basis. Third, ranking supply chains across vastly different industries is an apples-to-oranges comparison. Finally, relying on Gartner analysts and peer opinions makes the rankings grounded in perception rather than on concrete evidence. Indeed it might be compromised by opinions from managers at competing companies.

### **Criteria for excellence**

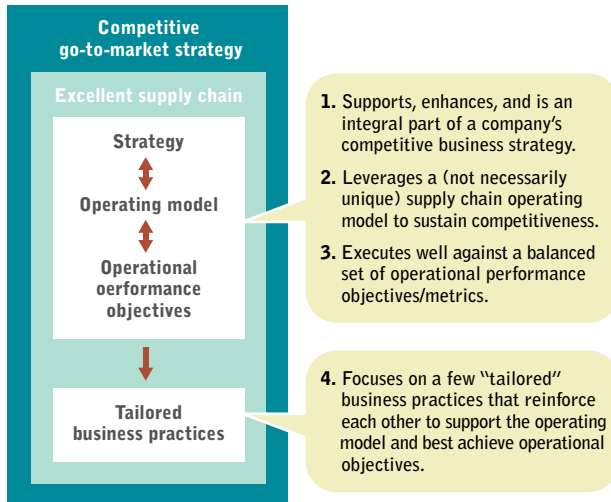
Defining excellence as having a competitive supply chain necessitates using criteria for excellence that relates to whether an organization is positioned to play a leading role in a go-to-market strategy, and is important to winning business. For example, if a company's strategy is to aggressively grow market share at the expense of reduced return on assets—with excessive supply chain costs and inventories—then why wouldn't the supply chain be excellent if it is perfectly aligned with that strategy?

To elaborate on this, two myths were debunked: that an excellent supply chain is 1) part of a highly profitable company; and 2) that it is not part of an unprofitable company. Regarding the first, Levi Strauss in the 1980s enjoyed record growth and profitability as jeans got hot and were being sold in the Soviet Union for \$100 a pair. Eventually, its manufacturing organization could not keep up with demand. Retailers, like JCPenney, resorted to private-label jeans because store shelves were too often bare. Levi's profitability was due to its branding, not its supply chain.

Back when I worked at AMR Research, we conducted benchmarking studies that compared peer companies. One of the metrics we used was order fill rate. In a CPG peer group, all companies had fill rates in the high 90 percentages, except for one well-known, highly-profitable company in the 80 percentages. When asked why, it said that its brands are "so strong that we can ship anything to a retailer and it will accept delivery." The company felt that it wasn't worth spending more

FIGURE 1

## Excellent supply chain framework



Source: Larry Lapide

money to improve customer service. Thus, while the supply chain was not excellent, it didn't need to be because strong branding drove financial performance.

Amazon is a case debunking the second myth; it has spent a lot of money on its excellent supply chain because it has been building the largest unit pick, pack and ship e-retailer. Amazon has been unprofitable during much of its history, and Wall Street analysts are still critical of its lack of focus on profitability. Amazon's strategy to focus on becoming the Walmart of the Internet (and more) has paid off as it continues to grab more retail business that leverages its excellent supply chain (regardless of profits).

Lastly during the dot.com bubble, Cisco Systems grew rapidly with high profitability. Many start-ups bought its networking and routing systems. To fulfill orders sourced from multiple locations around the world, Cisco built an excellent virtual, asset-less supply chain. The company also developed a process that seamlessly integrated hundreds of company acquisitions into its order fulfillment systems. However, when the bubble burst, Cisco was stuck with billions of dollars of inventory write-offs that seriously depressed profitability for some time. While Wall Street criticized the company for this profit mishap, Cisco was able to recoup and get back to its old self in short order, mainly on the back of its excellent supply chain. So was it excellent during the period of depressed profits? Absolutely.

The use of best practices was also briefly considered

during our research but dismissed as a characteristic of excellence. Best practices don't necessarily carry across companies within or across industries. Nor do they stand the test of time. We decided instead to focus on practices tailored to directly enable the operational performance objectives aimed at competing.

### The excellent supply chain framework

Figure 1 depicts the excellent supply chain framework developed as part of the MIT 2020 Project. An excellent supply chain is shown as playing a leading role inside a competitive go-to-market strategy. The four major, tangible characteristics an excellent supply chain should have are:

1. supports, enhances and is an integral part of a company's competitive business strategy;
2. leverages a (not necessarily unique) supply chain operating model to sustain competitiveness;
3. executes well against a balanced set of operational performance objectives/metrics; and
4. focuses on a few "tailored" business practices that reinforce each other to support the operating model and best achieve operational objectives.

The figure illustrates that the first three need to be iteratively aligned to ensure that supply chain competencies are fully leveraged to play a leading role, in accordance with the first characteristic. After this is done, tailored business practices can be developed to enable excellence. This strategic alignment approach will be discussed in part two of this series. (Note that it does not include the aforementioned intangible three traits of corporate culture because I have no approach to getting this, short of hiring lots of offspring from "Tiger Moms.")

Excellence, like beauty, is in the eyes of the beholder. For assessing the role a supply chain organization plays in a company's competitive go-to-market strategy, the beholder needs to be the enterprise itself, including the executive team as well as other functional departments. Thus,

the strategic alignment approach is offered to help companies self-assess whether their supply chains are excellent, need modification or need redoing. After all, if your supply chain is excellent and winning business from competitors, you shouldn't care if it is not publicly recognized.

## II. Strategic Alignment



**A** talk I give is titled “Supply Chain Excellence = Strategic Alignment.” I start it by saying

that because I represent MIT, it needs equations—and the title is the last one you'll see. It aptly states that to have an excellent supply chain, it must be strategically aligned to the corporate competitive strategy.

As stated in the first section of this feature, four major characteristics of a competitive supply chain are the basis of that approach:

1. supports, enhances and is an integral part of a company's competitive strategy;
2. leverages a (not necessarily unique) supply chain operating model to sustain competitiveness;
3. executes well against a balanced set of operational performance objectives/metrics; and
4. focuses on a few “tailored” business practices that reinforce each other to support the operating model and best achieve operational objectives.

I've helped a few companies use this approach to begin to strategically design their supply chains. While developed for design, it can also be used to assess whether a supply chain is already competitive, needs redesign or whether a competitive one is necessary (such as when com-

petitiveness only needs to be enhanced by marketing and sales operations, and not by the supply chain).

The approach involves self-assessment. To gauge the role an organization plays in competing, the beholder of excellence needs to be the company itself, including its executive team and functional departments, not the court of public opinion. As described below, the approach involves three steps: develop a supply chain strategy; develop an operating model and operational performance objectives; and define tailored practices. Let's look at each step.

### STEP 1: Supply chain strategy

The first characteristic of a competitive supply chain is that it supports, enhances and is an integral part of a corporate competitive strategy. Thus, the supply chain organization plays a leading role, and not just a supportive role. The first step in the approach involves understanding the corporate competitive strategy. If it is non-existent, then it needs to be developed in the context of strategic elements that can be directly influenced by the supply chain.

The left-hand column of the table in Figure 2 lists potential competitive strategy elements. They are expressed in terms like the highest, lowest and fastest, to be the best among competitors, and provide market differentiation. (Note that revenue and market share aren't listed because supply chain operations do not directly influence them.) On the right-hand side are supply chain characteristics that directly align to enhance elements, also expressed in terms of highest, lowest and most efficient/effective. For example, an element of Walmart's competitive strategy is “everyday low pricing.” Thus it targets achieving the lowest costs in getting products on to store shelves.

The table is used to align characteristics to corresponding strategy elements. If a company has done its corporate strategy well, the latter would be comprised of just a few differentiating elements that win business. These are then used to identify corresponding characteristics that need to be the focus of its supply chain.

### STEP 2: Operating model and performance objectives/metrics

The second and third characteristics of a competitive supply chain are that it leverages a supply chain operating model

FIGURE 2

**Competitive strategy elements and corresponding enhancing supply chain characteristics**

Supply chain influenced competitive strategy element	Supply chain characteristics aligned to enhance the element
Lowest prices	• Lowest operating costs
Highest margin products	• Highest availability at point-of-sale • Lowest operating costs
Highest quality	• Highest quality of suppliers • Strongest process quality controls
Fastest customer response	• Shortest order-to-delivery cycle • Fastest request-to-promise date
Most innovative	• Most efficient/effective new product launch
Highest return-on-assets	• Highest plant/DC utilization • Lowest inventories
Broadest product line	• Most efficient/effective inventory management • Shortest manufacturing changeover and setups
Highest customer service ratings	• Most effective customer service segmentation • Highest availability at point-of-sale
Most effective post-sales support	• Highest availability of service parts
Most environmentally responsible	• Lowest waste and highest recycling

Source: Larry Lapide

to sustain competitiveness, and executes well against a balanced set of operational performance objectives/metrics. Thus, once characteristics are identified, the second step of the approach develops the operating model and performance objectives.

The operating model is the general design of the supply chain in terms of from where goods will be sourced, made and delivered, and includes manufacturing postponement, offshoring and outsourcing strategies. It needs to enable the characteristics from step one, yet does not have to be unique. Walmart, for example, runs a competitive retail supply chain with traditional goods flow: suppliers to regional warehouses to stores. However, many supply chains uniquely leverage e-commerce. For example, Dell started by eliminating brick-and-mortar merchandizing and sold by phone and the Website. Cisco Systems ran a virtual supply chain in which most manufacturing and logistics functions were outsourced, with Cisco rarely handling physical goods.

Developing a balanced set of performance objectives/metrics is contentious. Most demand-side management objectives will be resource and asset-intensive as well as costly; while supply-side objectives will be opposed to

them. Therefore, a balance between objectives needs to be negotiated, along with any increase in revenue to cover any needed additional supply chain costs.

In an earlier column, I detailed a “triangular framework” used to balance objectives/metrics. It is predicated on the fact that a supply chain objective is one of three types: efficiency, asset utilization and customer response. The position of a point in the triangle represents a balanced focus among competing objectives. In addition, focused objectives are targeted to be “best” among competing companies, while non-focused ones are just average, “peer” performing. A point close to an edge or corner is meant to depict that those types of objectives will be focused on in order to be competitive. So if a supply chain is focused on efficiency to maintain competitiveness, the point is close to that corner of the triangle; if it is more focused on customer response, it is close to that corner.

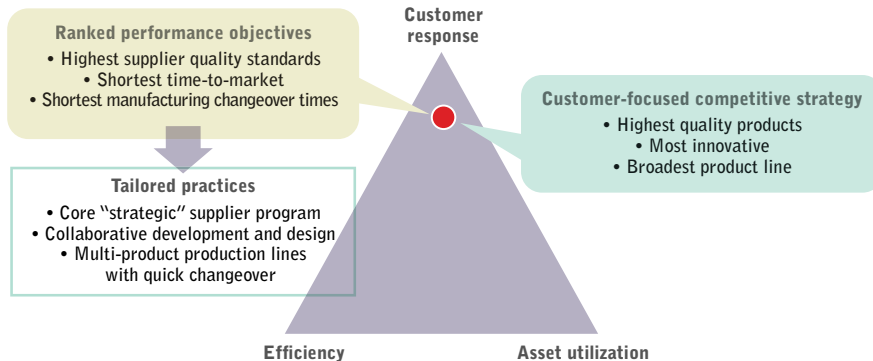
The triangle helps managers visually set performance objectives directly aligned with the competitive strategy. They discuss the trade-offs between objectives, establish their focus and then set metric targets. For example, if seven key performance objectives are identified, three of them might be focused/targeted to be best, while the remaining non-focused ones just require average performance.

**STEP 3: Tailored practices**

The fourth characteristic of an excellent supply chain is that it focuses on a few tailored business practices that reinforce each other to support the operating model and best achieve operational objectives. Thus, once objectives/metrics are developed, the third step of the approach is to develop “tailored” practices aimed directly at achieving “best” operational performance objectives. To provide a surgical focus toward achieving performance objectives, only a few tailored practices should be developed. Michael Porter discusses Activity Systems that foster competitiveness in “What is Strategy?” an article in the November-December 1996 issue of the

FIGURE 3

**Aligned supply chain design for an illustrative company with a customer-focused competitive strategy**



Source: Larry Lapide

*Harvard Business Review.*

Practices should fit, be reinforcing and be cross optimized. They are fit and reinforcing if they make sense together by not competing against each other. For example, one should not be aimed at maximizing product availability while another is aimed at minimizing inventories. They should be cross optimized to work together to enhance similar objectives so that performance maximization follows a “1+1= 3, not 2” mantra.

Figure 3 depicts a strategically aligned supply chain for an illustrative customer-focused company (sans an operating model). Note that performance objectives and tailored practices are aligned to directly enhance competitive strategy elements.

**Lessons learned**

I learned valuable lessons using this approach with companies. While defined straightforwardly, it is not linear, involving the frequent revisiting of prior steps. This happened, for example, when a company didn’t have a defined corporate competitive strategy. The strength of the approach was that it provided a language for discussions during each step. Another issue was getting agreement on focused performance objectives because most managers wanted to work in “best” performing operations. Lastly, when assessing a company’s current position in the triangle, managers inflated the customer-response focus. However, companies like Walmart have minimal

focus on customer-response because customers don’t want to pay for frills. So, it was important to recognize that focusing on customer-response assumes the company is spending lots of money on customer facing versus back office operations. (Think Best Buy versus Walmart store experiences.)

