INTERNATIONAL LEAN LOGISTICS
Beyond the Four Walls

Lean and supply chain management has much in common, especially with -

- emphasizing pull, not push, for product flow
- recognizing the two wastes of time and inventory
- highlighting there are two flows-product and information
- elevating the importance of supplier performance on success

Lean logistics, like lean manufacturing, focuses on the four walls of a structure and within a domestic organization. This time the distribution center, instead of a factory. Extending beyond the warehouse, where control is easier and there are fewer, different parties are involved, is limited.

Sometimes these challenges are not addressed or appreciated with lean supply chain management. These include -

- International sourcing-Procuring finished goods or raw materials in China, India, Germany, Brazil and elsewhere outside of North America creates a significant obstacle to lean. The order-to-delivery time is long. Time is a waste, and it compounds the inventory waste issue by making firms buffer and carry more inventory than is needed to compensate for the time. Being lean with a 20-40 day transit time brings a unique test to developing lean SCM
- Accounting-Standard cost accounting and generally accepted accounting do not recognize waste as lean does. Not having financial support to waste and value identification makes lean difficult to implement and sustain. Inventory and time are not regarded as lean does. Inventory is not an asset for lean. Accounting systems do not recognize time. Rework is not treated the same with accounting.
- Organization silos-Supply chain management and lean are processes that cross organization boundaries. Implementing a process that goes horizontal on a vertical and functionally defined organization creates gaps in both processes. These gaps create areas where waste can develop and where removing it can be difficult.

There are many suppliers and many logistics service providers in a supply chain. Some of these are visible; some are less visible. Many suppliers or logistics service firms do not practice lean. Taking lean outside the four walls of the company into other firms brings global complexity into the challenge of implementing and becoming lean.

So the challenge of lean is compounded when it comes to international. Many parties and trade partners are involved which challenges the abilities to remove waste from a supply chain that extends thousands of miles. For example, with an international transaction there are -

* Different groups within the company buying the product who have a role in the movement of information and product

* Different groups within the company selling the product who have a role in the movement of information and product

* Different outside organizations, including:

  - Banks
Add in the interchange of information between and among these various parties. The challenge is that each of these parties has a different role and responsibility. Each is working on the internal efficiency of their operation and not on the efficient movement, with no waste, of your shipment.

The reality of business is that it is global with suppliers, plants and customers worldwide. These trillions of dollars international operating arena is a challenge for lean.

**Lean Benefits**
The benefits of lean for international are significant with managing the flow of products and information:

1. Compressed cycle times
2. Reduced logistics costs
3. Decreased days of inventory, better turns and sales yield maximization
4. Increased supply chain visibility
5. Improved supplier and supply chain performance
6. Enhanced customer service
7. Increased profits

Time compression creates opportunities to reduce inventory levels and logistics costs. However firms that do offshore sourcing are, by definition, adding time and, in turn, costs and inventory. Import cycle time also affects the utility, value and placement of inventory. And these affect customer service, sales revenues, inventory-to-cash cycle time and profits.

Lower logistics costs come from the predictability of an operation that does not have waste. Predictability means greater usage of planned modes and planned shipping schedules. It means less expedited shipments at higher cost.

Inventory improvements come from less need for safety stock and faster movement through the supply chain to the store or to the customer’s door. Right inventory, at the right place and at the right time are the norm.
Supply chain visibility means importers manage purchase orders, supplier performance and logistics service. It cannot be done well with emails and faxes. They do this with online technology to provide needed integration. The technology would have exception and event management capabilities so that scheduled events occur or that remedial actions take place quickly. All this removes blind spots in the supply chain that create waste.

**Lean Determination**

To be lean, companies should first assess their present operation. They must know how effective their practices are. The import supply chain must be analyzed. Firms should define what is expected and then how well the present operation functions.

