

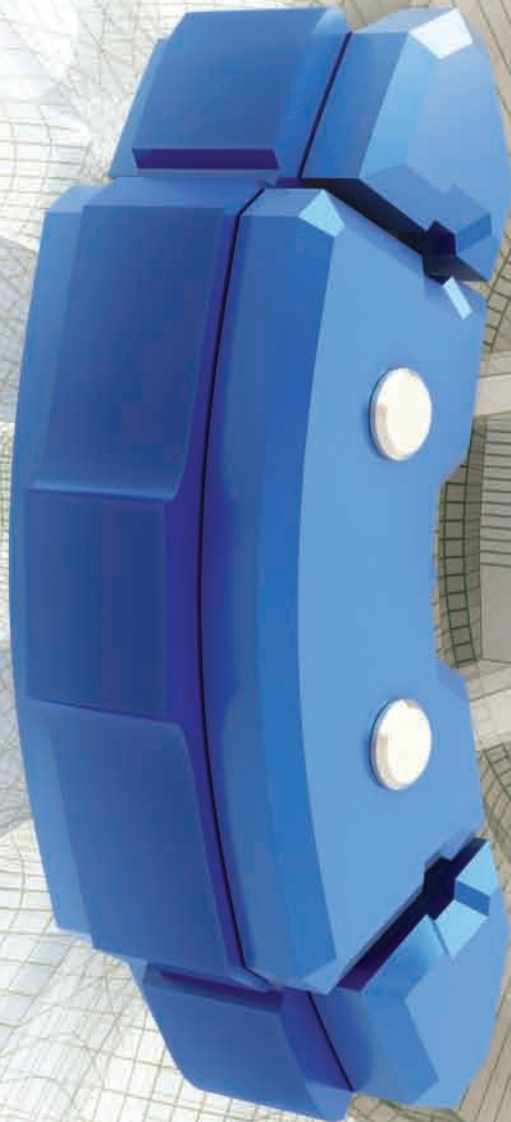
# EDGE

A Ryder System, Inc.  
publication

Transportation and  
Supply Chain Solutions  
For The Bottom Line

# Bendix

Driving  
an efficient  
Supply  
Chain







# When drivers pull out onto the open road,

there's one component they count on to perform flawlessly time after time – their brakes. For nearly 85 years, Bendix Commercial Vehicle Systems LLC (Bendix) has driven innovation in the development of active vehicle safety technologies, energy management solutions, and advanced vehicle braking systems. Today, the company's well-earned reputation for reliability, performance, and outstanding customer focus makes the outlook for this global brake systems leader... unstoppable.

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**T**oday's Bendix automotive businesses began producing air brakes in a small corner of the Westinghouse Union Switch and Signal company in the early 1920's. With automobiles giving Americans greater mobility, in 1927 innovative auto engineer, Vincent Bendix, formed the Bendix Corporation to produce Safety Servo vacuum brakes. By 1930, Bendix Aviation Company and Westinghouse Air Brake had joined forces to produce air brakes for heavy vehicles.

In 2002 Bendix Commercial Vehicle Systems LLC (Bendix) became a part of the Knorr-Bremse Group, the worldwide leader in braking technologies for trains and commercial vehicles. And in 2010, the company marked its 80th anniversary of operation. An industry trailblazer and acknowledged expert, Bendix develops and supplies leading-edge active safety technologies, energy management solutions, and air brake charging and control systems and components under the Bendix® brand name for medium- and heavy-duty trucks, tractors, trailers, buses, and other commercial vehicles throughout North America, Europe and Australia. Employing more than 2,700 people, the company is driven to deliver solutions for improved vehicle performance, safety, and overall operating cost.

Headquartered in Elyria, Ohio, 20 miles west of Cleveland, Bendix serves its customers from three primary manufacturing campuses and geographically dispersed distribution locations across North America. The multi-plant operation in Huntington, Indiana includes a state-of-the-art OE and aftermarket parts distribution center; remanufacturing, electronic component and legacy product OE manufacturing, as well as integrated vehicle modules and cab module assembly. The company's foundation brake-focused plant in Bowling Green, Kentucky is the site for production of foundation drum brakes and air disc brake assembly. And its manufacturing campus in Acuña, Mexico (across the border from Del Rio, Texas) produces valves and electronic assemblies, air dryers, compressors and spring brake actuators.