Managers who want to assess whether their supply chains are (or need to be) competitive should consider the approach. However, be pre-warned: Because a competitive supply chain strategy

needs to be developed collaboratively among supply, demand and financial managers, it will likely take many months to muster buy-in. After accomplishing this, the work isn’t done. Three important demand management (i.e., supply-demand matching) processes also need to be implemented: customer segmentation and service; sales and operations planning (S&OP); and order promising and fulfillment processes.

**III. Insights**



**have often researched,** spoken and written about the sales and operation planning (S&OP) process, especially addressing supply chain manager issues. Speaking before supply chain audiences, I point out that this “matching of supply and demand” planning process has been a major focus of mine because, before joining the supply chain community, I started my career on the “dark side.” Many in the audience smile when I ask: “What do I mean by that?”



## My demand-supply perspective

Most assume that I came from sales. Actually, for the first 15 years of my career I was in marketing. I point out that too many in the audience don't really know or care about the difference between the marketing and sales functions because "all those managers complicate things for supply chain folks, making our jobs harder." But, there is a difference. A sales rep is responsible for selling the products a company has today, while a marketing manager focuses on promoting products and ensuring that a company has products to sell in the future. Thus, marketing is a strategic function. In the S&OP process, sales offers valuable input about short-term revenues, while marketing is more knowledgeable about the long-term.

I began my career in supply chain management (SCM) in 1990. I was lucky to be involved during its heyday. SCM evolved over time by integrating a variety of supply-side silos within a company, including the warehousing, transportation, inventory management, manufacturing, procurement and (sometimes) the customer service functions. However, one of the most important integrations rarely happened. Often there was a chasm between supply-side managers (e.g., in manufacturing/operations, logistics, supply chain, procurement and merchandize planning) and demand-side managers (e.g., in marketing, sales, merchandizing and customer service).

That chasm still exists today. My experience shows that managers from each side think differently and rarely—if ever—communicate. There has always been (likely throughout history) a chasm between these functional groups; much of it comes from conflicting objectives. Supply-side managers are largely goaled to minimize operating costs and inventories, while it is the job of demand-side managers to maximize market share and revenues. Historically there has been a dearth of routine demand-shaping processes, enabled by joint decision-making among the groups, and aimed at optimizing profitability and other corporate goals.

Yet, demand management (DM) processes that formally enable supply- and demand-side managers to collaborate over time are necessary for a supply chain to be competitive. Without a formal, routine and joint decision-making process, a supply chain organization is not really playing a major role in executing a corporate strategy—even if it is strategically aligned.

## Demand management needed

Some time ago, I assembled a Demand Management Solutions Research working group of sponsoring companies to research DM processes. The group routinely met over a two-year period and defined DM as "the matching of supply and demand over time—in real time and during planning." The major research question it addressed was: What strategies, principles, methods and solutions can be leveraged to optimally match supply and demand over time? The group recommended three major collaborative processes a company should have to jointly match supply and demand over time: the long-term, medium-term and short-term (including real-time).

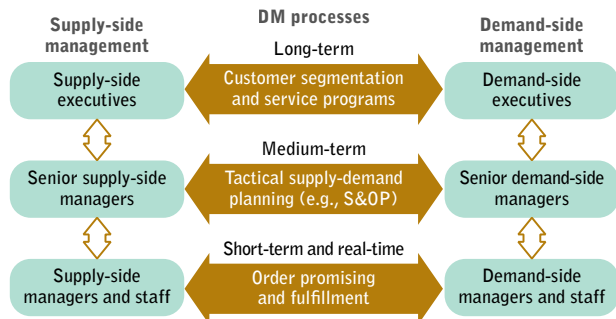
Figure 4 is a visual display of the recommendations. It shows that the three processes should work to bridge the supply-demand chasm as well as to integrate three levels of management: executives, senior managers, and lower-level managers and staff. Meetings to collaborate and make decisions regarding the matching of supply and demand for each of the time frames involve cross-functional, peer-level managers who are empowered to make decisions at their level by higher-level management.

## Long-term matching

Demand-side managers often work directly with customers to tailor service policies without sufficient input from supply-side managers. However, customer terms and conditions and priorities, such as those dealing with special packaging and delivery requirements, co-managed inventory programs, and the sharing of downstream data, greatly affect supply-side operations and long-term customer profitability. Demand-side managers often unilaterally develop customer segmentation strategies based solely on a customer's revenue while disregarding factors such as profitability and the strategic importance of a customer. Left to their own devices, demand-side managers will tend to give away the store to a company's largest revenue customers. This is not always optimal. For example, how often have you heard: "Walmart gets all the service they demand whether our company loses money or not?"

FIGURE 4

**DM bridges and enables cross-functional collaboration at all levels**



Source: Larry Lapide

The process of setting service policies and segments represents the long-term aspects of supply-demand matching because they set the stage for how demand will take place and the supply resources needed to service customers in the long-term. This process offers opportunities to jointly optimize future supply and demand, and should be an important area for supply-side managers to get involved in to play a major role when competing.

**Medium-term matching**

S&OP and merchandize planning and allocation (in retail) represent medium-term DM processes that should collaboratively balance tactical supply and demand plans. These and other named supply-demand planning processes represent the medium-term aspects of supply-demand matching because they set the stage for how demand will take place and the resources needed to supply customers in the medium term—often on a monthly or weekly basis.

These processes are becoming more prevalent. For example, S&OP has grown in use over the past two decades as businesses globalized. The processes are “linchpin” processes, if the matching of supply and demand is done in accordance with the strategic goals of a company, because the process then ties to day-to-day operations to strategic intent. In the case of a competitive and strategically-aligned supply chain, the matching of supply and demand should be aimed at “executing

well against the balanced set of operational performance objectives/metrics” developed during the strategic alignment process discussed above.

**Short-term/real-time matching**

One of the functions of customer service and sales reps is the matching of supply and demand in real time. As orders come in, they routinely quote customer delivery dates. Accurate estimates of these are needed to properly set each customer’s expectation to a promise that can be kept.

Estimating promise dates represents an opportunity to optimally match supply and demand in the short-term/real-time. Accuracy ensures efficient order fulfillment, with minimal expediting. Accurate quoting requires planning out how each order will be filled and “pegging” supply to it; by assessing what current and future supply will be allotted to fill the order (in the context of other expected future demand, as well). In addition, customer priorities need to be considered when scarce supply needs to be allocated.

The process of setting promise dates and planning an order’s fulfillment represents the short-term aspects of supply-demand matching because it sets the stage for how both available and future planned supply will be used to fill customer orders in the short-term. This DM process offers opportunities to jointly optimize supply and demand, however, optimized matching is often not the norm. Either orders are filled on a first-come-first-served (FIFO) basis or it is the sales rep that screams the loudest who gets the earliest promise dates for his or her favorite customers. Similarly, rather than optimally planning order fulfillment, operations managers often quote standard lead times, leading to promise dates that are not necessarily optimal. In order to enable a competitive supply chain, joint decision-making is necessary.

Generally, I believe that optimizing the three DM processes represents the next phase in the advancement of SCM because it enables “commercialized” supply chains, making them competitive.

If you want an excellent supply chain organization, align it strategically to your company’s competitive strategy, and then implement DM processes to enable the supply chain organization to play a leading role in being competitive. In doing so, supply-side managers will be helping demand-side managers win business, so that both groups can celebrate those wins together. ∞

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# GLOBAL ECONOMIC OUTLOOK

## Subject to Change with

# TRUMP PRESIDENCY

**The election of Donald Trump as the next U.S. president has the potential to upset the established global order and change the economic outlook.**

BY PATRICK BURNSON

**ECONOMISTS AT IHS GLOBAL INSIGHT** contend that the election of Donald Trump as the next U.S. president has the potential of upsetting the established global order and changing the economic outlook.

“If protectionist policies are pursued, growth in global trade and real GDP will likely be slower and inflation will probably be higher—a recipe for stagflation,” contends IHS Chief Economist Nariman Behravesh. “If more pragmatic and pro-growth policies are pursued, then economic growth, inflation and interest rates will all be higher—an outcome that will benefit most but not all economies.”

IHS Global Insight believes the latter scenario is more likely than the former. In the United States, there will be heightened expectations of more growth, inflation and hikes in interest rates—and a stronger dollar.

“A Trump presidency will likely mean sizeable tax cuts, rollbacks of regulations and tougher stances on free trade and immigration,” Behravesh argues. “The U.S. economy is in reasonably good shape and on track to grow 2.0% to 2.5% in the coming year. Assuming President-elect Trump follows through with more fiscal stimulus, near-term growth could be boosted, but likely not until late 2017 or early 2018.”

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The U.S. election outcome makes the outlook in the EU even murkier, however. According to Behravesh, Brexit and political uncertainty in Europe had already clouded Europe's outlook.

“The U.S. election could embolden right-wing populist parties in Europe and make the Brexit negotiations more complicated,” he says. “On the other hand, UK politicians may take comfort in Trump's promise of closer ties. IHS Global Insight expects growth in the U.K. and Eurozone to soften next year because of increased political risks.

IHS Global Insight senior research director Sara Johnson, notes that for Japan a Trump presidency is a “mixed bag,” but mostly positive. “The major risk for Japan is a potential trade war,” she says. “Barring this scenario, Japan could be a net beneficiary of Trump's pro-growth policies, which would boost exports throughout Asia.”

Yet, the expected demise of the Trans-Pacific Partnership (TPP) will hurt Japan, Johnson adds. The recent rise in the dollar has reversed some of the damage from yen appreciation in the past year and could help to pull Japan out of deflation. Real GDP surprised on the upside in the third quarter, rising at a 2.2% annual rate.



According to Johnson, China may be a potential long-run beneficiary of the Trump era, but remains in “crosshairs” for now. “The Trump win comes at a challenging time for China,” she says. “Real GDP growth held at 6.7% year-on-year in the third quarter but is likely to slow during the coming year. Meanwhile, the central bank is trying to manage a gradual depreciation of the renminbi, which has fallen to its lowest level against the dollar since 2008.”

Throughout his presidential campaign, Trump criticized China for its trade and exchange rate policies. While friction

over these issues will persist, an all-out trade war seems unlikely, Johnson says. And if the United States walks away from the TPP (a free-trade agreement that excludes China), it could open the door for China to develop its own Asian free-trade area.

Even slower trade growth and falling exchange rates is forecast for other emerging markets, IHS Global Insight economists conclude. They contend that any overt or threatened protectionism would slow world trade growth and hurt regions counting on export-led growth.

Economies with large current-account deficits or high levels of dollar-denominated debt are vulnerable to dollar appreciation, including Brazil, India and Indonesia. Mexico has been a main target of the U.S. president-elect's trade agenda. Not surprisingly, the Mexican peso has been one of the hardest-hit currencies, before and after the U.S. election.

### **M&A path to growth**

"Industrial company executives expect flat capital expenditure, increased cost cutting and a focus on 'bolt-on' mergers and acquisitions (M&A) as the path to growth in 2017." That is the takeaway from a survey recently released by Baird, an international capital markets, private equity and asset management firm.

The survey, which polled industrial executives in conjunction with the 46th annual Baird Global Industrial Conference, was designed to identify what company managements believe are the key drivers and threats to profitable growth in the year ahead.

Forty-three percent of executives say they are anticipating flat capital expenditures in 2017 and 80% anticipate cutting costs. Respondents also ranked "bolt-on" acquisitions as their top capital allocation priority over the next 12 months and 57% view energy as the most promising end market, findings underscored by executives' comments at Baird's conference, held Nov. 8-10.

"M&A is clearly front-of-mind as an important source of growth in the Industrial sector," Jon Langenfeld, head of global equities at Baird, said at the time. "Deal pipelines appear healthy, while valuations remain elevated in antici-

## **U.S. supply chain managers may expect higher growth, inflation and interest rates—and a stronger dollar.**

pation of longer-term end market recovery."

While survey respondents expected geopolitical developments to have less impact on business over the next two years than wage inflation and commodity prices, presenters at Baird's conference did express that a conservative U.S. government could support a continued tailwind for infrastructure spending.

"The U.S. presidential election took place the first day

of our conference, which afforded the opportunity to gauge real-time management sentiment regarding the outcome," Langenfeld said. "Aside from the election, commodity headwinds are dissipating while construction commentary remains positive. Overall, we remain cautiously optimistic about the growth outlook for the Industrial sector."

From a geographic standpoint, the majority of those surveyed expect growth to be flat across the globe in 2017. The remaining respondents expect growth to accelerate in East Asia (33%) and North America (32%), and growth to decelerate in China (24%) and Western Europe (22%).

"It's understandable that survey respondents indicated some apprehension about China given continued expectations for slowing growth," Langenfeld observed. "The China commentary at Baird's conference was somewhat mixed, with solid recent trends but caution regarding sustainability."

Longer term, respondents expect higher machine connectivity, commonly referred to as The Internet of Things (IoT), to have the biggest impact on the industrial market over the next three to five years, followed closely by changing demographics because of aging in the developed world.

