

Knoll, Inc.:

Customized Solution for Consolidating Outbound Shipments Yields High Marks

Summary

Knoll Incorporated is a global leader in office furnishings, design and manufacturing. The company wanted to consolidate the outbound shipments of several North American manufacturing plants into one network. This consolidation would allow customers to receive entire orders simultaneously and reduce overall transportation costs. Penske's solution to develop consolidation warehouses and a unique load plan layout resulted in a ten percent reduction in transportation and warehousing costs and a 45 percent increase in their overall customer satisfaction rating.

Challenges	Solutions/Results
<ul style="list-style-type: none">▪ To consolidate outbound shipments of Knoll's four North American manufacturing plants into a single distribution network.▪ To maximize Knoll's existing infrastructure during an economic downturn with little or no interruption in business.▪ To increase on-time delivery rates, order accuracy and shipping efficiency to Knoll's customers.	<ul style="list-style-type: none">▪ Penske established two centrally located mixing centers, resulting in a 10 percent reduction in transportation and warehousing costs.▪ Penske and Knoll devised and met an aggressive 60-day transition strategy for two existing cross-docking and manufacturing facilities. During this time, Penske moved more than 10,000 products enabling Knoll to maintain productivity levels.▪ Penske deployed its unique "footprint" loading approach to expedite loading and increase product visibility. Knoll realized a 45 percent increase in customer satisfaction.

Getting Started

With an expansive network of more than 400 dealerships and showrooms in North America, Europe, Asia and Latin America, Knoll has worked diligently to ensure every customer receives each order efficiently, on-time and accurately. To accomplish this, Knoll employed Penske Logistics in July 2001 to consolidate outbound shipments of its four North American manufacturing plants into a single distribution network.

Prior to 2001, customer shipments were unconsolidated. As each of Knoll's manufacturing plants are responsible for different product lines, the company had to make multiple shipments to each customer to fulfill a single order. This distribution approach created a costly gap of inefficiency within Knoll's operations.

Look Before You Leap: Taking Stock of Knoll's Current Distribution Operations

Knoll knew a major shift in its transportation and distribution strategy would be no small task. They needed a third party logistics provider which was first willing to acquire a deep understanding of the company's current distribution operations and infrastructure. Furthermore, as the furnishings industry was entering an economic slump in 2001, Knoll needed a 3PL that could provide flexible, cost-efficient solutions.

"We could not risk the cost and customer implications of a blind change in our logistics strategy. Penske Logistics' willingness to understand every nut and bolt of our distribution processes was crucial to a successful change in our operations."

Rich Cirulli, Vice President of Logistics, Knoll, Inc.

Dedication at every turn.

PENSKE

Penske Logistics met these initial requirements and, once selected, hit the ground running. The first step was to conduct an in-depth analysis of Knoll's current operations. For nearly 14 months, Penske closely monitored product volume, transportation rates, delivery points and freight combinations. During this time, the unstable economy allowed Penske to acquire data representing the entire spectrum of productivity, while enabling Penske to theorize logistics strategies in a variety of economic conditions.

Penske's next step was to help Knoll develop benchmarks that would allow for the measurement of future success. Using a combination of Knoll and Penske financial specialists, the team analyzed previous financial statements to determine areas of high costs. The team quickly identified two key areas for cost improvement - transportation and labor. These areas would be closely measured throughout the change in Knoll's transportation and distribution strategy.

Maximizing Knoll's Existing Infrastructure

With a solid understanding of current operations and an established set of benchmarks, Penske determined the most cost-effective strategy for consolidating Knoll's customer shipments. The result was a two-pronged solution involving Penske's experienced Distribution Center and Transportation Management teams:

- Establish two centrally-located mixing centers to consolidate products from Knoll's four manufacturing plants
- Re-engineer warehouse infrastructure and load planning processes

Initially, Penske recommended establishing two new mixing centers in Holland, Michigan and Allentown, Pennsylvania. As planning progressed, productivity at Knoll's manufacturing plant in East Greenville, Pennsylvania reached an all time low. This provided a unique opportunity for Penske. Rather than have Knoll spend an estimated \$1 million leasing a new facility in Allentown, Penske could convert the existing facility in East Greenville from an under-utilized warehouse to one of the proposed mixing centers.

In August 2001, Penske and Knoll began the East Greenville plant conversion. Penske faced several challenges during the process. The layout of the facility consisted of three separate buildings and was not optimized for the functions of a distribution center. Penske re-engineered each of the buildings to the optimal footprint, bulk and buffer layout to maximize efficiency and track inventory location.