Like the automotive business, truck manufacturing is highly cyclical. However, since the economy hit its lowest point in 2009, truck production has doubled. At a time when other businesses were contracting, Bendix was growing. "We've increased our product content per vehicle tremendously through a combination of technologies and expanded capabilities," says Art Dilger, Director of Supply Chain Excellence for Bendix.

"On the technology front, we have developed active vehicle safety technologies such as full stability systems, collision mitigation systems, and air disc brakes that help improve highway safety for everyone. Our portfolio of safety technologies has grown

## AT A GLANCE

### Challenge

*Faced with rapid growth, increasing supply chain complexity and rising transportation and distribution costs, Bendix Commercial Vehicle Systems LLC wanted to increase efficiency and visibility and wring excess costs from its supply chain.*

### Solutions

*A suite of logistics services that streamline transportation and distribution activities, add agility to the supply chain, consolidate inbound and outbound domestic and international shipments, add cross-dock capabilities and dramatically reduce overall supply chain costs.*

### Benefits

*Improve supply chain efficiency and control costs by:*

- ▶ Reducing overall transportation and distribution costs by \$8 million
- ▶ Exceeding savings guarantee for three consecutive years
- ▶ Achieving 104% of corporate sales/shipping goal in Sparks warehouse
- ▶ Cutting average overtime from 3% to .09%, reducing labor costs by 15% and increasing throughput by 180% in the new Sparks warehouse



through new technologies we've developed and key technologies we've acquired. Because our customers are focused on the total cost of ownership, improved vehicle efficiency and safety, our ability to deliver robust solutions that are cost effective and have a rapid payback has been well received," he continues.

### **Making the supply chain vision a reality**

For Bendix and other global enterprises, managing extended supply chains that encompass large numbers of suppliers and customers is a fact of life. However, given the complexities of modern supply chains, few companies have the resources to go it alone. Consequently, more and more companies like Bendix partner with third-party logistics providers (3PLs) to optimize planning and operations decisions, coordinate supply chain activities, improve network visibility, save money and reduce risk.

Bendix develops and manufactures a wide range of global commercial vehicle products, while serving multiple markets, including the availability of thousands of replacement parts. As a result, well-synchronized logistics processes are a must. "Transportation, distribution and logistics aren't core competencies for us" says Dilger. "We've used a 3PL model to manage transportation and distribution for the last 30 years."

As Bendix ramped up to keep pace with customer demand, the company's growth began to strain its supply chain. At the same time, costs were quickly escalating. "Freight costs had risen to unacceptable and ever-increasing levels, necessitating a change," recalls Dilger. Dissatisfied with its existing 3PL partner, in late 2008, Bendix conducted a competitive bid process to find a new provider. The key criteria were cost savings and customer service.

"Our supply chain model begins and ends with our customers," says Dilger. "Timely delivery is an expectation for both original

equipment and aftermarket parts customers who are looking for scheduling flexibility and short lead times. That can make our goal of delivering on time a challenge. We wanted a supply chain partner who could help us maintain and further enhance our high levels of service, reduce freight costs and improve key supply chain metrics to control overall costs. Precision and reliability were key."

Ryder offered Bendix a year-over-year savings guarantee, a productivity commitment and a superior annual cost/price structure. Ryder's worldwide reach was also a must-have given the global scope of the Bendix supply chain. In 2009, Ryder set about helping Bendix optimize its transportation route engineering, global logistics, on-site freight management, freight bill audit and payment and packaging engineering processes.

### **Restructuring the supply chain to drive productivity and cost savings**

Bendix relies heavily on its inbound and outbound supply chains to keep components moving to manufacturing sites and products moving to customers. Bendix receives parts and materials from more than 500 suppliers for the production of its products. The company ships to major truck manufacturing customers in more than 20 North American locations, to smaller customers such as repair shops and dealerships at approximately 500 locations and ships aftermarket parts to thousands of locations each week. Given the geographic diversity of the Bendix customer base, improving the operational efficiency of its supply chain was no small feat.

"All of our major OEM customers stipulate their delivery expectations as part of multi-year agreements. Some customers want line-set delivery via daily or weekly runs. Others levy penalties if we miss weekly commitments. In the aftermarket, we differentiate delivery expectations based on part categories," says Dilger. "Every case is different, and in each case, customer expectations are high."

