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Editor

FEATURE

A Lean Diet: Companies Look for Cost-cutting Ways

Lean manufacturing slowly adopted by increasingly cost-conscious companies

Manufacturers everywhere have long looked to lean manufacturing tools to help them build higher-quality products more quickly at lower costs. Reducing inventory and lead times are just some of the benefits that come from lean initiatives. But even as sectors such as automotive and industrial have widely embraced lean, the orthopedic industry has made some but not significant inroads into the lean world, according to companies interviewed by *Orthopedic Design & Technology*.

However, that may change in the future, as some of the industry's largest manufacturers look to cut costs. With reimbursement steadily declining and margins shrinking, manufacturers are forced to re-examine their cost structure. And to gain efficiencies, lean may be the answer for some.

A machinist performs visual grinding of tooling components at Durham, CT-based Hobson and Motzer. Photo courtesy of Hobson and Motzer.

Lean by Piecemeal

While a number of orthopedic product manufacturers say they have implemented lean tools, some of them lack a formal program or have tried to adopt it in piecemeal fashion. Others readily admit that few customers have demanded they become lean organizations; instead, buyers only want to be assured that quality products are delivered on time and at the right price. Still others point to the fact that unlike the automotive industry, where lean and Six Sigma programs initially began, the orthopedic product industry produces much lower volumes and would see fewer benefits from lean initiatives. Universally, though, medical

manufacturers agree the industry is years behind those sectors in the adoption of lean.

"Probably every supplier will tell you they do kanban and JIT (just-in-time manufacturing). In reality, the level of understanding is very minimal," said Francisco Santiago, the shared services director for Stryker Endoscopy and Instruments in Arroyo, Puerto Rico. Santiago, who helped initiate lean efforts in the plant some four years ago, lamented that one of the difficulties that his operations initially faced was inconsistent compliance by suppliers. Communication problems, inadequate understanding of lean requirements by suppliers and other challenges were encountered along the way. However, he also acknowledged, some of those suppliers are becoming more adept at meeting customers' lean requirements.

Varying Definition

Ask 50 manufacturing engineers the definition of lean and you might get 50 different answers. Survey 50 companies implementing lean programs and chances are they have all taken different approaches. That's because while the lean concept is well established, implementation among practitioners varies significantly.

Generally, lean is a systematic approach to identifying and eliminating waste through continuous process improvements. There are many components and tools, and companies don't embrace all of them uniformly.

Also, different manufacturers have different needs from lean. Some pursue it to improve on-time delivery, others look to it for inventory reduction and still others want quality improvements. Whatever the need, lean is described by many as a change in company culture and not just the adoption of tools.

"Lean is not a tool but a way of thinking," said Larry Coté, president and CEO of Ottawa, Canada-based Lean Advisors, Inc., a consulting group that has provided services to companies such as Medtronic. He said uninitiated manufacturers often confuse lean as a discrete program or tool when it's really a way of life for manufacturers.

Making this distinction is critical to the success of any program, he said, because management needs to recog-

nize that lean programs have no end point and final result. Often, companies are required to devote significant resources—in man hours, capital and consulting fees—to effectively implement lean. Furthermore, management must be committed to it once they begin, otherwise their efforts may yield minimal rewards, Coté added.

While not all OEMs are demanding vendors adopt lean, some are doing so voluntarily because they see the benefits and the impact on customers. For others, it's a matter of survival.

Worth the Effort?

While adopting lean may seem like a monumental effort, those who have pursued it say the rewards are worth the effort. Measured in lead time, inventory turns or worker productivity, the payoff can be huge for any operation. According to Coté, a well executed lean program should lead to a reduction in inventory, lead time and errors by at least 50%.

"If you're not getting that kind of result, you should re-examine how you are doing it," he said. "You may be applying a tool and not a culture."

Indeed, some orthopedic manufacturers report significant increases in efficiencies shortly after implementing lean. Take Warsaw, IN-based Symmetry Othy, for instance. This surgical instrument division of Symmetry Medical estimates that its five plants in the division are at various stages of lean implementation, with some facilities at less than 40% complete and others as high as 80%. On average, said Alec McPherson, general manager and VP of instruments, the roll-out of lean is about 50% complete.

McPherson said the division has invested in a number of tools, including cellular workspace, just-in-time (JIT) manufacturing and Single Minute Exchange of Die (SMED). A trained master black belt in six sigma, McPherson said the division has trained a number of employees in lean techniques. Its most important program, he added, is the adoption of a 5S program (see *Common Lean Terminology* below).

He said embracing lean was no small task; it required a culture change and the commitment of workers at all levels, from shop technicians to management. He said while customers don't especially care if Symmetry has adopted lean, they are the beneficiaries.

"I'd say our lead times are one-third to half less. Inventory turns are 10-20% better so inventory dollars are down," he added. "I'd like to think what we offer our customers are lead time and flexibility. And our costs have come down significantly from what we quoted three years ago."

The lean discipline also helps some companies lower their labor costs. Bill Loucks, the general manager of the Electrolizing Corp. of OHIO, a metal finishing provider, said he began implementing lean a little more than three years ago. With revenues up 70% during that period, the com-

Common Lean Manufacturing Terminology

5S (of housekeeping): A set of Japanese terms for describing optimal production housekeeping. These include: Seiri (Sort); Seiton (Straighten); Seiso (Shine); Seiketsu (Standardize); and Shitsuke (Sustain). This discipline is aimed at reducing clutter and improving organization.