### **Confidence lagging**

More worrying, perhaps, is the trend signaled by the Stifel Logistics Confidence Index. For its 14th consecutive month there's been negative confidence with current numbers, leading Stifel to suggest that this will continue into 2017.

As reflected by the performance of the Index, global trade remains at a low ebb, as it has for some time. Efforts remain underway to get to grips with overcapacity in the container shipping industry, with the Baltic and International Maritime Council reporting at the start of November that containership demolition has officially reached an all-time high, with ships totaling a capacity of 500,000 twenty-foot equivalent units (TEUs) having already been scrapped this year.

Nonetheless, most of this demolition is accounted for by now-obsolete Panamax vessels, which continue to be replaced by bigger ships.

According to analysts at the London-based consultancy, Drewry Maritime Research, the next two years will witness "annual fleet growth of between 5% and 6% and many more mega vessels," though the consultancy claims the market has bottomed out.

“The one obvious bright spot at present is the performance of air freight,” noted Nick Bailey, managing consultant with the Transport Intelligence (Ti), which is the source for the following information. “While officials at The International Air Transport Association (IATA) have been at pains to stress that the long-term condition of the industry is not good, the organization did report that freight volumes increased by 6.1% year-on-year (measured in freight tons in September, exceeding a capacity increase of 4.7% over the same time frame,” he reported.

This tallies with the results of the Situational Index for Air Freight; the one bright spot in the Stifel Logistics Confidence Index published last month, which recorded an improvement in the present market. Ti further reported the following.

For November, the Air Freight Index amounted to 49.3, having fallen by 0.6 points against the previous month’s score of 49.9. Stacked against the results for prior years, the Index score was 0.4 points greater than in November 2015, but 7.6 points below the total measured in November 2014.

Change in the Air Freight Logistics Situation Index was positive, with an overall month-on-month gain of 0.7 points to 47.4 recorded. Of the lanes that made up this score, Europe to Asia was flat month-on-month, with an unchanged total of 39.3, but this was the exceptional result. Europe-to-U.S. improved by 0.4 points to reach 48.4 in November, whilst the Asia-to-Europe and U.S.-to-Europe lanes each noted a month-on-month points gain of 1.2, which took them to 48.4 and 53.5, respectively.

The Air Freight Logistics Expectations Index remained above the neutral 50-point mark, but fell by 1.9 points month-on-month to 51.1, offsetting the gains noted in the Present Situation Index. U.S.-to-Europe was the sole lane to improve month-on-month, with a 0.1 point gain to 56.1 for November. The Europe-to-Asia lane declined by 0.9 points to 44.4. Meanwhile, Asia-to-Europe noted the deepest decline of the lanes, falling by 3.6 points to 50.9. Similarly, Europe-to-U.S. lost 3.0 points, totaling 53.3.

The Sea Freight Index recorded an overall total of 47.4 for November 2016, having lost 1.6 points against the October result. Compared to November 2015, the Index was up by 1.3 points, however, the score was 13.6 points below that recorded in November 2014.

The Sea Freight Logistics Situation score declined

by 1.3 points month-on-month, to 44.8, marking a departure from the preceding five months of consecutive increases. The Present Index score of the Europe-to-U.S. lane was the sole month-on-month gainer for the entire Sea Freight Index in November, rising by 1.1 points to 46.4. In a marked contrast, Europe-to-Asia contracted by 3.3 points to 36.3. Asia to Europe was down by 1.4 points to 50.9, while U.S.-to-Europe

## **Industrial company executives expect flat capital expenditures, increased cost cutting and a focus on “bolt-on” M&A as the path to growth next year.**

declined 1.5 points to 45.2

Sea Freight Logistics Expectations fell by 1.9 points month-on-month, to a neutral score of 50.0. The Index was characterized by declines across all lanes, led by Europe-to-U.S., which fell by 3.6 points to 49.2. Furthermore, the US to Europe lane contracted by 2.3 points to 49.3, while Asia-to-Europe was down by 1.2 points to 53.7. Europe-to-Asia recorded the slightest month-on-month decline of the lanes, of 0.5 points, and totaled 47.4.

Each month, respondents to the Stifel Logistics Confidence Index survey are asked a unique, “one-off question,” John Manners-Bell, Ti’s CEO, explained in a report. “For this month’s one-off question, we asked Index respondents whether they saw global transshipment hubs to be more or less likely to suffer from declining worldwide trade than origin or destination hubs,” he reported.

Nearly half of survey participants (48.6%) stated that all hubs would suffer equally, though the second largest group, with 32.9% of the responses, argued that yes, transshipment hubs will suffer more than both origin and destination hubs.

“Meanwhile, 8.6% believed that origin hubs will suffer the most, whereas 5.7% believed that destination hubs would in fact take the biggest hit,” Manners-Bell concluded. “The remaining 4.3% of participants chose other responses, including the view that hubs may actually experience growth.” ☺☺

# SUSTAINABLE DISTRIBUTION AT REI







**Specialty outdoor retailer REI's new distribution center brings together the next generation of materials handling and sustainability into one facility.**



**T**HE FIRST INKLING THAT REI'S 393,000 SQUARE FOOT, \$73 million distribution center in Goodyear, Ariz., is different comes when you walk through trails to get from the parking lot to the facility entrance. It's no accident that it's the same experience that a cooperative member might get visiting REI's flagship store in Seattle that connects members to the outdoors experience.

The second hint comes when you notice that the break room is connected to a botanical garden, where employees can walk through zones of Arizona fauna or play a game of horseshoes. REI also opens 25% of the second floor space for community use.

Or, you might notice the rooftop solar array, which provides the power for a Net Zero Energy facility that leaves no trace as REI would teach in it's own outdoor school. Or, walking the

DC floor, you might feel a gentle movement of air from a cooling system that maintains a relatively constant temperature from floor to ceiling while saving a millions gallons of evaporated water per year, despite outside temperatures that can reach above 115 degrees. Touches like these are among the factors that led to the building becoming the first distribution facility in the United States to earn LEED Platinum certification and Net Zero Energy.

BY BOB TREBILCOCK, EDITORIAL DIRECTOR

**REI's Goodyear, Ariz.  
distribution center.**



The goods-to-person picking station is fed by a shuttle system. Here an associate is picking from the donor tote to one of four store totes.

And then, there's the actual order fulfillment processes. After all, this is a distribution center. Dubbed "one-touch production," donor totes are automatically delivered by a mini-load shuttle system to a goods-to-person workstation and touched just once to fill store replenishment and direct-to-consumer (DTC) orders. "It is the first time shuttle and pocket sortation technology have been brought together at one goods-to-person workstation for true omni-channel fulfillment in a high-velocity pick environment," according to Rick Bingle, REI's vice president of supply chain, and Bill Best, divisional vice president of supply chain operations. And, it's efficient. "We're seeing combined picks and puts in 6 seconds," Best says.

Beyond productivity, it is REI's design approach that sets a new standard for collaborative and sustainable distribution. "We hope this facility will be a model for the industry and wait to see who will build upon what's been done here," Bingle says.

How REI brought together brand recognition, sustainability, employee and community engagement, and leading edge materials handling technology in one facility is a story as unique as the building—and perhaps different from the story we would typically tell in *Supply Chain Management Review*. But, it's one worth telling.

### The network

As with so many retail DCs these days, this initiative began with a network design study. Since its founding in 1938 as the Recreational Equipment Cooperative to share quality outdoor gear with like-minded climbers and outdoor enthusiasts, REI today manufactures and distributes its own line of outdoor equipment and apparel along with other quality brands to some five million cooperative members through 130 stores and on the Internet.

In 2012, the cooperative began asking the question of how to add capacity to the supply chain to address growth and meet the service level expectations of its customers, especially those ordering DTC. At the time, REI had two DCs: one in Sumner, Wash., and one in Bedford, Pa. "We wanted to be able to meet same-day and two-day service levels for the Southwest, leveraging ground services to protect our carbon footprint," says Bingle. "The network study showed that we could be operationally cost neutral and save money on logistics expense by putting a new facility in the Southwest."

Cost, however, was only one consideration: It was also important that an additional location have no impact on REI's carbon footprint because sustainability is a core commitment. REI was

one of the first retailers to demand that ocean freighters detail their carbon footprint by ship. “From the network study, we knew that we could locate the facility within a 300-mile radius of Las Vegas and do no harm,” says Best. “That opened up potential locations in Southern California’s Inland Empire as well as the Greater Phoenix market. When we analyzed all of the costs; Phoenix was the best location.”

Once the location was determined, the actual building had to satisfy four design tenets, according to Bingle and Best. Those included:

**Connect to the REI brand.** The building and its surroundings should deliver the same experience to employees or community organizations using the building as an REI store delivers to a member customer. The REI brand should be experienced and felt.

**Build the REI culture and values.** Sustainability, the REI culture and values such as authenticity, quality, purpose, respect, integrity and balance are central to REI’s mission. Business is done differently at REI, and this should be evident to the DC’s employees and partners.

**Differentiate in the community through stewardship.** REI believes in giving back to the communities where its employees work and live. Employees are encouraged to participate in community activities. What’s more, 25% of the office space could be made available for community activities. As an example, the local city council inquired about holding a retreat in the building. REI believes it collectively improves the outdoor spaces in its communities and that belief is put into action through both financial and volunteer support.

**Build to the highest currently achievable standard of sustainability.** The goal from the start was to be energy net neutral and to become the first distribution facility in the United States to also achieve LEED Platinum certification. At the same time, it was important to do that while also delivering “some pretty dramatic ROI,” says Bingle. “We do not want to be viewed as tree-huggers with no business outcomes.” That extended to creating solutions, and a facility, that might influence the retail distribution industry to pause and consider sustainability beyond what is typically done.

With those four tenets in place, the REI team began to look for a design and solutions that would deliver those results.

## The challenge

In some respects, the design process began in 2013 with a challenge to Chris Castaldi, vice president of sales for W&H Systems, now part of DMW&H. REI was already a customer—W&H had designed the Pennsylvania facility prior to Best and Bingle joining REI. That is a fairly conventional facility, so the



The associate can simultaneously fill direct-to-consumer orders from the same donor tote. Items are placed in the pocket sorter and then routed to a packing station.

challenge presented to Castaldi was to come up with something new and innovative for omni-channel distribution, or, as Castaldi recalls it, for W&H “to raise its game.”

The four design tenets were re-imagined as design goals for the materials handling processes. The vision was to create processes that were efficient, productive and easy to learn and execute because one of the goals was to provide employment opportunities to individuals with special needs. Reducing the number of times a product was touched was paramount—Bingle was already using the phrase “one-touch production” in early meetings. “At the time, omni-channel facilities had separate work areas for direct-to-consumer, store replenishment and wholesale distribution, even if they were working from shared inventory,” Castaldi says. “The best practice was to do a put, sort it to a put wall or a tilt tray sorter and then aggregate the orders after that. There was always another touch, meaning that you went to a storage location up to three times to fill orders for all three channels.”

What Bingle and Best wanted was a technology, or combination of technologies, that would allow an order associate to pick for all channels when presented with a donor tote. The question was: What technology will work? Castaldi believed



In the receiving area, associates verify the count of incoming merchandise. Items are then decanted into storage totes.

he saw the answer at the Hannover Fair in Germany in the spring of 2013, where he came across a pocket sorter. The technology was from Durkopp, a solution provider that is now part of Knapp Logistics. Castaldi, Bingle and Best subsequently visited a DC using the technology in Germany. In that application, a mini-load system was delivering totes to a workstation where an associate was loading the pockets with items for two different channels. However, there was a second touch because the pockets were sorted by channel to different processing areas, as in other omni-channel facilities. As Castaldi recalls, they all came to the same conclusion: Why not fill the stores and DTC at the same workstation so we only touch it once?

Bingle had an additional thought. Each time the order selector removed an item from a donor tote, the associate had to grab a bar code scanner to verify the item and then put the scanner down before putting the item in a pocket, wasting valuable time. Bingle asked an employee how often there was an error. “Never,” she said. It then occurred to Bingle that with a disciplined and accurate receiving process, you could eliminate the bar code scan and gain back those seconds on each pick.

They left with an outline of a solution. The concept was presented to Josef Mentzer, Knapp’s U.S. president and CEO. The idea was to use Knapp’s shuttle technology,



Pallets and cases are stored on shelves and pallet rack in the reserve storage area.

Order Storage and Retrieval (OSR), to deliver donor totes to a specially designed workstation. There, an associate, directed by lights and a visual display, would pick items from a donor tote to shipping containers for store replenishment and to a pocket sorter for DTC orders: one tote, multiple channels, no bar code scans.

It was a tall order. In part that was because Knapp had never integrated shuttles, pocket sortation and multi-channel fulfillment at one workstation before. “We’re not a company that says yes to everything and then can’t deliver a solution,” says Mentzer. “At the same time, if a customer really pushes for something, we pride ourselves on being innovative. REI asked twice and ultimately we saw this as important for our customer. I think it’s a great example of complexity made simple with a customer-facing innovation.”

### Design charrette

Putting together a new approach to automated order fulfillment was challenging enough, but Castaldi and Mentzer add that whatever they did had to meet REI’s tenets for a sustainable, ergonomic solution, powered by



## Sustainable design

Craig Porter, the president of The Renaissance Companies, has built distribution centers in Phoenix for some of the country’s best-known companies. Still, he says, the REI building stands out.