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Like many companies, Bendix is aiming for a just-in-time inventory model. Aftermarket parts are segmented based on the frequency and value of customer orders. "The top ten percent of our part numbers support 90 percent of order activity," Dilger notes. "We stock parts in our distribution facilities based on that statistic. We prefer that long lead-time suppliers establish consignment programs. Otherwise, we establish safety stock levels to minimize risk. For the original equipment market, we build to projected customer requirements. Only a few OEM programs require us to carry finished goods inventory."

The geographic scope, diversity and requirements of the Bendix customer base underscored the need for a more efficient supply chain. In 2009, Ryder and Bendix began working together to restructure the logistics network, improve visibility, fine-tune warehouse design and capitalize on network-wide synergies to enable advance planning, operational excellence and cost savings across the enterprise.

#### **Bendix raises the bar to drive transportation efficiencies**

One of the first challenges Ryder tackled with Bendix was procuring their less-than-truckload (LTL) and truckload (TL) shipments. At the time, Bendix was relying on a small base of carriers. "We migrated from several smaller carriers to contracting with our own carrier base on behalf of Bendix for all of its truckload and LTL freight," says Frank Tabacchi, Senior Logistics Manager for Ryder. "Leveraging Ryder's purchasing power, we've been able to negotiate far more competitive rates."

#### **Consolidating international shipments saves money**

Optimizing international shipments for Bendix provided another source of savings. Previously, the company used multiple forwarders to transport less-than-container-load (LCL) shipments. Ryder submitted a bid for international ocean and airfreight for Bendix that included consolidating container shipments in Germany. The impact was impressive and almost immediate. The LCL shipments are now consolidated into a weekly container that feeds multiple Bendix locations in North America. Results include faster transit time, lower costs, improved visibility and the ability to maintain a just-in-time inventory. "By consolidating international shipments, we were able to save \$800,000 in 2010," says Dilger.

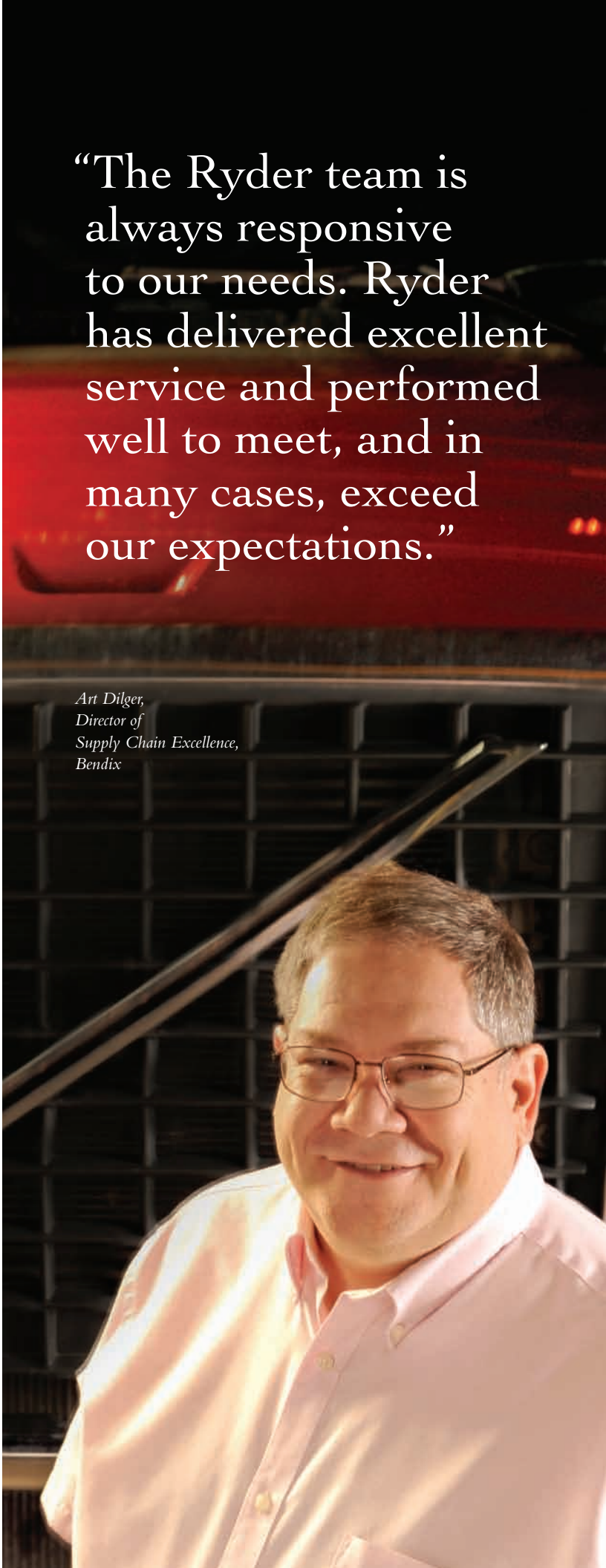
#### **Pool points control costs of shipping products to customers**

