

The JIT jump may take some convincing

Logistics plays a key role in moving to a lean manufacturing model

By David Hannon

The role of the logistics organization is key to any major lean supply chain initiative, but getting the logistics organization to think "lean" may take more work than many companies expect. While many lean strategies happening within a plant or on the factory floor may be logical to the manufacturing organization, the logistics and transportation-related strategies behind lean may be counterintuitive to what the logistics operation has been doing for many years.

The first step in getting logistics in line with a lean initiative is to gain control and visibility into the inbound network from suppliers. Without that visibility and control, the lean network simply won't happen. Often, a lean implementation requires changes in routing, modes, and timing of shipments and if suppliers still manage the carriers, those changes are significantly more difficult.

"One of the key lean principles is visual management and without network ownership you can't have visibility into the movements," says Robert Martichenko, president and founder of LeanCor, a third-party firm in Florence, Ky. that specializes in lean logistics. "A lean logistics network is a planned logistics network. Window times for deliveries are planned, dispatch times are planned to the minute, and unloading times are planned. It's similar to the way airlines have planned times and loading."

If a company does not have control and visibility into its inbound logistics network, a buying organization may have to negotiate with suppliers to extract the freight costs from the total part cost, which often gets complicated.

"The supplier may send a [cost] which is not really a competitive price for transportation and the procurement organization has to negotiate back and forth until it gets a more realistic number. Many organizations never get past that hurdle in their move towards lean."

In addition to network ownership, there are two other core logistics principles needed to drive a lean initiative: creating an accurate supplier file and creating an accurate packing file. The supplier file needs to be specific to logistics and include every supplier's address, including the addresses they ship from, not just their headquarters, so transportation decisions can be made. A supplier file should also include a description of the supplier's shipping capabilities—the type of dock it has, its shipping hours, manpower, etc.

A packaging file involves creating a detailed list of the sizes and types of packages that a supplier provides. Lean initiatives mean maximizing the use of container and trailer space, which requires a detailed knowledge of packaging/palletizing practices. Unfortunately, the only way to do this at many companies is to take the labor-intensive step of measuring all of the boxes, crates and packages that come into each facility.

In a recent presentation at the Northeast Supply Chain Conference, consultant Robert Abair recommended lean organizations prioritize inbound inventory into A, B and C categories, and focus primarily on A parts, which would account for 80% of inventory costs. He said reviewing and optimizing the size of packaging used can better allow the most important items to flow directly to the point of consumption on the factory floor instead of spending time on the dock being unloaded and repackaged for the trip from the dock to the factory floor.

Lean vs. global

Universal Instruments, an electronics manufacturer in Binghamton, N.Y. learned a valuable lesson about the contrasts between lean supply chain and global sourcing. The company has been focusing on a lean network for its U.S. factory, but in an effort to create competition in its supply base, began sourcing some parts overseas. While its current suppliers took notice of the move, the impact on its inbound logistics network to the lean manufacturing site was educational to say the least.

"We learned we have to keep most of our sourcing local if we want to achieve our lean goals," says Scott Gerhart, director of strategic sourcing and a 20-year veteran with Universal. "We started with large containers coming weekly from China but because we had to order six weeks out, we could not get the right quantities to run in our lean plant. That meant we were either holding inventory or expediting shipments by air, which defeated our lean goals."

For the majority of its U.S. supply, Universal has a milk run set up that visits suppliers every day or two and runs parts into the New York plant. The frequency of delivery depends on the cost of each part—the more expensive parts are delivered more frequently to avoid inventory holding costs.

Every Sunday night, the company's ERP system provides the week's requirements direct to each supplier. But the majority of its efforts in the short-term are focused on reducing the number of total parts brought in-bound to the plant so the flow of materials can be smoother. On the carrier side, Gerhart says Universal will be asking for more data from its domestic logistics providers to help drive the lean movement.

Seeing the forest

But perhaps the most difficult challenge in creating a lean-friendly logistics network is to see the big picture instead of focusing solely on cost. There are some steps to creating a lean environment that many logistics and inbound supply managers will view as costly.

"Lean focuses on total system cost and recognizes that you can't look at costs in isolation," Martichenko says. "Even though transportation costs show up clearly on the P&L and they're high, the focus needs to be on total logistics costs, which includes inventory and supplier management as well as transportation. The inventory costs can be half of what transportation is and it's not on the P&L or visible."

Gerhart says he continually has to remind buyers that "cramming more stuff onto a pallet is no longer our goal" in reducing shipping costs and optimizing inbound flow of materials.

For example, in a lean logistics network, there are three key changes that need to be made, according to Martichenko: Reduce standard lot sizes or orders; increase the number and frequency of deliveries into a plant; and level the flow of materials into a plant. The first concept flies in the face of the "buy in bulk" mentality of many supply and logistics organizations that have been working to fill truckloads with larger shipments.

And the increase in frequency of shipments often creates visions of clogged docks and angry truckers while increasing transportation costs dramatically. And leveling the flow of materials? Many supply chain managers would say that's just not possible.

"But it's been proven time and again that these things can be done and can reduce inventories while reducing transportation costs at the same time," says Martichenko.

In a lean logistics network, window times for deliveries, dispatch times, and unloading times are planned, almost similar to the way airlines have planned to the minute. That level of service from carriers may require a weeding out of providers that can't meet that service level at any cost. Once the lean network begins functioning, carriers often find they can better utilize their assets because at least one of their customers is working to a predetermined schedule.

"Typically in a lean environment you want to protect the plant from LTL shipments," says Martichenko. "That doesn't mean LTL is eliminated, but it needs to be consolidated as much as possible at a cross-docking facility so milk runs can pick measured shipments up for more regular delivery."

Outsourcing in lean

The decision to outsource logistics in a lean environment should be based on a careful review of current and future core competencies within the organization. Martichenko says there are three core competencies an organization should review in this decision: logistics engineering including the staff's level of sophistication and the technology available in-house; transportation infrastructure; and facility infrastructure, including a cross-dock facility.

"If you've got that in place, then you should be ready to take on lean on your own," Martichenko says. "But if that's not present and not on the priority list, then a 3PL might have the people and process ready you needed to gain those competencies."

In his book, *The Toyota Way*, Jeffrey Liker compares the lean manufacturing and logistics strategies of Toyota to those of Ford Motor Co., both of which leveraged third-party logistics providers in their move to lean. Liker points out that the executive in charge of Ford's logistics at the time, "handed off an amazing amount of responsibility to an outside vendor with which Ford did not have a strong partnership—at least not in this area and on a project of this magnitude."

Liker goes on to point out that the partner Ford worked with did not have specific knowledge and background on Ford's lean objectives and goals and was therefore doomed from the start. The lesson: If you do entrust part or all of your logistics network to a third-party in a lean environment, be sure it is a close partner and is clearly educated and updated on the goals of the entire lean initiative, not just the logistics portion.