Lean is big when it comes to supply chain
FEATURUES - PRODUCTION

Even companies that embrace it, often ignore the supply chain side of Lean. Don’t let yours become one of those.

GERSON CORTES | May 5, 2014

Editor’s note: This is the second of a two-part series. For the first part, see “Do your production plans include Lean Flow?”

Lean has been implemented in many greenhouses and nurseries throughout the country with the main focus being on improving productivity, quality, and optimizing floor space. The aspect of Lean that many companies have ignored is supply chain.

Yet, the focus of the Lean Materials Strategy (LMS) is the optimization of the supply chain. As we mentioned in the April issue, growers need to think more like manufacturers, such as Ford and John Deere.

So how do successful companies optimize their supply chain?

Tough nut to crack
While working with growers for the last 10 years now, we continue to hear a common refrain when it comes to the supply chain side of the business: “We buy our hard goods once or twice a year because we get favorable payment terms, and by purchasing in large quantities we get a price break.”

The argument for buying once or twice a year is that if you don’t get the material in the fall or winter for spring, the supplier won’t have the capacity to supply all of its customers during the spring, and you definitely don’t want to be short of material in the spring. Although there may be some truth in this, the real question is how efficient are the suppliers’ processes?

Just like other suppliers in other industries, horticulture suppliers should be looking at Lean Flow techniques to improve efficiencies, improve machine utilization, and shorten lead-time. Like many traditional manufacturing companies, the suppliers, in a lot of cases, like to set up a machine and run large batches. However, in a Lean Flow environment, we look at designing processes that are flexible, enabling multiple products to be produced in smaller batch quantities. While some might argue that smaller batches require more setups, the art of the Lean Flow strategy is to look at ways to reduce the setup so they can run more varieties of products.

The second argument for fewer buys is that the grower gets a break on the per unit price. So the grower might say, “If we buy "X" thousands we get it for one or two cents cheaper. And since we are going to use thousands of these items next year, we can save a lot of money.”

This logic is seriously flawed as evidenced by a financial term that most growers don’t think about. That term is Inventory Carrying Cost (ICC) and it’s made up of several components:

- Cost of capital
- Warehousing cost
- Inventory damage and shrinkage
- Obsolescence
- Insurance and taxes

Because the grower doesn’t have to pay for the material until the spring, when cash flow is good, the cost of capital is really not an issue for them. However, all the other components are what growers don’t think about.

Warehousing costs are composed of additional space you need to store material. You may not have a warehouse, but you keep that inventory somewhere in your facility. In most cases we see that material outdoors, where it gets subjected to the elements, rain, snow, ice, and heat. These elements cause damage and shrinkage, which is another component of ICC. How many pots, trays, etc. do you throw away every year because they were damaged?

Obsolescence is another big component that affects growers. Every time we visit a grower we ask to see the tag room, and what we see is typical – shelves of tags that are no longer used, because the variety is no longer sold. Eventually the

What is Lean manufacturing?

Lean manufacturing is a production philosophy – a way of mapping the overall manufacturing process from raw material, to finished goods, all the way to the customer.

It is called “Lean” because these principles help a manufacturer to produce more with less: less time, less inventory, less capital, and fewer resources. Lean accomplishes this by highlighting what needs to be changed to streamline the overall production process.

The core philosophy is focusing on continuous flow of materials from raw materials all the way to the customer, and eliminating anything that gets in the way of doing that. Anything that gets in the way of accomplishing that flow is defined as waste. Waste is anything that prevents value-added flow of material through the enterprise.

Source: Society of Manufacturing Engineers
grower will go through and dump all of the obsolete tags to make room for new
tags. The same holds true for custom printed pots. So the question for the grower
is, did you really save any money on the per piece cost? Other components
include taxes and insurance, since inventory is an asset that needs to be insured
and on which taxes are typically paid. These additional costs are often not taken
into account.

Lean Flow solution
The Lean strategy for supply chain is to replenish material based on consumption,
utilizing material kanban techniques. Kanban is a Japanese word for
communication signal. The simplest form of kanban is from back in the day when
milk was delivered to your house. The milkman would drive down the street
replenishing empty milk bottles with full ones. The signal was the empty milk
bottle. This is kanban, and replenishment based on consumption.

This means that buying material once or
twice a year is not the solution. As
mentioned above, it may cost you more to
purchase these items a couple times a year
than when you actually need them. The Lean
Material Strategy is to use historical
consumption, (one or two years worth of
consumption), and statistically analyze the
daily consumption. The analysis includes
average daily usage, and variability, which
allows a standard deviation to be calculated.

The other key factor in analysis is a service
level factor that is determined by the grower.
This service level determines what
percentage of customer orders you want to
satisfy. The obvious answer is 100 percent, but that would require an enormous
amount of inventory. Typically, most customers utilize a 95 to 98 percent service
level. Based on the analysis, a re-order point (ROP) is calculated. When inventory
falls below the ROP, a trigger (order) is generated to order more. The amount that
is ordered is based on a minimum order quantity (MOQ). This Statistical Kanban
ROP logic drives down inventory and improves service levels. We have seen
customers reduce inventory by 40 percent while at the same time increase service
levels from 86 to 98 percent.

This ROP logic for hard goods is also used for finished product. Although growers
don’t carry finished goods like traditional manufacturing companies do, they need
to replenish their products at the retail end. One additional variable added to the
logic is availability of material. Looking at availability and at historical sales and
then analyzing both statically can help drive the right products to the right stores.
This helps increase the sell-through, which is similar to the service level. The
analysis is done by item by store to make sure that the right product goes to the
right store.

Bottom line: You can’t sell what you don’t have, so all these steps are critical to
your business, even if you don’t realize that yet.

As the now-familiar tagline challenges: “Just do it.”

Lean Tags
Tags are a common issue with a lot of growers. At the end of the year there are
tags left over which will not be used because of program changes in the coming
year. Van Belle Nursery in Abbotsford, BC, Canada decided that it didn’t want
to deal with the excess tags at the end of the season. It was throwing money away each year on unused tags.

Van Belle’s solution was to design its own Lean Flow tag process, employing the same techniques it used to design the propagation and shipping processes. Dave Van Belle, president of Van Belle Nursery, recently described the process and its benefits.

"With the exception of preprinted, branded tags, we have zero tag waste," says Van Belle. “Our tags are printed just two hours (sometimes less) before they are put on the plants. This means maximum flexibility for us. We can change our minds on what plant to ship right up until printing. We can customize the printing for any customer, including UPCs, SKUs, prices, logos, colors etc. And we use much less space; we have not outgrown our current footprint. In fact, the tag room people redesigned the flow again this spring and we will increase our throughput again."

Van Belle continues: “To make it happen, we perfected our own custom software that fully integrates with our shipping software. We also lease two very high-end printers, so the quality is nearly identical to preprinted tags. We print on a secret waterproof material. And on a busy day, we can print about 50,000 tags in a 12-hour shift with five people. We used FlowVision to help us get set up the first time, and after that, they have provided advice when needed. Using lean has saved us a tremendous amount of money each year, and this area is not an exception."


For more on supply-chain software:

- [http://flowvision.com/ION.html](http://flowvision.com/ION.html) – ION is used throughout the world in different industries and is cloud-based.
- [http://flowvision.com/Retail_Lynx.html](http://flowvision.com/Retail_Lynx.html) – Retail Lynx has been customized for growers to include availability and sell-through information.

LEARN MORE about the value of Lean in a podcast with FlowVision’s Gary Cortés and Greenhouse Management’s Joe Jancsurak.