



CUSTOMER CENTERED MANUFACTURING

The state of lean is like beauty—it is in the eye of the beholder. Some companies have convinced themselves that they are doing lean while others believe that their current processes are so far ahead of lean that implementing it would actually be a step backward. And, then there's everything in between these two extremes. The root cause for these disparities lies in how you define lean. Search the web, and you'll encounter multiple definitions of the term.

BY **NARAYAN LAKSHAM**

Lean means removing waste—whether it has to do with manufacturing, purchasing, distributing or accounting. More precisely removing waste means eliminating non-value-added tasks for which your customers will not be willing to pay. This is a concept that is easy to understand. So, instead of talking about lean manufacturing, let us look at “Customer Centered Manufacturing”.

Manufacturers have realized that the cost of acquiring their customers is increasing, as is the cost of retaining them. Many manufacturing companies have switched from mass production to mass customization. The problem is that flexibility is harder to achieve in the face of shorter product cycles, increased customer demands, the pursuit of lower-cost locations and the race to new markets.

In the past, companies have tried to solve these problems by throwing more resources at them—adding additional customer service personnel, or building stocks, or establishing distribution centers. Guess what? Instead of solving the problems, these measures have increased the complexity of the value chain. In order to be successful, as a manufacturer you must focus on removing waste from all processes that involve customers. That’s where lean comes in. Lean can dramatically improve the way you engage with, service and satisfy your customers.

Adopting a Customer-Centered Mentality

While the challenges may sound daunting, they also represent a huge opportunity. To take advantage of this opportunity, manufacturers must change their mindset and embrace a Customer-Centered Manufacturing approach, with a goal of delivering the products customers want, when they want them, and in the quantities they want them.

Easier said than done, right? But, it is possible when you shift focus from planning to execution: Lean Execution. Look at any mid- to large-enterprise and you’ll encounter numerous business systems focused on planning: manufacturing resource planning (MRP), enterprise resource planning (ERP), demand planning, supply-chain planning, production planning and so on. These planning tools were great aids when manufacturers were stocking and selling. It helped them to plan stocking levels, improve accuracy of their forecasts, and optimize their capital resources. The Customer-Centered Manufacturing world, by contrast, is very different: you focus the organization on building what the customer wants. So, the role of these planning systems must change: they should be used for planning purposes, not for driving production, material replenishment and customer fulfillment.

Healthcare Manufacturer Fixes Supply Chain Operations

To identify supply-chain inefficiencies and implement lean inventory management, McKesson Automation partnered with Ultriva. McKesson had a solid foundation with its Six Sigma program and manual Kanban systems, but initial investigations by Ultriva revealed the efficiency of their supply chain could be improved.

To identify areas for improvement, Ultriva scheduled an onsite diagnostic visit and developed a plan for an initial six-week pilot with the following focus areas:

1. Eliminating the use of spreadsheets for exchanging information with suppliers.
2. Fixing errors and scalability limitations associated with the manual system.
3. Addressing disconnects in the information flow between order entry, manufacturing shop floor and accounts payable.

At conclusion of the successful pilot, McKesson went in for a full production system, which was implemented in December 2007. With the majority of its suppliers and 60 percent of the dollar value of all in-bound parts running through Ultriva’s system, McKesson now had a collaborative platform—into which its suppliers

were connected—that enabled all Kanban signals to be tracked and traced.

“One of the operational benefits Ultriva brings is much better visibility into our supply chain,” says Charles Stack, materials manager at McKesson Automation. “We can see what was ordered, when it was shipped, when it arrived, when it was used, and when it was paid for. This means my purchasing and accounts payable people can now ‘manage by exception’, and frees up valuable personnel.”

McKesson is now on target to manage 90 percent of their materials spend on the Ultriva system by encouraging all its raw materials suppliers to tap into the portal. The bottom line benefits include:

1. 10 percent improvement on inventory turns
2. 50 percent reduction in supply chain administrative costs.
3. Improved communication between the shop floor and suppliers.
4. Sharpened competitive edge through faster delivery of custom products.
5. Shortages for JIT items reduced to less than 1 percent of deliveries.



Implementing Lean Execution

Walk through any manufacturing facility and you'll see that they all have the same type of charts displayed on the walls (or bulletin boards or electronic displays)—highlighting results of Lean Six Sigma programs. The shop floor constantly runs Kaizens to improve factory-floor operations. Surprisingly, most of the emphasis on the shop floor is on streamlining production, setting demand flow cells, reducing production downtime, and optimizing production capacity.

Everything is focused on activities within the four walls of the factory shop floor. A very small percentage of these activities revolve around improving on-time-delivery, or improving supplier collaboration or material availability—processes that occur outside the facility. Lean Execution, on the other hand, targets everything that affects the customer—shorter lead times, JIT material availability, supplier collaboration and real-time demand management.

Lean execution is based on three tenets:

- Actual demand drives manufacturing—not planned orders or forecasts;
- On-time delivery drives production schedules—not available capacity;
- Actual consumption drives replenishment—not MRP schedules.

Each tenet hones in on one segment of the value chain:

- Demand-driven manufacturing lets you focus on your finished goods replenishment with a desire to get closer to the customer;
- On-time delivery focuses on factory production, with a goal of becoming a flexible manufacturer;
- Consumption-driven replenishment focuses raw material availability, with a goal of managing the global supply chain.

