Lean manufacturing: panel tackles variability and waste

Industry veterans offered strategies for shorter lead time and inventory control

BY LISA WICHMANN ON OCTOBER 29, 2013 1:22PM

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Lean experts shared insight on reducing inventory and non-productive wait time between processes. Photo: iStock

TORONTO—Manufacturers trying to lean their operations often change from push production to pull—meaning the whole process is cued by customer orders.

It's a step in the right direction, but two big problems still remain: variability and set-up time, according to a panel of lean manufacturers hosted by the Italian Trade Commission at the recent AME (Association for Manufacturing Excellence) conference in Toronto.

"In one way or another, if the product you make is highly variable, you will lose based on throughput," said Bill Bossard, president of Salvagnini America Inc. (Hamilton, Ohio). "That will ultimately result in longer lead times for the customer."

Salvagnini, which builds customized machine tools, has been implementing lean manufacturing at its plants around the world—and helping customers do the same. He's seen the challenge of trying to make highly-customized products, without losing time for set-up.

"The manufacturing process needs to have flexibility built into it, while the cost of variability stays low," he said. "Increase the velocity of parts through your factory…Combine processes and don't touch the material. Once it starts moving through the plant, let it go."

Customized orders can cause inventories to burgeon, he added—another area to closely watch.

"Where we see a lot of challenges is not in finished goods but in the work-in-progress (WIP) area," Bossard said. "In our industry inventory is a crutch…Try to eliminate as much WIP inventory as you can."

According to Bossard, 95 percent of total lead time is generally non value-added. He suggested assessing where time is spent at each stage of production.

"A customer told me it takes one week to produce the product, but two weeks to get it out of engineering."

He uses a simple cost equation to reduce non-value added time: raw material versus labour. "If you can drive the percentage of your total cost to 80 percent raw material and 20 percent labour, you're entering into world class manufacturing."

The ideas aren't new to Francesco Velluto. As vice-president of factory management with wind power systems manufacturer Vestas Nacelles Italy, Velluto is leading his team through a lean program to even out production schedules and tighten its supply chain.

"At the beginning, we had problems with over-time every day," Velluto said. "Now it's eliminated."

Solutions included just-in-time delivery of material to the manufacturing plant, so inventories remain low. The company also used a simple but creative tool: web cams. They were installed in the plant so suppliers can track assembly.

"Now suppliers know perfectly well what we need…They're able to see as we're changing and respond."

So far, the program has resulted in lead time reduction of 50 percent, he said, emphasizing the changes didn't require significant cost investment.

"We have to use creativity; not capital. Each employee has to feel they are important to the company and are able to change the organization."

The panel also addressed a common obstacle experienced by managers who are new to lean—figuring out where to start. On that note, David Hall, vice-president of operations with Bonfiglioi USA Inc. in Hebron, Ky., offered some advice.

The manufacturer of industrial gear motors, boxes and drives focuses on common areas of waste, such as excess inventory, defects, and non-productive downtime. It's also helping customers implement lean, but not on the basis of the 80-20 revenue rule.

"We didn't pick the ones with the highest revenue or [requiring] the most resources," Hall said. "We actually picked ones that were most likely to improve."

That in itself was a key take-way of the panel—seeing is believing. Once employees start to notice how small changes can positively impact production, they become engaged in the process and the ideas start to flow.

"When employees start proposing new lean improvements, it means they are empowered and the lean process is in place," Velluto concluded.

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