“I can show you facilities with all kinds of technology, I’ve done facilities that were designed to show brand recognition, and I have done a LEED silver office building,” says Porter. “What made this project unique is that it brought together a high degree of technology, brand recognition and REI’s principals as a steward of the environment in one facility—and on steroids. Those three things aren’t usually addressed as a whole.”

The HVAC system is an example of REI pushing its partners to meet its goals for “sustainable design.” The challenge was two-fold. First, if the building was going to be Net Zero Energy—producing all of its energy requirements—it would need a solar array of about 340,000 square feet and the building is 390,000 square feet. The most cost effective way to do solar is to install it on the roof, but that didn’t leave enough space for the number of roof top HVAC units needed to cool the building. And, maintaining a relatively constant temperature from the floor level to the top of the shuttle system was important because some of the items REI sells, like chocolate power bars, could melt in the Phoenix heat.

As with the materials handling suppliers, Rick Bingle, REI’s vice president of supply chain, and Bill Best, divisional vice president of supply chain operations, challenged Porter’s team to come up with an innovative solution that would meet all of their requirements. After some research, Porter came up with an air rotation cooling system that had never been installed in Arizona. The system uses one self-contained air chiller to cool air and a series of four large air handlers installed inside the building to circulate the air. The air handlers suck in the chilled air at the ground level and blow it out at the ceiling level so that the air is constantly rotating. “If you’re in there in August, you feel a soft flow of air,” Porter says. What’s more, the temperature varies by only 5 degrees from the ceiling to the floor, allowing storage of even temperature sensitive products anywhere in the shuttle system.

Best points out that the cooling system is a closed loop. “We’re cooling, recycling and re-cooling the air in a non-evaporative system that saves a million gallons of water a year.”

While the air conditioning system cost \$1 million more to install than a conventional system, it also requires less energy, allowing for a smaller solar array than was originally planned. That saved \$500,000 on the solar installation, delivering a two-year ROI on the extra money spent on air conditioning. “We were challenged to design a unique system for a unique project. That was the most interesting and fun part,” Porter says.

Ultimately, Bingle believes this project illustrates the value of the design charrette process. “How we air conditioned the building was directly connected to how we built the solar array,” he says. “You don’t have those outcomes if you don’t have a design process where the sustainability team, the contractor and the system designers are talking to the HVAC people.” ☺☺



Green donor totes are routed to and from the shuttle system while pouches from the pocket sorter accumulate before release to a packing station.

solar and able to accommodate people with special needs in some processes. “Power consumption was an especially big topic during our discussions, and that is unusual because industrial power is generally cheap,” Mentzer says. “It’s not usually a driving force with a customer.”

And, several early designs were rejected because they required too much power.

To pull this all together, Bingle and Best employed a design charrette process. Launched in February 2015, the design charrette consisted of two sets of three-day meetings that brought together all of the project stakeholders to map solutions and explore energy conservation methodologies. That wasn’t just DMW&H and Knapp, but the contractor (see sidebar) and other stakeholders who would not typically spend a lot of time together. Best describes it as collaborative design. “In a typical project, the builder finishes and hands off to the system integrator and so on until they go live,” says Best. “Here, we had everybody look at the physical and technical design in a safe environment where we could identify and address blind spots.” To meet those goals meant “you had to go at it from a unique perspective,” Mentzer adds.

Best likens it to a marathon. “You don’t run 26 miles in a marathon,” he says. “You put in 400 practice miles before the race. And, we all know that if you don’t put in those practice miles,

you pay for it in the race. That’s why we put in so much rigor on the front end of this.”

Perhaps the two most visible outcomes of the design charrette were the process of filling multiple channels from one goods-to-person workstation—Knapp has filed an application for a patent on the solution naming Bingle and Castaldi as contributors—and the unique approach to air conditioning in the facility, which also resulted in significant savings in the solar array. In the end, Bingle adds, “we yielded to the expertise of everyone in their industry.”

Following the charrette, REI broke ground for the facility in April 2015 and the building was operational in July 2016; it earned LEED Platinum certification in October 2016. Since going live there have been tweaks, like adding dividers to the storage totes to optimize variability in the slot demand across the 124,000 storage locations provide in the shuttle. Most importantly, REI believes the process achieved its four key design tenets.

Looking back, everyone from the builder to REI, DMW&H and Knapp believe that they have achieved a milestone that can serve as a model for other distributors—especially those with an eye toward sustainability. “We open source sustainability so that others can learn from what we’ve done,” says Bingle. “That’s part of our mission and purpose.” ☺

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MANAGEMENT REVIEW

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LeanLogistics is a global Solutions provider of a SaaS transportation management system (TMS) applications and supply chain services enabled by the industry's largest transportation network.

LeanTMS® delivers complete transportation planning, execution, settlement and procurement, as well as visibility and business intelligence, to improve transportation processes, increase efficiency and reduce costs. LeanTMS enables shippers to scale infrastructure and business processes while gaining efficiencies to improve service offerings. Furthermore, the global capabilities of LeanTMS ensure compliance by providing complete supply chain visibility and access to industry data to meet multi-regional data regulations and guidelines.

For companies outsourcing their transportation management process, Managed Transportation Services utilizes LeanTMS together with a team of experienced logistics professionals to create the optimal solution for companies seeking to outsource transportation functions.

The LeanLogistics Transportation Network empowers shippers, carriers, and other participating members to reduce costs, and gain complete visibility.

LeanLogistics consistently ranks among the top logistics solution providers and continues to win numerous awards for customer service. LeanLogistics' customer satisfaction surveys consistently result in 90+ percent of clients indicating plans to renew or expand relationships, as well as willingness to provide referrals for LeanLogistics.

# COMPLETE SUPPLY CHAIN VISIBILITY

**BUILDING BETTER SUPPLY CHAINS TOGETHER**

Contact [solutions@leanlogistics.com](mailto:solutions@leanlogistics.com).

LeanLogistics | 1351 Waverly Rd. Holland, MI 49423 | 616.796.7631 | [leanlogistics.com](http://leanlogistics.com)





## Saia LTL Freight

*Ray Ramu, Chief Customer Officer*



[www.saia.com](http://www.saia.com)

### **A passion for people**

At Saia LTL Freight, we've been putting people first for more than nine decades - from our loyal customers to our exceptional employees. We believe that the most effective way to achieve our goal of customer-focused performance is to invest in our team.

### **Delivering for our customers every day**

We're dedicated to delivering the ultimate customer experience. That means consistent on-time pickup and delivery, superior customer service, claims-free shipping and accurate billing. Our customers are at the center of everything we do. That is why customer satisfaction is a part of everyone's job at Saia.

### **Ensuring a higher standard of quality**

As a company, we continue to evolve and strengthen our position in the marketplace - another reason we're so excited about our expansion into the Northeastern United States. Our commitment to providing outstanding customer service is reflected in how we measure our performance and is based on six key customer service indicators, not just a single measure of service.

To learn more about Saia LTL Freight, visit [www.saia.com](http://www.saia.com) or call 1-800-765-7242.





## Avoid unnecessary risks with your supply chain, your business and your reputation.

*Nobody understands transportation and logistics like UPS®. And while you've probably never thought of a UPS company for financing and insurance services, our global supply chain expertise uniquely positions us to help protect companies from risk and allows them to leverage cash in their supply chains. Insurance companies and banks can't say that.*

**UPS Capital**  
35 Glenlake Pkwy NE, Atlanta, GA 30328  
upscapital.com | 1.877.263.8772  
twitter.com/upscapital

### Protect your goods

Why rely on carrier liability, generic policies or self-insurance when you can get peace of mind through real supply chain insurance protection? Not to mention a hassle-free claims experience.

- Cargo Insurance
- Flexible Parcel Insurance (including multi-carrier coverage)
- UPS Capital Elite™ for High-value Goods: Parcel Pro™
- UPS Capital Elite™ for Vintners
- UPS Proactive Response® Secure

### Improve cash flow

Growing a business can put a huge strain on cash flow. UPS Capital offers financing solutions to help conserve cash and leverage offshore-warehoused or in-transit inventory to help you meet day-to-day business costs and expand to new markets.

- Small Business Financing
- UPS Capital Cargo Finance®
- Global Asset-based Lending

### Reduce risk and get paid faster

To help you reach more buyers with confidence, we offer payment products and services that can reduce your exposure to credit risk, speed up your cash flow, and minimize customs roadblocks.

- Trade Credit Protection Services
- Continuous Customs Bonds
- C.O.D. Payment Options

### Securely accept payments

Customers want the flexibility to pay the way they want to pay. You want to boost sales and build loyalty. Our fast, secure, reliable payment solutions can help you do both.

- UPS Capital® Merchant Services
- Credit Card Fraud Protection
- Alternative Payment Options

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# Executive Guide

to

## Supply Chain Resources





# Transportation/ Logistics Services



The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.



## AIRFREIGHT SERVICES



Company Name	Phone Number	Company Name	Phone Number
Air Canada Cargo	800-688-2274	Nippon Cargo Airlines	718-632-6500
Air France KLM Cargo www.afklcargo.com	800-556-9000	Panalpina Inc.	718-310-1000
Air Freight.Com www.airfreight.com	800-486-3780	Singapore Airlines Cargo	718-656-1010
American Airlines www.aacargo.com	817-355-6800	Southwest Airlines Cargo www.southwest.com	800-533-1222
Amerijet International, Inc. www.amerijet.com	800-927-6059	Span Alaska www.spanalaska.com	800-257-7726
Associated Global Systems	516-627-8910	UniGroup Logistics www.unigrouplogistics.com	855-605-8080
Cargolux Airlines International S.A.	561-988-1868	United Cargo	800-822-2746
Cathay Pacific Cargo www.cathaypacificcargo.com/	800-628-6960	United States Postal Service	800-275-8777
Columbus Regional Airport Authority www.columbusairports.com		UPS Air Cargo www.ups.com/aircargo/	800-535-2345
DHL	800-225-5345		
Eva Air Cargo	718-995-5220		
FedEx Express	800-463-3339		
JAL Cargo	718-656-9801		
K.W.E. Global Logistics	800-275-4045		
Korean Air Cargo	866-782-2746		
Lufthansa Cargo lufthansa-cargo.com/de_DE	800-542-2746		
Lynden International www.lynden.com/lint/	800-926-5703		
Mode Transportation www.modetransportation.com	972-447-0075		



### Yusen Logistics Americas Inc

300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800

**Toll Free:** 800-414-3895

**Email:** marketing@us.yusen-logistics.com

www.yusen-logistics.com

**Services:** Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.

## MOTOR CARRIERS

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES



## MOTOR CARRIERS



Company Name	Phone Number
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**A. Duie Pyle, Inc.**

650 Westtown Road  
West Chester, Pennsylvania 19381  
610-696-5800

Toll Free: 800-523-5020

Fax: 610-350-0406

Email: insidesales@aduiepile.com

www.aduiepile.com

**Services:** A. Duie Pyle, Inc. is the Northeast's premier transportation and logistics provider. A family-owned and professionally managed business since 1924, Pyle operates 22 strategically located Less-Than-Truckload service centers. Pyle's Customized Solutions group provides tailored supply chain solutions, including Dedicated Fleet, Brokerage and integrated Warehousing and Distribution services.

ABF Freight System, Inc.	479-785-8880
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American Fast Freight www.americanfast.com	877-608-2425
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ARC Best Corporation www.arcb.com	479-785-6000
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Averitt Express www.averittexpress.com	800-283-7488
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Cargomatic www.cargomatic.com	866-513-2343
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Crete Carrier Corp. cretecarrier.com	402-479-2000
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CRST International, Inc.	319-396-4000
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Dayton Freight Lines, Inc. www.daytonfreight.com	937 264 4060
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DB Schenker www.dbschenkerusa.com	516-377-3000
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Echo Global Logistics www.echo.com	800-354-7993
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Estes Express Lines www.estes-express.com	804-353-1900
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Express America Trucking	815-239-1652
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FedEx Freight www.fedex.com/us/freight	800-393-4585
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Heartland Express Inc. www.heartlandexpress.com	319-545-2728
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Company Name	Phone Number
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Holland www.hollandregional.com	800-456-6322
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J.B. Hunt Transport Services, Inc. www.jbhunt.com	877-452-4674
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Jevic Transportation, Inc.	888-465-3842
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Kane is Able, Inc.	570-343-5263
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**Landstar System, Inc.**

13410 Sutton Park Drive South  
Jacksonville, Florida 32224  
877-696-4507

Email: solutions@landstar.com  
www.landstar.com

**Services:** Providing transportation management solutions including: truckload, LTL, heavy haul/specialized, expedited, intermodal, global air and ocean services, cold chain, freight optimization, complete shipment visibility and carrier selection. Landstar customers have access to more than 53,000 transportation capacity providers. New Cross Border Logistics Center open in Laredo, TX.