Companies should analyze their offshore supply chain process. This means making sure that the operation uses a process, both internal and external. Firms can confuse transactions with being a process. The import supply chain is horizontal and crosses many internal department and many external sourcing and logistics firms. Companies that fail to understand the process struggle with achieving lean logistics. Instead of being lean, they force their inefficient practices on their external suppliers and logistics firms. This can compound the inability to be lean. Common indicators of a non-lean operation include:

- Poor information flow. Company does not know when a container will arrive and what it will contain. Containers show up at the warehouse with very little notice.
- Poor product flow. Firm struggles with having inventory flow. The lead time has too much variability. The result is ebbs of inventory bunching and gaps without any inventory.

Two performance metrics should be used to assess the operation. One is the perfect order, namely that each purchase order is received complete, accurate and on time. This is clear as to what it means.

The other is the total purchase order to delivery cycle time. There are three parts to the offshore supply chain—the internal purchase order preparation, supplier performance and logistics performance. The measure should include actions that trigger the purchase order and determine the need. Many firms waste days, even weeks, with the purchase order activity. And that lost time has an impact then on the suppliers' abilities and logistics service providers' capabilities to provide the perfect order.

Another time factor in the purchase order-delivery cycle may arise when orders are placed with U.S. firms who use offshore suppliers, contract manufacturing and factories. Each additional link in this information and product exchange can add inefficiency to the cycle time and to the required lean result. Importers must work with these suppliers to make sure that the lean initiative does not falter.

**Visual Description**

An excellent way to understand the international supply chain is to visualize it. The current condition of a supply chain can be described visually using "value stream mapping". The value stream comprises all the steps necessary to bring a product from its raw materials through production to delivery to the customer. With value stream mapping, all the steps in the supply chain process are identified and assessed as to whether they add value or create waste. Typically, there are two streams or flows to be described and analyzed. These are the flow of product and the flow of information.

This technique works well with the "pull" or Kanban basic approach of supply chain management. Inventory is pulled, not pushed, through the supply chain from customer back through to suppliers. With the pull, excess inventory
should be removed from the supply chain.

Mapping is a tool to visualize what goes on. The picture is a way to see the non-value, waste-creating actions for both the product and the information flows. The two flows should be integrated. Otherwise opportunities for non-value added activities and for inconsistent actions are created.

Value stream mapping looks at a key product(s) that have high volume and/or high profit margins. The logistics process for each product is mapped, analyzed, waste is identified and a new process for the future is defined and implemented.

**Data Collection**

The mapping involves gathering customer or store information, depending on whether you are a wholesaler/distributor, manufacturer or retailer. Draw the process - from what triggers the purchase order, back through the suppliers and logistics providers, to delivery.

There can be 15 or more parties involved with the movement of product and information, and both the product and financial chains, so the supply chain can be complex to visualize. And the size means collaboration and co-operation are needed between and among all the parties involved for proper mapping and for identifying waste. A supplier in Shanghai whose key component comes from Thailand must participate actively in the mapping since all this is part of the process. This is not an option.

Or look at a customs broker who does not directly touch the product or the shipping container. He acts with the information and documentation to facilitate the movement of the product. But the linkage among the importer, customs broker, ocean carrier/air forwarder and delivering rail or trucker can create waste, by adding times and by stopping product flow.

Value stream mapping is a picture of the process or what is used as a process. The lack of a real process can create waste, or non-value-added activity. Global supply chain waste occurs as unneeded cycle time, inventory and cost. The cost waste often appears in the transportation and warehousing activities.
A company with no viable global supply chain process often has gaps in the "process" activities. In turn, redundancies occur at various points to compensate for gaps. These redundancies, with their extra and unnecessary work, are islands of waste in the flow. An example of a waste that can arise because of flaws and gaps in a process is expediting.

What also makes lean international supply chain management more complex and unique is that so much activity occurs outside the company. With lean manufacturing and domestic lean logistics, much of the activity occurs within the company.

Company people involved in global supply chain activities often push much of the waste they cause onto the outside parties. They do not understand the complexity and operations of the international aspect, or they have forced the outside activities to adjust to their lack of process and their waste practices. Demanding others to adapt to your waste activities is not collaboration, which is a two-way effort to reduce waste.