For many companies, rapid growth can be a double-edged sword that introduces new challenges. To help Bendix manage its outbound supply costs as the company grew, Ryder designed a pool point solution that ensured time-critical deliveries to customers and consolidated shipments to minimize delivery costs. Working together, Bendix and Ryder identified the optimal pool point based on Bendix customer locations and volumes, drawing on data obtained by managing Bendix's transportation requirements for the company.

By combining small LTL shipments into one truckload and routing them to regional sites for local distribution, Bendix was able to shrink delivery distances, reduce transit time, improve customer service and save more than \$200,000 in the first year.

"The Ryder team is always responsive to our needs. Ryder has delivered excellent service and performed well to meet, and in many cases, exceed our expectations."

*Art Dilger,  
Director of  
Supply Chain Excellence,  
Bendix*







*The Ryder/Bendix team meets on a regular basis to evaluate trends and make the necessary adjustments to meet their performance goals and keep customers satisfied.*



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### **High-volume truckload lanes increase trailer utilization**

International inbound freight forwarding and outbound customer shipments were not the only aspects of the supply chain that yielded savings for Bendix through consolidation. Ryder extended the concept to the tractor-trailers themselves. Using load bars, Ryder was able to double-stack materials that otherwise couldn't be. "With the load bar solution, we can floor-load a layer of pallets, place load bars connecting the interior sides of the trailers above the floor-loaded pallets and get more freight inside the trailer. Load bars increased cube utilization by 45 percent. This allowed us to maximize load capacity, reduce shipment frequency and save more than \$280,000 a year with our highest-volume truckload lane," says Tabacchi.

### **Freight bill audit and payment automation saves money and improves decision-making**

In any given year, Bendix processed a staggering 75,000 invoices. Internal processing systems had not kept pace with the company's rapid growth and, as a result, only 20 percent of those invoices were processed electronically. This was a costly undertaking on several levels, involving labor, materials and lost income. Growing customer demand made Bendix question the status quo.

To streamline the process and eliminate unnecessary costs, Ryder loaded all contracted rates for Bendix into its freight bill audit and payment system. "Now, 91 percent of invoices are electronic," says Tabacchi. "When an invoice comes in via Electronic Data Interchange (EDI), it bounces up against the contracted rate in the system and is automatically audited. Bendix has dramatically reduced errors and the high costs of manual data entry, overpayment and recovery. In addition,

the payment process is faster and the carriers are paid to their contracted rates and payment terms."

Before partnering with Ryder, Bendix lacked the visibility it needed. Now, with a planned and visible network and access to up-to-date data, Bendix has a tighter handle on freight expenditures. Through a new customer portal, users can generate reports that break out their transportation spend, enabling more informed decision-making.

### **Reduced premium carrier base to improve carrier rates for expedited shipments**

For a company facing a relentless continuum of customer delivery stipulations, Bendix often had to resort to premium or expedited delivery modes to get products to customers on schedule. In the past, expedited shipments were bid out to a core list of premium carriers – a list that provided a further opportunity for cost savings. To reduce the cost of expediting outbound customer and inbound supply shipments, Ryder went out to that carrier base and negotiated more favorable rates. Drawing on both Ryder and Bendix's shipping spend, Ryder was able to save Bendix an additional \$200,000 in the first year.

### **A new cross-border bonded warehouse helps pay for itself**

In 2010, Bendix relocated its Fresno, California production facility to its Acuña, Mexico campus as part of the company's strategic manufacturing alignment plan. Now, with a manufacturing campus of three facilities in Acuña, Bendix grappled with a shortage of warehouse space for supplies coming in from overseas and bound for Mexico. Bendix also had an existing cross-border warehouse provider in Texas. However, the growing volume of new freight bound for the Acuña



production facilities was more than the warehouse could handle.