Lily Dedicated	781-449-8811
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Lynden www.lynden.com/lint/	800-926-5703
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Moran Transportation www.morantransportation.com	847-439-0000
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NEMF	908-965-0100
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New Penn www.newpenn.com	800-285-5000
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NFI www.NFIindustries.com	866-219-7450
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Old Dominion Freight Line, Inc. www.odfl.com	336-889-5000
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## MOTOR CARRIERS

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
Pitt Ohio Express	800-366-7488
Reddaway www.reddawayregional.com	
Roehl Transport, Inc. www.roehl.jobs/corp	715-387-3795
Ruan Transportation	866-782-6669



#### Saia Inc.

11465 Johns Creek Parkway  
Suite 400  
Johns Creek, Georgia 30097  
800-765-7242

**Email:** jjump@saia.com  
www.saiacorp.com

**Services:** Offers customers a wide range of less-than-truckload, non-asset truckload, and logistic services. Saia operates 147 terminals in 34 states and is home to the industry-exclusive Customer Service Indicators and Xtreme Guarantee. Saia LTL Freight has been recognized by the American Trucking Associations Safety Management Council for its outstanding safety record.

Schneider schneider.com	800-558-6767
Southeastern Freight Lines	800-637-7335
The Reliance Network www.thereliance.com	
Transport America www.transportamerica.com	
Unyson Logistics www.unyson.com	630-271-3600
UPS Freight	800-333-7400

US Xpress Enterprises  
www.usxpress.com

Company Name	Phone Number
UTXL, Inc. utxl.com	
Werner Enterprises, Inc. www.werner.com	402-895-6640
XPO Logistics, Inc.	734-994-6600



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300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800

**Toll Free:** 800-414-3895

**Email:** marketing@us.yusen-logistics.com  
www.yusen-logistics.com

**Services:** Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.

## OCEAN CARRIERS

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES



## OCEAN CARRIERS



Company Name	Phone Number
Atlantic Container Line	908-518-5300
China Shipping North America	201-505-6900
CMA CGM	757-961-2100
COSCO Container Lines Americas, Inc. www.cosco-usa.com	201-422-0500
Crowley Maritime Corporation	904-727-2200



### DHX - Dependable Hawaiian Express, Inc.

19201 Susana Rd.  
Rancho Dominguez, California 90221  
310-537-2000  
Toll Free: 888-488-4888  
Fax: 310-537-1400  
Email: corporate@dhx.com  
www.dhx.com

**Services:** We ship domestic freight to Hawaii and from Hawaii, Guam and the mainland including cargo, container shipping, transportation, warehousing, and logistics. Our services include LCL and FCL services including pickup and delivery. We have office locations throughout the USA and across the globe. We are Dependable. From Start to Finish.

Evergreen America Line	201-761-3000
FESCO Agencies North America	206-583-0860
Great White Fleet	888-724-5493
Hamburg Sud www.hamburgsud-line.com	
Hapag-Lloyd	877-523-8300
HMM Port of Hamburg www.hafen-hamburg.de	
Hyundai Merchant Marine www.hmm21.com	877-749-8632
International Shipholding Corporation www.intship.com	251-243-9120
Italia Marittima S.p.A.	201-761-3000

Company Name	Phone Number
Jacksonville Port Authority www.jaxport.com	904-630-3070
K Line America, Inc. www.kline.com	804-560-3600
Kuehne + Nagel	201-413-5500
Maersk Inc.	973-514-5000
Maryland Port Administration www.mpa.maryland.gov	410-385-4480
Matson www.matson.com	510-628-4000
Mediterranean Shipping Company www.msc.com	212-764-4800
Mode Transportation www.modetransportation.com	972-447-0075
MOL (Mitsui O.S.K. Lines)	800-OK-GATOR
North Carolina State Ports Authority www.ncports.com	910-763-1621
OOCL (Orient Overseas Container Line)	925-358-6625



### Pasha Hawaii

745 Fort Street, Suite 1600  
Honolulu, Hawaii 96813  
(808-523-8625)

Email: about@pashanet.com  
pashahawaii.com

**Services:** Pasha Hawaii is one of the nation's leading domestic ocean shipping companies serving Hawaii from the continental U.S. The company owns a fleet of six fully Jones Act-qualified vessels and provides reliable containerized and roll-on/roll-off cargo services that leverage its unique combination of ocean transportation and inland distribution capabilities.

Port Of Long Beach polb.com	562-590-4122
Port of Longview www.portoflongview.com	360-425-3305

## RAIL/INTERMODAL SERVICES

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
Port of Los Angeles www.portoflosangeles.org	310-732-7678
Seaboard Marine, Ltd. www.seaboardmarine.com	305-863-4444



#### Team Worldwide

P. O. Box 668  
Winnsboro, Texas 75494  
903-342-3516  
Toll Free: 800-527-1168  
Fax: 903-342-3764  
Email: info@teamwww.com  
www.teamwww.com

Services: With over 40 U.S. offices, and 170 TIGA locations, Team Worldwide provides global transportation of logistics services organized under the operating companies/services of: Team Air Express Team Transportation Team Logistics Team Ocean Services Team Customs Brokerage Team International Trade Services Team International Global Alliance

The Northwest Seaport Alliance  
www.nwseaportalliance.com

Tote Maritime 800-426-0074

Company Name	Phone Number
Wallenius Wilhelm Logistics	201-307-1300
Wan Hai Lines (America-Ltd.) us.wanhai.com/views/LocalMain.xhtml	602-567-9100
Yang Ming Corp. www.yangming.com	678-502 7288



#### Yusen Logistics Americas Inc

300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800

Toll Free: 800-414-3895

Email: marketing@us.yusen-logistics.com  
www.yusen-logistics.com

Services: Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.

ZIM Integrated Shipping Services 866-744-7046



## RAIL/INTERMODAL SERVICES



Company Name	Phone Number
Alliance Shippers, Inc. www.alliance.com	800-222-0451
BNSF Railway	800-795-2673
Canadian Pacific Railway	403-319-7000



#### CSX Transportation (CSXT-Intermodal)

550 Water Street  
Jacksonville, Florida 32202  
855-GROW-H2R

Email: go\_intermodal@csx.com  
Intermodal.com

Services: As one of North America's largest intermodal rail service providers, CSXT's intermodal network offers nation-

Company Name	Phone Number
wide connectivity including the broadest reach in the East. CSXT Intermodal connects to all major Class I rail carriers to provide transcon shipments from coast-to-coast.	
Dart Intermodal, Inc. dartintermodal.com	800-366-9000
HHM Port of Hamburg www.hafen-hamburg.de	
Hub Group, Inc. www.hubgroup.com	630-271-3600
Kansas City Southern	816-983-1303
Mode Transportation www.modetransportation.com	972-447-0075
Norfolk Southern Corporation	800-635-5768



## THIRD-PARTY LOGISTICS SERVICES

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
Schneider National, Inc. schneider.com	800-558-6767
Triple Crown Services Company	260-416-3600
XPO Logistics, Inc. www.menloworldwide.com	248-648-6110

Company Name	Phone Number
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#### **Yusen Logistics Americas Inc**

300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800  
**Toll Free:** 800-414-3895  
**Email:** marketing@us.yusen-logistics.com  
www.yusen-logistics.com

**Services:** Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.



## THIRD-PARTY LOGISTICS SERVICES




Company Name	Phone Number
3PL Central 3plcentral.com	
<b>a2b Fulfillment, Inc.</b> 150 Stewart Parkway Greensboro, Georgia 30642 866-843-3827 ext 211 <b>Fax:</b> 706-454-0197 <b>Email:</b> sales@a2bf.com www.a2bf.com <b>Services:</b> a2b helps ecommerce and multichannel merchants succeed through integrated Order Fulfillment, Customer Care, and Value-Adding Business Solutions. We believe in real-time processing, same-day fulfillment, knowledgeable customer care and fast returns processing, all supported through advanced Order Management and Logistics technology. Contact us now for a free operational analysis.	
AIT Worldwide Logistics, Inc.	630-766-8300
Associated Global Systems	516-627-8910
Barrett Distribution Centers	508-553-8800
BLG Logistics www.blg-logistics.com	
BNSF Logistics www.bnsflogistics.com	855-481-9658

Company Name	Phone Number
C.H. Robinson Worldwide www.chrobinson.com	952-683-3700
Cardinal Logistics Management Corporation www.cardlog.com	704-786-6125
CAT Logistics	309-266-3591
CEVA Logistics	904-928-1400
CLX Logistics www.clxlogistics.com	215-461-3805
Comprehensive Logistics Company www.complog.com	
Conexus Logistics www.conexuslogistics.com	918-234-4414
Crowley www.crowley.com	305-463-4800
CRST Logistics	888-204-9607
Deringer, Inc.	802-524-8110

## THIRD-PARTY LOGISTICS SERVICES

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number	Company Name	Phone Number
			
<p><b>DGX - Dependable Global Express</b>            19201 Susana Rd.            Rancho Dominguez, California 90221            310-669-8888  <b>Toll Free:</b> 888-488-4888  <b>Fax:</b> 310-537-9198  <b>Email:</b> corporate@dgxglobal.com            www.dgxglobal.com  <b>Services:</b> DGX - Dependable Global Express has grown to become the leading ocean/sea and air freight companies serving international origins and destinations. Our success and growth are due to our constant commitment to superior shipping, quality services and value. We are Dependable. From Start to Finish!</p>			
DHL Logistics Solutions	800-637-5502	Inmar	855-815-2646
DSC Logistics	800-372-1960	www.inmar.com	
DSV		Kane Is Able, Inc.	570-558-5100
www.dsv.com		www.kaneisable.com	
DSV Global Transport and Logistics	562-552-9400	Kenco	423-622-1113
www.dsv.com		www.kencogroup.com	
FedEx Global Supply Chain Services	800-222-7657	Kenneth Clark Company, Inc.	410-465-5116
www.fedex.com/us/supply-chain/		www.kennethclark.com	
FedEx Trade Networks	901-684-4800	Kuehne + Nagel	201-413-5500
www.ftn.fedex.com			
<p><b>FIDELTONE</b>            1260 Karl Court            Wauconda, Illinois 60084            847-487-3300  <b>Toll Free:</b> 800-475-0917  <b>Email:</b> marketing@fidelitone.com            www.FIDELTONE.com  <b>Services:</b> FIDELITONE, a supply chain management firm, helps you earn your customers' loyalty through specialized services in last mile delivery, inbound materials management, order fulfillment, service parts management and transportation. We manage resources, create right-fit solutions and optimize supply chain processes to advance your business performance and profitability.</p>		<p><b>LEGACY Supply Chain Services</b>            1941 Citrona Dr.            Suite 300W            Fernandina Beach, Florida 32034            800.361.5028 ext. 6  <b>Fax:</b> 603-422-7337  <b>Email:</b> contactus@legacyscs.com            www.LEGACYscs.com  <b>Services:</b> For nearly 40 years, LEGACY has been a dedicated logistics partner to our clients across the U.S. and Canada. We provide tailored 3PL solutions including warehousing &amp; distribution, international &amp; domestic transportation, and customs brokerage. At LEGACYculture makes an impact with our clients, our employees, and in our communities.</p>	
G&D Integrated	888-289-0489	Lynden Logistics	866-459-6336
www.gdintegrated.com		www.lynden.com/lint/	
GENCO	800-677-3110	MACROPOINT	
www.genco.com		www.macropoint.com	
Geodis	615-401-6400	<p><b>MIQ Logistics</b>            11501 Outlook Street            Suite 500            Overland Park, Kansas 66211            913-696-7100  <b>Toll Free:</b> 866-972-9272  <b>Email:</b> contact_us@miq.com            www.miq.com  <b>Services:</b> MIQ Logistics is a global logistics company headquartered in Overland Park, Kan., with offices in North America, Asia, Europe and South America. MIQ Logistics enables companies to improve their transportation network and overall supply chain efficiency by offering flexible logistics solutions supported by Web-native technology and global logistics management capabilities.</p>	
www.geodis.us		MKM Distribution Services Inc	317-334-7900
		www.mkmdistribution.com	
		Mode Transportation	972-447-0075
		www.modetransportation.com	

## THIRD-PARTY LOGISTICS SERVICES

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
NFI www.nfiindustries.com	866-219-7450
NRS - National Retail Systems, Inc. www.nationalretailsystems.com	201-330-3641
NVC Logistics Group www.nvclogistics.com	201-767-0911



#### Odyssey Logistics & Technology

39 Old Ridgebury Rd  
Danbury, Connecticut 06810  
203-448-3900  
Toll Free: 855-412-0199  
Email: sales@odysseylogistics.com  
www.odysseylogistics.com

**Services:** With operations in North America, Europe and Asia, Odyssey Logistics & Technology Corporation (Odyssey) offers international transportation management, intermodal services, trucking services, and managed services and consulting. Modes include: TL/LTL trucking, containership, rail, air, and bulk including bulk truck, ISO Tank, railcar and tanker. Odyssey also offers no-cost TMS.