**Independent Eye**

Analyze the map below. It helps to have someone independent here. Someone who is too close to the activity may not be able, in identifying internal waste to "see the wood for the trees". Organizations have dominant departments and dysfunctions that can impede real process - and supply chain management is a process, a cross-functional one.
It is easy to place responsibilities on external parties without understanding what your company does to trigger their actions. See where the process is being forced to fit your company or some other entity and, as a result, creates significant waste. Designing the new process requires clear analysis and thinking beyond traditional logistics. Otherwise, one flawed process can replace another flawed process.

The import supply chain must be seen as one event, not as two separate events of sourcing and of logistics. The dichotomy can show on both the product map and the information map. This affects the handoff from supplier to logistics service providers. Assessing modes, carriers/forwarders, service and ports/airports can reduce time for key products.
More than 25% of purchase orders are not shipped as planned or are not delivered as planned. This significant statistic presents a real opportunity to reduce waste. Supplier performance and supplier lead times are important areas for potential waste reduction and process improvement.

Also, the distribution network may be outdated. It may have been built years before with different store or customer configurations, different products, and other topics. It may have been built when the focus was on storing inventory in warehouses, unlike now when inventory velocity is emphasized. Touching the product to store it often adds only time - a waste result, not value (see map at bottom of facing page).

Bypassing warehouses with cross dock or other transfer facilities at ports can remove time and inventory. Supply chain execution technology can give visibility from the purchase order through to delivery order. It can provide the way to allocate product in transit. Making this part of the new process reduces two key wastes - time and inventory.

Global supply chain management has significant "built-in" time because of the distance involved. This runs counter to domestic supply chains. The extended time can, in turn, create uncertainty and the need for many companies to build and carry additional inventories. Yet time and inventory are two areas of waste for lean to improve. So lean international logistics faces an additional challenge because of its inherent scope and the impact throughout the supply chain, especially within the company.

**Other Lean Practices**
There is much to become lean to assess and change practices and operations. Some points for international include:

- Use technology to manage supplier performance and to integrate the movement of information among and between all parties.
Design a process that is lean and includes all parties and that differentiates among different commodities and products and among different customers.

Collaborate with key suppliers and logistics providers.

Link demand and demand planning with replenishment and buying.

Reduce the number of suppliers and logistics service providers to streamline the supply chain, without sacrificing results.

Focus on supplier performance; control the supply chain at the international source. The offshore supply chain begins with the purchase order; transportation is a derivative of the purchase order and of supplier performance.

Understand transport differences and options such as ocean carriers offering different transit times, different sailing schedules, different destination ports and different canals to the East Coast (Panama Canal versus Suez Canal).

Align your financial supply chain with your trade supply chain. These two chains involve different sets of players with differing objectives and practices.

Use a 4PL or 3PL to manage your offshore supply chain. Work with a supply chain service provider that understands the total supply chain complexity and operation. His interest should be your supply chain, including your suppliers and purchase orders, not just your freight. The firm should use process, technology and people to do this. The people should be located in the same country and locality as your suppliers.

**Global Complexity**

Identifying non-value added activities is especially important for worldwide supply chain management. Any activity that adds time and inventory and cost to the already complex activities can obstruct supply chain effectiveness. Value stream mapping is a tool for seeing and identifying waste, both internal and external. Seeing the current activities and the waste can form the basis of plans to improve the supply chain. This procedure is especially critical for high-volume and high-margin products where the impact on the company bottom line is significant.

Collaboration and co-operation within the company organization and between and among trading partners is important for truly removing waste across the entire supply chain. Accelerating cycle time, increasing inventory velocity and reducing costs for the high-volume and high-margin products can affect return on investment and drive the benefit of lean for everyone to see.

Lean logistics for international business offers significant potential to identify and reduce time, inventory and cost (see map above). And given the size of the international supply chain, both for importing and exporting, the approach merits the effort for bottom-line results. Value stream mapping provides an important tool for understanding the present supply chain and designing a new one.