

## Applying Lean Principles to Distribution and Logistics

### Lean Adds Emphasis on Waste, Non-Value Added Work, Queue Times, to Traditional Process Analysis

#### SCDigest Editorial Staff

While Lean has made a huge impact on manufacturing and in some cases even the broader supply chain, application of Lean principals in logistics and distribution is difficult for many in the profession to get their arms around.

One of the challenges is that the visual signals and generally more straightforward process and material flows in manufacturing are much different in a distribution center, where process and flows are more dynamic and fluid.

**Jim Barnes**, president of consulting firm enVista, agrees. "In manufacturing, I was trained to look for work in process (WIP) inventory," Barnes said in a recent interview with SCDigest. "If you see WIP, you know there may be issues with constraints, takt times, or allocation of resources. In distribution, it isn't that easy." (To view a video of the interview, please go to: [Supply Chain Video: Understanding Lean Thinking in Distribution](#).)

Barnes says one way to think about it is to view things from the Lean concept of "muda" or waste.

"There is a lot of confusion about using Lean in a distribution environment," Barnes says. "You want to focus on waste and what is really customer service or value-add."

Key to that is looking at the issues from the eyes of the customer back up through the supply chain.

"The customer wants what they order delivered on-time the first time, or what I like to refer to as delivery with integrity," Barnes says. "The reality is the customer doesn't care that you walked 300 linear feet to pick the order, or how you replenished a for-

**A value stream analysis for one company helped identify that each carton on average was being "touched" 16 times from receipt through to the final customer. Eventually, the company was able to reduce that number down to just six touches per carton.**

---

ward pick location."

Barnes says that many of the things done in a distribution center don't add customer value, and are therefore candidates to be eliminated. Sometimes, the activities may in the end be necessary, but a value-stream mapping exercise can often identify work that is being done in the DC that is both non-value added and not necessary.

He says, for example, that such a value stream analysis for one company helped identify that each carton on average was being "touched" 16 times from receipt through to the final customer. Eventually, the company was able to reduce that number down to just six touches per carton.

Barnes says that before Lean thinking in distribution, companies looking to improve distribution performance usually would look at current and the "future state" process flows. While this approach is similar in a sense to the Lean value stream mapping, such analysis often didn't really focus as much on waste, non-value added activities or

## Applying Lean Principles to Distribution and Logistics (Con't)

things like “queue times” – how long products or people are not moving or waiting – as is done using a Lean model.

“There is a lot to be gained from traditional industrial engineering principles, but I see Lean really augmenting that” through the emphasis on waste and value-added work from the customer’s perspective, Barnes says.

### Technology Plays a Key Role

There continues to be debate about the role of technology with Lean, especially in manufacturing (visit our [Lean Manufacturing Resource Center](#) for more on this topic).

Barnes says, however, that technology really does play a key role in Lean for distribution.

“If we are really trying to move to a ‘one touch, right time, first time’ distribution model, you really need some enabling technology, like slotting, for example,” Barnes said. “If I move from a mechanized distribution center environment to a Lean, non-mechanized environment, my slot plan becomes critical,” he adds, arguing that



technology is probably more important to enable Lean in distribution than it is in manufacturing.

Barnes does say, however, that a lot more can usually be gained if the company looks at Lean opportunities throughout its entire supply chain, rather than more narrowly at just the four walls of a distribution center.

“To really move to a true Lean, pull-based system, it really does require cross functional changes,” Barnes says. “Sometimes you get that support, sometimes you just have to work within the constraints of what you can do in the DC only.”