Penske Logistics	610-775-6291
Pilot Freight Services www.pilotdelivers.com	610-891-8100
PLS Logistics Services www.plslogistics.com	724-814-5100
Port Logistics Group www.PortLogisticsGroup.com	973-249-1230
Prologis	303-567-5000
Purolator International www.purolatorinternational.com	888-511-4811
Quiet Logistics	877-887-8438



#### Redwood Logistics

1765 North Elston Avenue  
Chicago, Illinois 60642  
312 698 8334  
Toll Free: 844-467-3396  
Fax: 844-467-3396  
Email: rpiontek@redwoodlogistics.com  
redwoodlogistics.com

Company Name	Phone Number
<b>Services:</b> Redwood Logistics is a next generation logistics provider offering a broad range of services including multi-modal transportation brokerage, multi-client distribution, asset based truckload services, flexible managed transportation, SaaS TMS technology and knowledge based services that encompass procurement and technology consulting, proprietary B2B integration tools, transportation network modeling and data analytics.	
Ruan	866-782-6669
Ryder System, Inc. www.ryder.com	305-500-3726



#### Saddle Creek Logistics Services

3010 Saddle Creek Road  
Lakeland, Florida 33801  
863-665-0966

Toll Free: 866-668-0966  
Email: sales@sclogistics.com  
www.sclogistics.com

**Services:** Saddle Creek is an omnichannel supply chain solutions company providing a variety of integrated services warehousing, omnichannel fulfillment, transportation and packaging. Our scalable, custom solutions leverage these capabilities, our nationwide network and advanced technology to help our customers get products where they need to be quickly, cost-effectively and seamlessly.



#### Saia Inc.

11465 Johns Creek Parkway  
Suite 400  
Johns Creek, Georgia 30097  
800-765-7242

Email: jjump@saia.com  
www.saiacorp.com

**Services:** Offers customers a wide range of less-than-truckload, non-asset truckload, and logistic services. Saia operates 147 terminals in 34 states and is home to the industry-exclusive Customer Service Indicators and Xtreme Guarantee. Saia LTL Freight has been recognized by the American Trucking Associations Safety Management Council for its outstanding safety record.

## THIRD-PARTY LOGISTICS SERVICES

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
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**SEKO Logistics**

1100 N Arlington Heights Road  
Suite 600  
Itasca, Illinois 60143  
Toll Free: (800-228 2711  
Email: hello@sekologistics.com  
www.sekologistics.com

**Services:** We provide complete Supply Chain Solutions, specializing in transportation, logistics, forwarding and warehousing. We also lead the industry with innovative and customizable IT solutions, which provide a seamless flow of information and give our growing customer base true supply chain visibility.

Suddath Global Logistics suddath.com	904-858-1234
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**Team Worldwide**

P. O. Box 668  
Winnsboro, Texas 75494  
903-342-3516  
Toll Free: 800-527-1168  
Fax: 903-342-3764  
Email: info@teamww.com  
www.teamww.com

**Services:** With over 40 U.S. offices, and 170 TIGA locations, Team Worldwide provides global transportation of logistics services organized under the operating companies/services of: Team Air Express Team Transportation Team Logistics Team Ocean Services Team Customs Brokerage Team International Trade Services Team International Global Alliance

TransGroup Worldwide Logistics	800-444-0294
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Transplace transplace.com	479-770-7391
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**Transportation Insight**

310 Main Avenue Way SE  
Hickory, North Carolina 28602  
828-485-5000  
Toll Free: 877-226-9950  
Fax: 828-322-2843

Email: marketing@t-insight.com  
www2.transportationinsight.com/SCMR

Company Name	Phone Number
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**Services:** Service Needs Assessment, Carrier Sourcing, Warehousing, International Transportation, Freight Cost Analysis and Benchmarking, Contract and Rate Administration, Freight Bill Audit and Payment, Consolidated Electronic Billing, General Ledger Coding, Freight Refunds for Service Provider Failures, Freight Accruals, Transportation Management System (TMS), Automated Freight Rate Quoting, Claims Management, Customized Business Intelligence, Electronic Data Exchange (EDI), Enterprise-Wide Visibility, Control & Accountability, Fuel Surcharge and Accessorial Monitoring, Best Practice Implementations, KPI Measurement, Network Optimization, Process Standardization and Automation, Route/Mode Optimization, Shipment Aggregation, Supply Chain Modeling, Trend Analysis, Vendor Routing Management, Outsourced Execution, LEAN Consulting and Supply Chain Sourcing of Indirect Materials.

Tucker Company Inc. www.tuckerco.com	856-317-9600
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United States Postal Service	800-275-8777
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Universal www.universallogistics.com	586-920-0100
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UPS Supply Chain Solutions	913-693-6151
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Werner Global Logistics www.werner.com	402-895-6640
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WSI Warehouse Specialists, Inc. www.wsinc.com	920-831-3700
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XPO Logistics, Inc. www.menloworldwide.com	248-648-6110
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**Yusen Logistics Americas Inc**

300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800

Toll Free: 800-414-3895  
Email: marketing@us.yusen-logistics.com  
www.yusen-logistics.com

**Services:** Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.

Zyoto	866-469-6986
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# Supply Chain Software and Technology



The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.

Company Name	Phone Number
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3GTMS www.3gtms.com	
4SIGHT Supply Chain Group www.go4sight.com	201-940-7311
ADi SmartBOL www.smartbol.com	732-981-0444
ALK Technologies - PC*MILER www.pcmiler.com	800-377-6453

#### Amber Road, Inc.

One Meadowlands Plaza  
East Rutherford, New Jersey 07073  
201-935-8588  
Fax: 201-935-5187  
Email: Solutions@AmberRoad.com  
www.AmberRoad.com

**Services:** Amber Road's mission is to improve the way companies manage their international supply chains and conduct global trade. As a leading provider of cloud based global trade management solutions, we automate the supply chain across sourcing, logistics, cross-border trade, and regulatory compliance activities to improve operating efficiencies and financial performance.

#### Andlor Logistics Systems

Suite 210-850 West Hastings Street  
Vancouver, British Columbia V6C 1E1  
604-687-1130  
Fax: 604-687-1189  
Email: Sales@andlor.com  
www.Andlor.Com

**Services:** Andlor has implemented software for the Public Warehousing Industry for over seventeen years. Andlor offers integrated 3PL WMS systems including electronic signatures and ART (Andlor Reporting Tool). E-Track provides Internet access to orders/receipts, shipments, invoices, inventories, claims, appointments, EDI and labor productivity. YMS and Reverse Logistics systems are also available.

Apex Logistics www.apexsupplychain.com	732-940-7328
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ASAP Automation LLC www.asap-automation.com	502-266-9999
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Company Name	Phone Number
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BearCom	800-527-1670
Biznet Solutions Ltd www.biznetsolutions.com	+44 2890223224
C3 Solutions www.c3solutions.com	514-315-3139



#### Cadre Technologies, Inc.

7900 East Union Avenue  
Suite 1007  
Denver, Colorado 80237  
303-217-7051  
Email: sales@cadretech.com  
www.cadretech.com

**Services:** Cadre Technologies provides warehouse management software and multicarrier shipping systems to fulfillment, logistics and omnichannel distribution companies. Cadence Fulfillment is a real-time, warehouse solution that integrates the entire back-end fulfillment process (order processing, warehouse management and multi-carrier shipping-for high volume, complex operations. LogiView is a Cloud-based inventory control software.

Celsis	312-476-1282
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Continental Wireless cntlwire.com	800-527-2000
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Coyote Logistics www.coyote.com	
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**SUPPLY CHAIN SOFTWARE AND TECHNOLOGY**  
EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

**Company Name Phone Number**



**CT Logistics**

12487 Plaza Drive  
Cleveland, Ohio 44130  
216-267-2000, ext. 2190  
Fax: 216-267-5945  
Email: sales@ctlogistics.com  
ctlogistics.com

**Services:** Since 1923, CT has provided global freight audit/ payment for all modes/currencies. Partner with CT to design and deliver customized supply chain solutions. CT's FreightRater, Nø software is the industry's first choice for freight analysis and TMS solutions. CT provides BI for benchmarking/trending with dashboards. CT has SOCII and ISO 9001:2008 certifications.



**CTSI-Global**

5100 Poplar Avenue  
15th Floor  
Memphis, Tennessee 38137  
Toll Free: 888-836-5135  
Fax: +1-901-766-1520  
Email: solutions@ctsi-global.com  
www.ctsi-global.com

**Services:** CTSI-Global's technology solutions automate manual processes, improve performance levels, and decrease transportation costs for shippers and 3PLs around the globe. Solutions can be customized to global business requirements, including currencies, languages, duties, and taxes. Dedicated business analysts support our clients and their carriers with operational questions and strategic business reviews.



**Descartes Systems Group**

120 Randall Drive  
Waterloo, Ontario N2V1C6  
519-746-8110  
Toll Free: 1-800-419-8495  
Email: info@descartes.com  
www.descartes.com

**Services:** Descartes' software-as-a-service solutions improve the productivity, performance and security of logistics-intensive businesses. Our solutions are used to route delivery resources; plan and execute shipments; manage transportation; access global trade data; file customs and security documents; and complete other processes by participating in the world's largest, collaborative multimodal logistics community.

**Company Name Phone Number**

Dessault Systems 1 562 951 8000  
www.apriso.com

Digital Lumens 617-723-1200  
www.digitallumens.com



**DMLogic**

661 Andersen Drive  
Foster Plaza 7  
Pittsburgh, Pennsylvania 15220  
412-458-4010  
Email: sales@dmlogicllc.com  
www.dmlogicllc.com

**Services:** DMLogic consultants help clients reach the highest levels of productivity and efficiency within warehouse from design to implementation to support. Our premiere product STEPLogic is a software development platform that enables users to develop new processes and implementation tools without changing the core code of their WMS.

**Description:** Do you wish your WMS did more? You can with STEPLogic. STEPLogic is a software development tool that automates development tasks, replacing them with configuration steps. The product provides the user with the tools to build decision tree navigation so users can enhance their current WMS to meet their needs.

E2open 650-381-3700

EC Market Inc  
www.ecmarket.com

eCustoms 716-881-2590  
www.ecustoms.com

Elemica 484-253-4674  
www.elemica.com

enVista 317-208-9100  
www.envistacorp.com

Epicor Software Corporation 215-493-8900  
www.epicor.com

FORTE 513-398-2800  
www.forte-industries.com

FREIGHTWARE from 905-820-3030  
InFreight Logistics Inc  
www.infreightlogistics.com

FusionOps 408-524-2222  
www.fusionops.com

Genpact +91 9811546542

# SUPPLY CHAIN SOFTWARE AND TECHNOLOGY

## EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
GT Nexus www.gtnexus.com	510-747-3200
Gudel, Inc.	734-214-0000
Highjump Software www.highjump.com	



### Highway905

105 Raider Boulevard  
Suite 207  
Hillsborough, New Jersey 08844  
908 874 4867  
Email: sales@highway905.com  
www.highway905.com

**Services:** Highway905 is a supply chain execution software (SaaS-provider offering manufacturers, Shippers, distributors, 3PL's the technology and shipment visibility management services. Our WMS, TMS, FPS , Shipment Tracking & last-mile delivery tracking with signed POD systems assisting client's growing business and tackling order fulfillment , end customer on-time delivery challenges.

Honeywell  
www.honeywell.com

IBM  
www.ibm.com/solutions/alliance/us/en/index/scm.html

IFS  
847-592-0200

InfinityQS  
800-772-7978

Infor  
www.infor.com

Inovis, Inc.  
www.inovis.global

Insight  
www.insightoutsmart.com

### Integration Point

10720 Sikes Place  
Suite 300  
Charlotte, North Carolina 28277  
704-576-3678  
www.integrationpoint.com

**Services:** A leading provider of global trade management solutions, Integration Point provides import and export capabilities, up-to-date regulatory information for 150+ countries and connectivity to supply chain partners and government agencies across the world. Built on a single, web-based plat-

Company Name	Phone Number
form, Integration Point allows organizations to manage trade programs and comply with global regulatory requirements while improving visibility and realizing savings. Integration Point provides solutions for: import/export management, supply chain security, entry validation, denied party screening, product classification, free trade agreement qualification, foreign-trade zones, and global duty deferral program management. Contact Integration Point at <a href="http://www.IntegrationPoint.com">http://www.IntegrationPoint.com</a> or 704-576-3678.	

### IntelliTrans

133 Peachtree St NE  
#3050  
Atlanta, Georgia 30303  
Toll Free: 800-551-8815  
www.intellitrans.com

**Services:** IntelliTrans, a TransCore company, provides hosted, software-as-a-service solutions for multi-modal transportation management and operating systems for nodes in the distribution chain. Our Transportation Management Solutions (TMS-will help you reduce your transportation cost, improve your proactive customer service, and automate your business processes. With our focus on timely, complete, and accurate data (including integration of GPS and RFID hardware), freight management services, and world-class technology, we can ensure value delivery for you and your trading partners. For more information please contact us at <http://www.intellitrans.com/contact-us/> or call us at 800-551-8815.

Interlink Technologies  
www.thinkinterlink.com

Jump Technologies  
www.jumptech.com

Kapow Software  
www.kofax.com

Kewill  
www.kewill.com

Kinaxis  
613-592-5780

Kronos  
www.kronos.com

LeanLogistics  
616-738-6400

LLamasoft, Inc.  
www.llamasoft.com

LOG-NET, Inc.  
732-758-6800

## SUPPLY CHAIN SOFTWARE AND TECHNOLOGY

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
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#### Logility

470 E Paces Ferry Road NE  
Atlanta, Georgia 30305  
Email: [info@logility.com](mailto:info@logility.com)  
[www.logility.com](http://www.logility.com)

**Services:** Logility is a leading provider of collaborative supply chain optimization and advanced retail planning solutions that help medium, large, and Fortune 500 companies realize substantial bottom-line results in record time. Logility Voyager Solutions is a comprehensive supply chain management and retail optimization solution featuring built-in advanced analytics.