The challenge? Expand warehouse capacity and save money at the same time. Ryder helped Bendix procure a larger, yet less expensive cross-border warehouse in Del Rio, Texas. The new site was secured and bonded, which enables Bendix to pass products through the United States from overseas to Mexico without paying customs duty. Both domestic and international freight shipments flow into the Del Rio warehouse, where they are consolidated for transport to the plants in Mexico. In addition, finished goods are shipped to, or picked up, by customers at the warehouse. The combination of a lower-cost facility and less overtime costs generated cost savings of \$125,000 in just a year.

### **Managing the Bendix distribution center in Sparks, Nevada**

In May 2010, Bendix awarded Ryder the management contract for its west coast distribution center. "Ryder worked hard to facilitate a smooth transition and delivered on all of its commitments," notes Dilger. "The team's performance in managing our transportation challenges was a major reason we turned to Ryder to help us modify and manage the distribution center."

Using data from the Bendix freight bill and payment system, along with insights from its team of industrial engineers in Novi, Michigan, Ryder launched an in-depth analysis to determine the optimal location for the distribution center. The analysis considered all Bendix manufacturing facilities and customer ship-to locations. The conclusion? The Bendix existing facility in Sparks, Nevada remained the best location, albeit with extensive process improvements. "After careful evaluation, we determined that Sparks still made the most geographic sense and with improvements Bendix could reduce overhead costs, hit 97 percent

inventory accuracy and exceed corporate shipping goals," says Tabacchi.

Those improvements included redesigning the warehouse layout, moving racking to minimize wasted movements, relocating high-volume parts closer to shipping and receiving doors, re-engineering the storage, shipping and receiving area and implementing continuous improvement and lean initiatives. As a result, order throughput jumped by 180 percent.

"Before, we picked or put away 18 orders per hour. Now we pick 27 outbound orders and put away 38 inbound orders per hour," says Dilger. Average overtime is down to .09 percent from three percent and labor costs dropped by 15 percent in the first year. To keep efficiency high, Ryder placed a manager supported by 10 full-time resources at the site, all focused on driving productivity and identifying opportunities for further improvements.

### **Results and benefits**

Just three years into the contract, Bendix has realized significant cost-saving and productivity-boosting benefits. Today, the company is more interconnected with its supply chain partners and even more strategically positioned to deliver outstanding customer service. With new levels of intelligence, efficiency and automation, Bendix is better able to anticipate, control and react to volatility in the supply chain. In addition, the company has improved its ability to manage inventory and order fulfillment by planning and executing shipments with precision. In so doing, Bendix has saved an estimated \$8 million since the contract began in 2009.

"Our partnership with Ryder allows us to focus on our core competencies while we allow the logistics experts to handle how and when our parts, supplies and products move," says Dilger. "The Ryder team is always responsive to our needs. Ryder has delivered excellent service and performed well operationally to meet - and in many cases exceed - our expectations. In the end, small incremental improvements can add up to a significant edge."

"The Bendix plants and corporate personnel treat Ryder as a true partner and not just another supplier," Tabacchi adds. "Thanks to their support and the diligence of the Ryder team, together, we've been able to meet our contracted goals."

### **Driving new cost-saving opportunities**

Bendix and Ryder continue to work together to uncover new ways to improve efficiency, save money and achieve peak performance by creating synergies. For example, preliminary discussions are underway for an end-to-end supply chain management solution that will facilitate every activity involved in acquiring, moving and storing products from point of origin to point of consumption.

With a total network solution, Bendix will be even better equipped to dynamically plan and execute product movements in response to shifts in demand and buying patterns, while remaining focused on their goal to dramatically reduce cycle times, inventory and operating costs. With a refreshed 360-degree view of inbound order and outbound supply chain processes, the company will be able to centrally manage inventory across its distributed network of suppliers and optimize strategic supply chain planning decisions to fulfill orders, shipments and inventory, drive integration and visibility to work more efficiently than ever. **E**



Ryder Supply Chain Solutions is an end-to-end supply chain partner with nearly 80 years of experience in helping customers in North America, the UK and Asia transform their supply chains by delivering the best in operational execution. Ryder provides a full range of services, from optimizing day-to-day logistics operations to synchronizing the supply of parts and finished goods with customer demand. At Ryder, we understand that when it comes to logistics, **Execution is Everything.**

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