As you will note in the diagram, unlike a typical value-stream map, in which the supplier is the starting point, we start with the customer. The reason is obvious: if there is no customer, then there is no need for the value chain. The information flow moves from left to right, while material and value addition moves from right to left.

You can start this lean execution journey by first assessing where your material constraint is. Here are some questions worth asking:

- Are you stocking out of purchased parts?
- Do you have excess inventory but not the right mix?
- Are you blindsided by a lack of visibility into your supply chain?
- Are you experiencing high expediting charges due to a supplier's inconsistent performance?

Over the last 10 years I have encouraged manufacturers to look outside their four walls by targeting material flow first. Why?

HVAC Manufacturer Optimizes Inventory

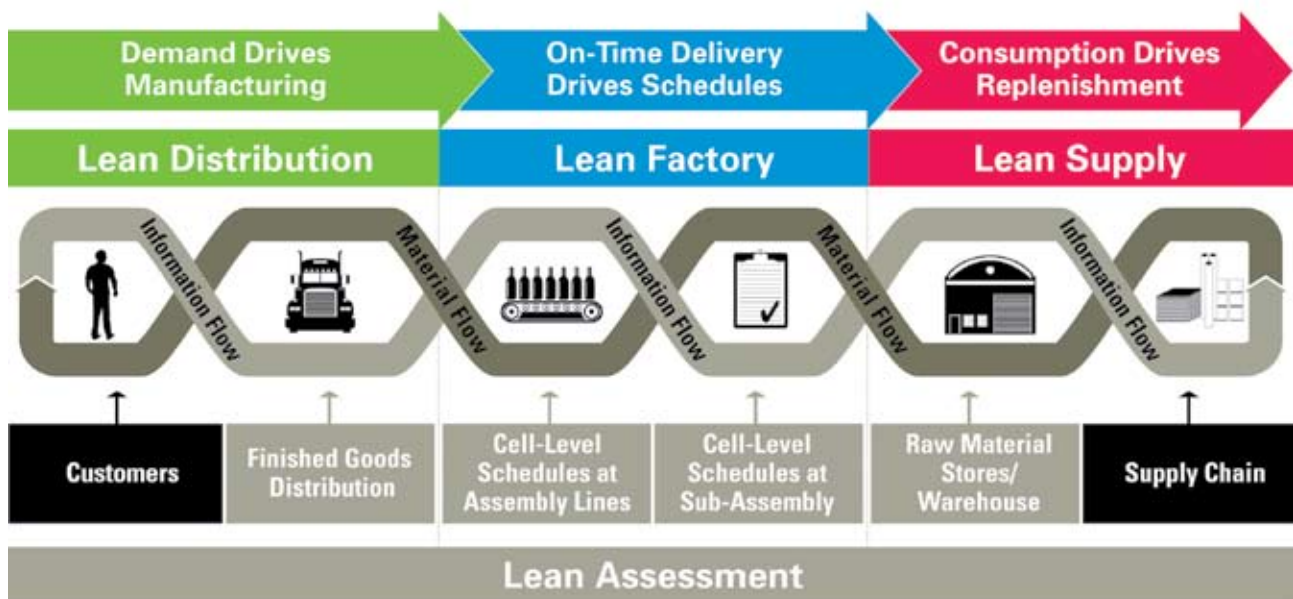
To position the company for growth, AO Smith, a leading HVAC manufacturer needed to streamline material replenishment, and improve its parts forecasting processes. The plant employs 1,200 people who make commercial and residential water heaters, commercial boilers, and other hot-water storage products sold worldwide. The factory produces 1.8 million water heaters per year.

Managers wanted to extend the company's kanban-based inventory replenishment system to suppliers to eliminate excess inventory in the supply chain. After evaluating several options, the manufacturer of water heaters implemented a browser-based electronic kanban system from Ultriva that runs as Software as a Service (SaaS).

Today, when key suppliers ship parts to the factory, they attach a kanban label generated by the Ultriva system. When the parts arrive at the loading dock, the

receiving clerk scans the label, which updates the parts' status as 'received' and moves them into inventory. When parts are removed from storage, they are scanned again, which updates inventory level information and sends new orders to suppliers. The Ultriva system automatically updates the company's ASI system in real time with purchase order and inventory information.

After implementing the electronic kanban system, AO Smith has reduced inventory by 20 percent, doubled inventory turns, and dramatically improved on-time customer delivery. "We're able to run our factories leaner and simultaneously drive down inventory costs, all of which benefits our customers," says the director of distribution and logistics. "Planners are able to spend their time monitoring supplier performance and driving improvements in the supply chain—they're not on the phone all day expediting or resolving problems. As a result job satisfaction is much higher."



- A reduction in inventory or elimination of stock-out has direct impact on your bottom line.
- In the current economic climate, getting the capital tied up in inventory is really criminal. Freeing up the cash flow should be the number one goal for any organization.
- Setting up a collaboration with your supply base leads to an increase in inventory turns through shorter lead times and reduced lot sizes.
- Predictable material availability dramatically improves the flexibility of your manufacturing shop floor, lead-

ing to improved on-time delivery performance.

Take a look at your manufacturing value chain and apply the logic outlined above. And to assess whether lean execution could work for you, try this free Lean assessment tool: <http://leanassessment.kanban.com/Registration/KanbanReg.aspx> ■

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