Manhattan Associates <a href="http://www.manh.com">www.manh.com</a>	770-955-7070
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Microsoft Corporation	888-477-7989
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#### MIQ Logistics

11501 Outlook Street  
Suite 500  
Overland Park, Kansas 66211  
913-696-7100  
Toll Free: 866-972-9272  
Email: [contact\\_us@miq.com](mailto:contact_us@miq.com)  
[www.miq.com](http://www.miq.com)

**Services:** MIQ Logistics is a global logistics company headquartered in Overland Park, Kan., with offices in North America, Asia, Europe and South America. MIQ Logistics enables companies to improve their transportation network and overall supply chain efficiency by offering flexible logistics solutions supported by Web-native technology and global logistics management capabilities.

Motorola Solutions <a href="http://www.motorolasolutions.com">www.motorolasolutions.com</a>	847-576-5000
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NCR <a href="http://www.ncr.com/retail">www.ncr.com/retail</a>	800-Call-NCR
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NetSuite <a href="http://www.netsuite.com">www.netsuite.com</a>	
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Next Generation Logistics, Inc.	847-963-0007
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Omnitracs <a href="http://www.omnitracs.com">www.omnitracs.com</a>	800-348-7227
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One Network Enterprises	972-385-8630
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Open Sky Group <a href="http://www.openskygroup.com">www.openskygroup.com</a>	919-346-4500
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Oracle Corporation	650-506-0024
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Peak Ryzex <a href="http://www.peak-ryzex.com">www.peak-ryzex.com</a>	888-444-9128
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Company Name	Phone Number
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QAD Inc.	805-684-6614
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Qualcomm Inc.	858-587-1121
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Quintiq <a href="http://www.quintiq.com">www.quintiq.com</a>	610-964-8111
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Reddwerks Corporation <a href="http://reddwerks.com">reddwerks.com</a>	512-257-3031
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SAP	866-379-4715
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Sato America <a href="http://www.satoamerica.com">www.satoamerica.com</a>	704-644-1650
--	--------------

Schneider Electric <a href="http://www.schneider-electric.com">www.schneider-electric.com</a>	877-272-2722
--	--------------



#### SEKO Logistics

1100 N Arlington Heights Road  
Suite 600  
Itasca, Illinois 60143  
Toll Free: 800-228 2711  
Email: [hello@sekologistics.com](mailto:hello@sekologistics.com)  
[www.sekologistics.com](http://www.sekologistics.com)

**Services:** We provide complete Supply Chain Solutions, specializing in transportation, logistics, forwarding and warehousing. We also lead the industry with innovative and customizable IT solutions, which provide a seamless flow of information and give our growing customer base true supply chain visibility.

SMC3 <a href="http://www.smc3.com">www.smc3.com</a>	770-486-5800
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Snapfulfil SaaS WMS <a href="http://www.snapfulfil.com">www.snapfulfil.com</a>	843-577-5007
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#### Softeon

11700 Plaza America Drive  
Suite 910  
Reston, Virginia 20190  
703-793-0005

Toll Free: 1-800-763-8366

Fax: 703-793-1604

Email: [marketing@softeon.com](mailto:marketing@softeon.com)

[www.softeon.com](http://www.softeon.com)

**Services:** Softeon is a global provider of supply chain solutions from planning through execution. Our modern platform is engineered to simplify complex problems into solutions



## SUPPLY CHAIN SOFTWARE AND TECHNOLOGY

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
for faster time to market and lower cost of ownership. Our solutions are flexible and user friendly with options for cloud-based subscription or on-premise systems.	
Software AG www.softwareag.com	800-823-2212
SphereWMS www.spherewms.com	(214-382-2680)
Streamline, Inc www.streamline.bz	888-886-4621
SupplyOn	248-758-2300
SymphonyEYC www.eyc.com/gold	404-355-3220
Syncron	678-638-6275
TCLogic	317-464-5152
Technogix Decision Sciences Inc.	905-889-2178
TECSYS www.tecsys.com	514-866-0001
TMW Systems www.tmwsystems.com	
Toshiba www.toshiba.com	
TraceLink Inc	781-938-6500
Transite Technology, Inc.	919-862-1900

Company Name	Phone Number
Business Intelligence, Electronic Data Exchange (EDI), Enterprise-Wide Visibility, Control & Accountability, Fuel Surcharge and Accessorial Monitoring, Best Practice Implementations, KPI Measurement, Network Optimization, Process Standardization and Automation, Route/Mode Optimization, Shipment Aggregation, Supply Chain Modeling, Trend Analysis, Vendor Routing Management, Outsourced Execution, LEAN Consulting and Supply Chain Sourcing of Indirect Materials.	
TranzAct Technologies Inc. www.tranzact.com	630-833-0890
TZA www.tza.com	847-540-6543
Vitech Business Group, Inc. www.vitechgroup.com	360-647-1622
Wolters Kluwer Transport Services - Transwide TMS www.transwide.com	800-763-3240
Xeneta AS www.xeneta.com	
XpressRate www.xpressrate.com	855-517-3777



#### Transportation Insight

310 Main Avenue Way SE  
Hickory, North Carolina 28602  
828-485-5000

Toll Free: 877-226-9950

Fax: 828-322-2843

Email: marketing@t-insight.com

www2.transportationinsight.com/SCMR

**Services:** Service Needs Assessment, Carrier Sourcing, Warehousing, International Transportation, Freight Cost Analysis and Benchmarking, Contract and Rate Administration, Freight Bill Audit and Payment, Consolidated Electronic Billing, General Ledger Coding, Freight Refunds for Service Provider Failures, Freight Accruals, Transportation Management System (TMS), Automated Freight Rate Quoting, Claims Management, Customized



#### Yusen Logistics Americas Inc

300 Lighting Way  
6th Floor  
Secaucus, New Jersey 07094  
201-553-3800

Toll Free: 800-414-3895

Email: marketing@us.yusen-logistics.com

www.yusen-logistics.com

**Services:** Yusen Logistics is leading global logistics service provider with over 60 years of expertise in warehousing, freight forwarding, and transportation. With more than 20,000 employees and 475 offices worldwide, we provide services to customers across Asia, Europe, North and South America, and Oceania.



# Sourcing and Procurement Solutions

*The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.*

Company Name	Phone Number	Company Name	Phone Number
1st Source Products, Inc.	812-288-7466	IBM	877-426-3774
A. T. Kearney Procurement Solutions www.atkearney.com	312-223-6400	www.ibm.com/solutions/alliance/us/en/index/scm.html	
Amatech, Inc. www.amatechinc.com	800-403-6920	IQNavigator	303-563-1500
Ariba	866-772-7422	MCS Management Services	215-405-8100
BasWare	203-487-7900	Mode Transportation www.modetransportation.com	972-447-0075
Beroe, Inc.	919-342-4569	Motion Industries www.motionindustries.com	205-956-1154
Corporate United	440-895-0938	Perfect Commerce	757-766-8211
Emptoris, Inc.	781-993-9212	Puridium	800-388-1415
Epiq Technologies, Inc. www.epiqtech.com	858-467-9961	SciQuest www.sciquest.com	888-638-7322
Fieldglass	312-279-8700	Source One Management Services, LLC	215-902-0200
Genpact	+91 9811546542	Zoyto www.Zoyto.com	713-300-3000
GEP www.smartbygep.com	732-382-6565		
Hertzler Systems Inc.	574-533-0571		



# Professional Associations



*The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.*

Company Name	Phone Number	Company Name	Phone Number
APICS-The Association for Operations Management apics.org	773-867-1777	Material Handling Industry www.mhi.org	
APQC	800-776-9676	Next Level Purchasing Association www.nextlevelpurchasing.com	412-294-1990
CSCMP (Council of Supply Chain Management Professionals)	630-574-0985	NITL (National Industrial Transportation League)	703-524-5011
Institute For Supply Management www.instituteforsupplymanagement.org		SIG (Sourcing Interests Group) www.sig.org	530- 582-8600
International Society of Logistics	301-459-8446	The National Academies of Sciences, Engineering, and Medicine www.trb.org	202-334-2000
IQPC	800-882-8684		
ISM (Institute for Supply Management)	480-752-6276	WERC (Warehousing Education & Research Council)	630-990-0001



# Consulting and Professional Services

*The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.*

Company Name	Phone Number	Company Name	Phone Number
4SIGHT Supply Chain Group www.go4sight.com	201-940-7311	design and deliver customized supply chain solutions. CT's FreitRater™ software is the industry's first choice for freight analysis and TMS solutions. CT provides BI for benchmarking/trending with dashboards. CT has SOCII and ISO 9001:2008 certifications.	
A. T. Kearney, Inc.	312-648-0111	Deloitte	212-489-1600
Aberdeen Group	617-723-7890	Direct Recruiters, Inc.	440-248-3370
Accenture Strategy www.accenture.com/us-en/strategy-index	877-889-9009	Enterprise Florida www.enterpriseflorida.com	
ARC Advisory Group www.arcweb.com	781-471-1000	FDG fdgatlanta.com	770-437-2700
BearingPoint	703-747-3000	Fennimore Solutions	224-484-8926
Booz-Allen	703-902-5000	Forrester Research	617-613-5730
Boston Consulting Group	617-850-3700	Gartner www.gartner.com/technology/supply-chain-professionals.jsp	800-213-4848
Bristlecone	408-321-3400	GCL Group	866-364-4721
CapGemini	22-314-8000	Greybeard Advisors	412-874-8410
Chain Connectors, Inc.	770-432-9952	Hitachi Consulting	877-664-0010
Chain Link Research	67-762-4040	IBM Consulting www-935.ibm.com/services/us/gbs/consulting	800-IBM-7080
Chainalytics www.chainalytics.com	770-433-1566	<b>IntelliTrans</b> 133 Peachtree St NE #3050 Atlanta, Georgia 30303 Toll Free: 800-551-8815 www.intellitrans.com	
Chicago Consulting	312-346-5080	<b>Services:</b> IntelliTrans, a TransCore company, is a complete freight management services provider focused on technology and transparency. We have over 20 years of transportation management experience and a proven track record of helping our customers (many Fortune Global 500 companies-reduce costs, increase visibility, and automate processes. Our consultants not only review your processes and identify opportunities, but also execute and implement their recommendations. The best part: we provide on-going support to ensure that we deliver savings to your bottom line. For more information please contact us at <a href="http://www.intellitrans.com/contact-us/">http://www.intellitrans.com/contact-us/</a> or call us at 800-551-8815.	
CSC Consulting	805-491-3926		



## CT Logistics

12487 Plaza Drive  
Cleveland, Ohio 44130  
216-267-2000, ext. 2190  
Fax: 216-267-5945  
Email: [sales@ctlogistics.com](mailto:sales@ctlogistics.com)  
[ctlogistics.com](http://ctlogistics.com)

**Services:** Since 1923, CT has provided global freight audit/payment for all modes/currencies. Partner with CT to

**CONSULTING AND PROFESSIONAL SERVICES**  
EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number	Company Name	Phone Number
KEOGH Consulting www.keogh1.com	440-526-2002	RGP www.rgp.com	
LTD Management	610-458-3636	Sedlak	216-206-4700
<b>MEP Supply Chain Optimization</b> 100 Bureau Drive Gaithersburg, Maryland 20899-4800 301-975-3255 <b>Email:</b> kconley@mepsupplychain.org www.mepsupplychain.org <b>Services:</b> NIST Manufacturing Extension Partnership (MEP-has been helping small- to mid-sized manufacturers resolve challenges in productivity, safety, quality, growth and innovation since 1989. The MEP Supply Chain Optimization program converts supply chain strategies into tangible supply chain collaboration using an approach that equips manufacturers with the tools needed to resolve gaps in their supply chain strategy, so they may more effectively anticipate required future capabilities; and better qualify suppliers to meet those needs. Manufacturers of all sizes can benefit from partnering with MEP centers located across the country. Individual offerings in risk management and total cost of ownership are available.		St. Onge Company	717-840-8181
		Supply Chain Visions www.supplychainvisions.com	703-825-4031
		Tenzing Consulting	724-940-4060
		Tompkins Associates	919-855-5461
		TranSystems www.transystems.com	816-329-8700
		Vantage Partners www.vantagepartners.com	
		XIO Strategies	571-722-1900
Pragmatek	612-333-3164		
R. Michael Donovan & Co.,Inc.	508-788-1100		



# Financial Services

*The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.*

Company Name	Phone Number	Company Name	Phone Number
American Express	800-528-2122	GE Capital www.gecapital.com	
Bank of America Corporation	704-386-5681	GT Nexus www.gtnexus.com/solutions/network-financial-supply-chain	
Citigroup	800-285-3000	HSBC Corporate Services	212-525-2563
Coyote Logistics www.coyote.com		JPMorgan Chase & Co.	212-270-6000
		KPMG, LLC www.kpmg.com	
		MasterCard Worldwide	914-249-2000
		Meridian Finance Group	310-260-2130
		PrimeRevenue	678-904-7100
		Rapid Ratings www.rapidratings.com	
		The Garden City Group, Inc. www.gardencitygroup.com	
		UPS Capital www.upscapital.com	877-263-8772
		US Bank www.usbank.com	800-417-1844
		Visa Inc.	800-847-2911
		Wells Fargo www.wellsfargo.com	800-869-3557
Euler Hermes	410-753-0753		
Gateway Commercial Finance LLC gatewaycfs.com	561-734-2706		



## CT Logistics

12487 Plaza Drive  
Cleveland, Ohio 44130  
216-267-2000, ext. 2190  
Fax: 216-267-5945  
Email: sales@ctlogistics.com  
ctlogistics.com

**Services:** Since 1923, CT has provided global freight audit/payment for all modes/currencies. Partner with CT to design and deliver customized supply chain solutions. CT's FreightRater™ software is the industry's first choice for freight analysis and TMS solutions. CT provides BI for benchmarking/trending with dashboards. CT has SOCII and ISO 9001:2008 certifications.