Penske devised an aggressive 60-day strategy to move Knoll's manufacturing operations out of the facility and move Penske's mixing center operations in. The transition was divided into thirds - as Knoll moved out of one-third of the facility, Penske followed behind and immediately began racking and installing sprinklers in each of the buildings. On Day 61, Penske proved they had successfully met their aggressive schedule. During the 60-day transition schedule, Penske operators had shipped approximately 10,000 units to customers, enabling Knoll to maintain productivity levels and minimize the impact of the transition.

The second mixing center in Holland, Michigan also presented a challenging conversion process. The existing facility had been laid out to suit a cross-docking approach. Penske was required to convert the facility and its operational processes to meet the storage and labor demands of a mixing center. At 165,000 square feet, this mixing center would not only be required to handle its half of Knoll's outbound storage and distribution, but also needed to temporarily alleviate a significant portion of East Greenville's distribution load. Furthermore, Knoll had recently shortened its production time from two weeks to one week. Products now had to be moved within three days of inbound receipt.

The pending demands on the Holland mixing center and Knoll's shortened production time prompted Penske to create a unique warehouse layout strategy. Knoll needed a warehouse layout that allowed for easy racking and storage of products, while enabling quick movement of the product for outbound shipment.

Penske dismissed conventional loading strategies and developed a "footprint" approach. Load plans, which determine how products are loaded into a trailer for customer delivery, are sent to Penske operators two weeks in advance of the scheduled outbound shipment date. The plan is uploaded into

Penske's logistics software to determine how products should be racked and sequenced for expedited loading. This "footprint" is then set up to mirror the trailer load. Incoming components are consolidated and stored to match the "footprint" until outbound shipment.

Penske's unprecedented "footprint" approach worked. New loading procedures required by this approach were implemented at the two mixing centers. Penske and Knoll employees were cross-trained to follow the new racking, storage and loading procedures. In addition, Penske established stricter scanning requirements, enabling Knoll to improve inventory and order accountability.

Reduced Costs, Increased Productivity, Improved Customer Service

By January 2003, Penske and Knoll had reached their goal with little interruption to Knoll's overall business operations. Knoll customers were now receiving orders in a single shipment. All products from Knoll's manufacturing plants were being routed to a specified mixing center. As a result, Knoll has reduced its overall distribution costs, including a 10 percent reduction in transportation and warehousing costs.

Penske's unique "footprint" method has also enabled Knoll to improve order accuracy and expedite outbound shipping. Because each product received during an inbound shipment is planned for in the "footprint," Penske can easily identify missing items and quickly load trailers. By streamlining its product flow, Knoll has realized a 45 percent increase in its customer satisfaction rating for shipping and transportation.

In addition to reduced costs and increased customer satisfaction, Penske has provided Knoll with several more indirect benefits. Centralizing shipments has increased order visibility, providing Knoll with information that was not captured or unavailable in the past. Through Penske's Open Order Report system, Knoll can measure the impact of production delays on shipping operations and customer service while tracking open order issues. This information is used to identify and correct problems during the order-to-fulfillment process, as well as keep customers informed on order status. By allowing Penske to manage open order issues, Knoll's sales force spends less time resolving problems and more time selling.

"Knoll's ability to ship customers a complete and accurate order provides us more than cost savings - it provides us a competitive advantage in the marketplace. Our customers are more satisfied and our operations, from the warehouse and beyond, are more efficient."

Rich Cirulli, Director of Logistics, Knoll, Inc.

Penske's success at the East Greenville and Holland mixing centers has paved the way for future collaboration with Knoll. In addition to being Knoll's logistics operator, Penske recently began providing Knoll with LTL, inventory clearing and field support services. With an increased understanding of Knoll's operations, Penske continues to improve logistics operations and, ultimately, customer satisfaction for Knoll customers throughout North America.

For more information on Penske Logistics solutions, visit www.GoPenske.com.

<p>Penske Logistics Corporate North America Route 10 Green Hills Reading, PA 19603 United States</p> <p>Phone: 1-800-221-3040; 1-610-775-6291 Fax: 1-610-775-2449</p>	<p>Penske Logistics South America Av. Fernando Cerqueira Cesar Coimbra 398 - 1 Andar Alphaville Empresarial Barueri, SP Brazil 06465-090</p> <p>Phone: +55-11-3306-0051 Fax: +55-11-3306-0067</p>	<p>Penske Logistics Asia Workshop 37#A, 378 North Meigui Road Waigaoqiao Free Trade Zone Shanghai, China 200131</p> <p>Phone: 86-21-5046-2035 Fax: 86-21-5046-2039</p>	<p>Penske Logistics Europe P.O. Box 142 4700 AC Roosendaal The Netherlands</p> <p>Phone: +31 165 576700 Fax: +31 165 576798</p>
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