Cellular Manufacturing: A system in which manufacturing is focused on work cells that make a specific product or a narrow range of related products. Cellular workflows reduce the distance in which components or products travel throughout the plant.

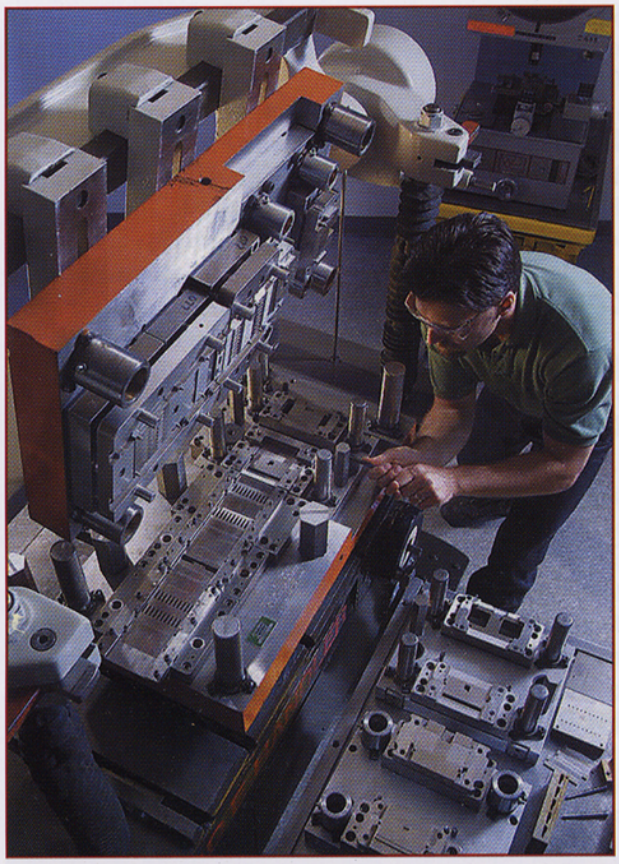
JIT Manufacturing: Just-in-time manufacturing. An approach that eliminates inventory and waste.

Kaizen: A Japanese term for continuous improvement.

Kanban: A Japanese term that describes an inventory scheme in which parts are delivered to the production floor only when needed. The benefits are minimal inventory on the shop floor, eliminating confusion and the need for warehousing unused components.

Toyota Production System (TPS): This was the model for lean manufacturing schemes, stemming from the factories of Toyota. The company is recognized globally as the originator of lean.

Value Stream Mapping: A visual process in which companies identify steps in their manufacturing processes that add value to products. All other time is considered waste. A typical company before adopting lean may add value no more than 3% of the time.



A tool maker working on inserted progressive dies. Rapid changeovers is one of the keys to a successful lean program. Photo courtesy of Hobson and Motzer.

pany was able to maintain the same headcount. At the same time, the Electrolizing Corp. was able to improve quality and lead times.

He partially credits market pressures for making the company consider lean.

"We wanted our parts faster. We had our customers pushing us," he recalled. "We said we have to figure out how to do it."

How much a facility can benefit from lean also depends on how dedicated and how long it has engaged in lean. While it is supposed to be a continuous process, some of the improvements are one-time occurrences, said Andy Vandermotten, director of operations at orthopedic implant manufacturer Paragon Medical in Pierceton, IN. The company began its lean implementation about two years ago and is using it to take out costs and improve satisfaction for its OEM customers.

In the beginning, "you hit certain low-hanging fruits that have an immediate impact," he said. "As you move further down the line, it's more than that instant gratification to more of customer satisfaction."

While not all OEMs are demanding vendors adopt lean, some are doing so voluntarily because they see the benefits and the impact on customers. For others, it's a matter of survival. Les Hyatt, director of sales and marketing for Durham, CT-based Hobson and Motzer, a metal stamping supplier, said one major customer threatened to pull its business if the company could not lower its prices. As a result, Hobson and Motzer implemented lean to cut costs to maintain margins.

"Why do we do it? There are two things going on in the marketplace: there are suppliers increasing raw material prices, and we have customers wanting price reductions," he said.

In some instances, though, vendors are only required to comply with the customer's kanban procurement scheme and asked to carry inventory on their behalf. Some vendors receive blanket orders and fill them accordingly. Some are engaged in vendor-managed inventory as OEMs entrust more of their operations to suppliers. In opening their books and sharing forecasts, some orthopedic product manufacturers adopting lean or just-in-time manufacturing have come to rely on suppliers to make their program work.

Because some vendors lack resources to implement their own lean initiatives—especially smaller companies—a few OEMs have taken on the role of mentor. Stryker's Santiago said his plant utilized a vendor management team to help its top 10 vendors to understand and meet the company's expectations. Some of those suppliers were already immersed in a lean culture while others had a tougher time meeting Stryker's needs.

"It could be as simple as not looking at the kanban," he pointed out, noting that some vendors failed to realize that each month had a different number of production days.

Indeed, keeping up with customers adopting lean has become a significant challenge for some service providers, but with the industry more widely embracing the discipline—led by OEMs such as DePuy and Stryker—complying might not be a choice in the near future.

Just as the automotive, telecom and other industries have transitioned into a lean environment, the orthopedic industry may very well be facing the same path. As reimbursement rates fall and raw material costs rise, manufacturers will come under increasing margin pressures. But adopting lean will have its challenges, Symmetry's McPherson pointed out, because it requires a change of mentality.

"Obviously this whole lean initiative is where we (the industry) need to be, so why isn't it a no-brainer?" he questioned. "Because we have always done things the old way." ❖