# Educational & Professional Development



The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.

Company Name	Phone Number
Accenture Supply Chain Academy supplychain.accentureacademy.com	917-452-4946
Arizona State University www.wpcarey.asu.edu/exec	480-965-7579
Auburn University	334-844-4000
Cranfield University/School of Management www.cranfieldmsc.biz/log	44-011-1234-758102
DePaul University www.depaul.edu	312-362-8300
George Institute of Technology	404-385-7306
Golden Gate University www.ggu.edu	415-442-6500
Indiana University	877-785-4713
Lehigh University	610-758-5285
Massachusetts Institute of Technology (MIT) ctl.mit.edu	617-258-7267
Michigan State University www.bus.msu.edu/msc	517-355-8377
Niagara University www.bus.msu.edu/msc	716-286-8050
North Carolina State University www.mgt.ncsu.edu	919-515-5560
Northeastern University www.cba.neu.edu	866-890-0347 x3510
Northwestern University www.kellogg.northwestern.edu/execed	847-467-7020
Ohio State University www.fisher.osu.edu	614-292-8808
Penn State University www.smeal.psu.edu/psep	814-865-3435
Rutgers Business School www.business.rutgers.edu	973-353-1234
Shippensburg University www.ship.edu/business	717-477-1483

Company Name	Phone Number
Stanford University	650-724-6301
Syracuse University www.whitman.syr.edu/scm	315-443-3751
Texas A&M University mays.tamu.edu	979-845-1616
Texas Christian University (TCU)	817-257-7572

## The University of Alabama Bama By Distance

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Tuscaloosa, Alabama 35401  
800-467-0227

**Toll Free:** (205-348-0089)

**Email:** aoinfo@ccs.ua.edu

[www.bamabydistance.ua.edu/supply](http://www.bamabydistance.ua.edu/supply)


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University of Alabama www.ua.edu	
University of Arkansas www.waltoncollege.uark.edu	479-575-6142
University of Liverpool www.ohcampus.com	31-0-20-713-0000
University of Maryland www.rhsmith.umd.edu	301-405-2189
University of Michigan michiganross.umich.edu	734-763-7804
University of San Diego www.sandiego.edu/scmi	619-260-4600
University of San Francisco www.usanfranonline.com/ism	800-609-4196
University of Tennessee supplychain.utk.edu	865-974-5001
University of Wisconsin-Madison exed.wisc.edu/supplychain	608-441-7357
Walden University www.waldenu.edu	866-492-5336



# Warehouse/DC

The following is a representative sample; it is not intended to be an exhaustive listing of all the companies in this category.

Company Name	Phone Number	Company Name	Phone Number
ADi SmartBOL www.smartbol.com	732-981-0444	DMW&H Systems www.dmwandh.com	201-635-3493
ADSI www.adsionline.com	847-884-1940	 <p><b>East Coast Storage Equipment</b> 620 Burtis St Brick, New Jersey 08723 732-451-1808 Toll Free: 888-294-5022 Email: info@ecseco.com ecseco.com <b>Services:</b> Distributor and systems integrator all all types of material handling systems. We can completely outfit your whole warehouse/distribution center for increased efficiency and productivity. We have over 20 years experience designing and installing various racking systems, mezzanine platforms, industrial shelving and conveyor systems. We're the masters of material handling.</p>	
AmbaFlex Inc. www.ambaflex.com	877-800-1634		
AS/R Systems, Inc. www.ASRSystems.com	847-508-0538		
Ashland Conveyor Products www.ashlandconveyor.com	419-281-1235		
Axmann Conveying Systems www.axmann-fs.com	812-284-9285		
B-Tek Scales, LLC www.b-tek.com			
Camcode www.camcode.com			
Cognex Corporation www.cognex.com			
Cree, Inc. www.cree.com			
Crown Equipment www.crown.com	419-629-2311		Emerson Industrial Automation www.emersonindustrial.com
Cushman www.cushman.com	706-798-4311	Flexible Material Handling www.flexmh.com	678-745-3720
Datalogic www.datalogic.com	541-868-3619	FlexLink Systems, Inc. www.flexlink.com	610-973-8200
Dematic www.dematic.com	877-725-7500	G&D Integrated www.gdintegrated.com	888-289-0489
DENSO ADC www.denso-adc.com		Graybar www.graybar.com	
		Intermec by Honeywell www.intermec.com	425-348-2600
		Hoosier Energy Economic Development www.hoosiersites.com	
		Hyster Company www.hyster.com	
		Hyundai Heavy Industries www.hceamericas.com	



## WAREHOUSE/DC

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number	Company Name	Phone Number
Intelligrated www.intelligrated.com	866-936-7300	Rapid Industries, Inc www.rapidindustries.com	502-968-3645
Komatsu Forklift USA www.kfiusa.com	847-437-1823	Raymond Corporation www.raymondcorp.com	607-656-2311
<b>LEGACY Supply Chain Services</b> 1941 Citrona Dr. Suite 300W Fernandina Beach, Florida 32034 800-361-5028 ext. 6 Fax: 603-422-7337 Email: contactus@legacyscs.com www.LEGACYscs.com Services: For nearly 40 years, LEGACY has been a dedicated logistics partner to our clients across the U.S. and Canada. We provide tailored 3PL solutions including warehousing & distribution, international & domestic transportation, and customs brokerage. At LEGACYculture makes an impact with our clients, our employees, and in our communities.		Reddwerks Corporation reddwerks.com	512-257-3031
		Rite-Hite www.ritehite.com	414-355-2200
		Sackett Systems, Inc. www.sackett-systems.com	630-766-5500
		SAG (Securitag Assembly Group Co., Ltd.) www.sag.com.tw	+886-4-2492-5298
		Sealed Air Corporation sealedair.com	
Mitsubishi Electric Automation Inc. us.mitsubishielectric.com	847-478-2213	SencorpWhite www.sencorpwhite.com	508-771-9400
Murata Machinery www.muratec-usa.com	704-394-8331	SEW-Eurodrive www.seweurodrive.com	864-439-8792
Narrow Aisle, Inc. www.narrowaisleinc.com	214-819-4180	Shockwatch www.shockwatch.com	214-630-9625
NCR www.ncr.com/retail	800-Call-NCR	SI Systems www.sihs.com	610-252-7321
Newcastle Systems www.newcastlesys.com		Snapfulfil SaaS WMS www.snapfulfil.com	843-577-5007
Newell Rubbermaid www.newellbrands.com		Speech Interface Design, Inc. www.speech-interface.com	412-323-1135
Omnitracs www.omnitracs.com	800-348-7227	Speedrack Products Group, Ltd www.speedrack.net	616-887-0002
ONSET www.onsetcomp.com		SPG International www.spgusa.com	847-541-6500
Polymer Solutions International www.prostack.com	877-444-7225	Spiratex www.spiratex.com	734-641-4111
Postea postea.com		Stamps.com www.stamps.com	
Presto Lifts www.prestolifts.com	508-222-0177	Stanley Vidmar www.stanleyvidmar.com	610-776-3810
Pro Line www.1proline.com		SymphonyEYC www.eyc.com/gold	404-355-3220
Ralphs-Pugh Co. www.ralphs-pugh.com	707-745-6222	System Group www.system-group.it	39-0-536-836-542

## WAREHOUSE/DC

### EXECUTIVE GUIDE TO SUPPLY CHAIN RESOURCES

Company Name	Phone Number
System Logistics Corp. www.systemlogistics.com	207-784-1381
Systems Application Engineering (SAE) www.saesystems.com	713-783-6020
Tailift USA Co., Inc. www.tailift-usa.com	909-930-9801
TECSYS www.tecsys.com	514-866-0001
TEKLYNX International www.teklynx.com	414-228-3335
TGW Logistics Group www.tgw-group.com	231-798-4547
Topper Industrial www.topperindustrial.com	262-886-6931
TotalTrax www.totaltraxinc.com	302-514-0600
TranSystems www.transystems.com	816-329-8700
TriEnda LLC www.triendacom	608-742-5303
Uline www.uline.com	800-958-5463
UNARCO Material Handling, Inc. www.unarcorack.com	615-384-3531
UNEX www.unex.com	732-928-2800
UniCarriers www.unicarriersamericas.com	815-568-0061
Van der Graaf www.vandergraaf.com	905-793-8100
VARGO Companies www.vargosolutions.com	614-876-1163
Viastore Systems www.us.viastore.com	616-977-3950
Vidir Inc. www.storevertical.com	204-364-2442
Warehouse Specialists Inc. www.wsinc.com	920-830-5000
Webb-Stiles Co www.webb-stiles.com	330-225-7761

Company Name	Phone Number
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**Fax:** 262-549-3466

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**Email:** marketing@us.yusen-logistics.com

www.yusen-logistics.com

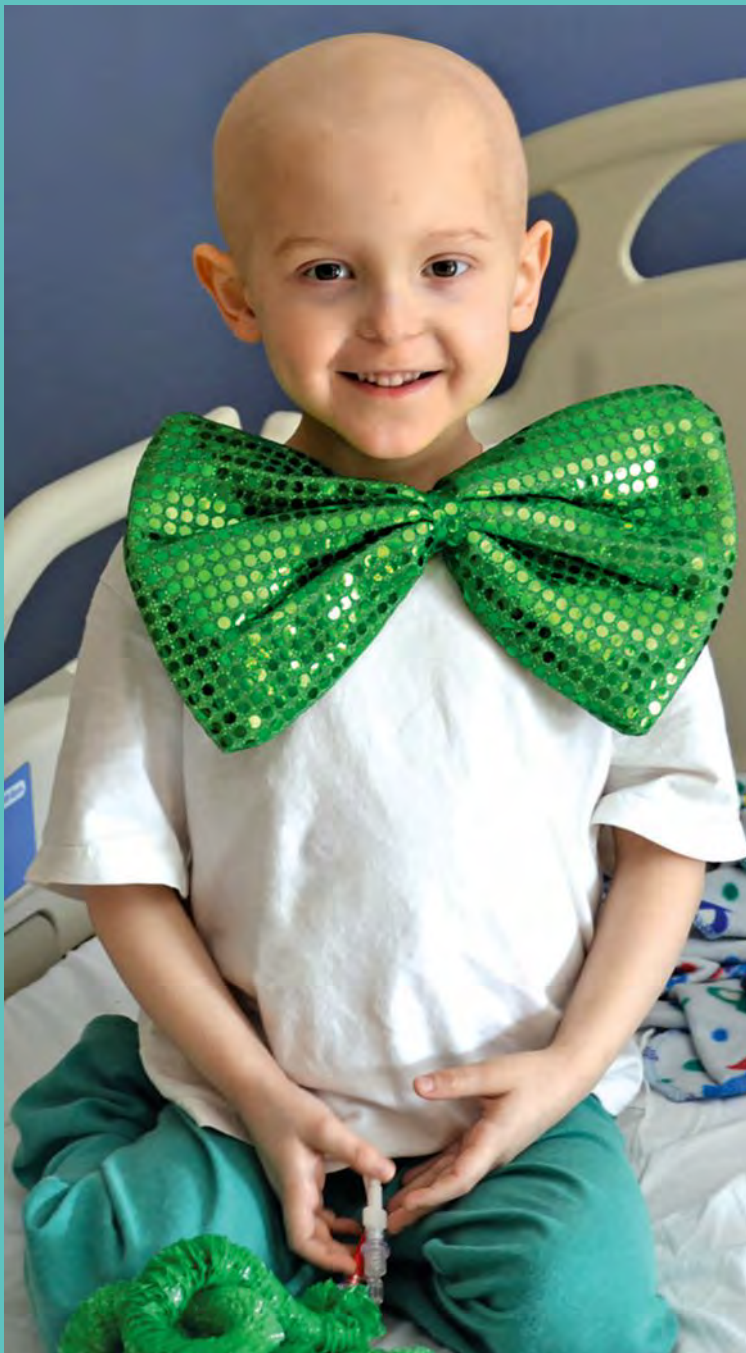
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Zoro Tools, Inc.

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**Jake, five years old, stage 3 neuroblastoma.**

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\*FreightWatch International, Supply Chain Intelligence Center: Annual Cargo Theft Report 2014.