



The New Look of Lean Manufacturing

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It's not just yesterday's news. Here's what lean manufacturing can do for you now.

by Robert Sberna

Faced with increasing global competition, a growing number of U.S. manufacturers have implemented “lean” initiatives in an effort to cut costs and improve product quality.

Introduced in the 1990s, the techniques of lean manufacturing have traditionally been used to eliminate waste and maximize efficiencies throughout a production environment. Lean can help manufacturers — and their customers — to realize a wide range of benefits, including shorter cycle times, reduced inventory and enhanced productivity.

In the factory, lean’s impact is readily apparent and quantifiable. The journey must continue throughout the entire organization, however, if bottom-line improvements are to be sustained, says Tony Laraia, an executive with NAM member Wiremold and the president of the Association for Manufacturing Excellence.

Laraia, the co-author of the 1999 book, *The Kaizen Blitz: Accelerating Breakthroughs in Productivity and Performance* (Wiley), says it’s essential for U.S. manufacturers to adopt lean principles to remain competitive. “The world’s borders have opened; there are few economic barriers to manufacturing or acquisitions of materials around the globe,” he notes. “For us, there must be employee processes that attack waste at all levels. I think the philosophies of lean are some of the most powerful that can be applied.”

At W.L. Gore & Associates, the lean initiatives that were initiated in the manufacturing area are now being replicated in other aspects of the firm. “We have made a lot of nice improvements within our manufacturing organization,” explains Stephen Liberatore, who is the enterprise operational excellence champion. “The real challenge now is to take these improvement efforts beyond manufacturing to other parts of the organization. Our main focus is to make sure associates understand that lean concepts can be applied to all of our business processes, including our administrative ones.”

James Buckley, Gore’s director of manufacturing operations and a member of the NAM’s board of directors, notes the firm’s enterprise-level lean initiative includes standardizing best practices across its 45 plants and sales locations around the globe. “There’s lots of benefits for us, and our customers love it because they know they are going to be treated the same way no matter what country they’re in,” Buckley says. “I don’t think there’s anything here that’s rocket science. We’re taking these tools and making sure to deploy them worldwide. We’re using the experience of the manufacturing team and leveraging it.”

Liberatore adds that one particular Gore sales team utilized lean principles to reorganize the way it covers territories. “This resulted in a revenue increase of approximately \$1 million a month,” he notes. “We are also taking a look at our customer order fulfillment process. Now, it involves a lot of phone calls for customers to learn the status of their order. With lean processes, we envision a future when customers can check their order online, right up to shipment tracking.”

The Way of Lean

As a buzzword, “lean” has been around for about 15 years, but the concept was developed and fine-tuned in Japan by the Toyota Motor Company and its management consultant Shigeo Shingo during the years 1949-1975. In sum, the Toyota Production System can be defined as: “A philosophical approach to business that is based on satisfying the customer (whether internal or external) by producing quality products that are just what they need, when they need them, in the quantity required, using the minimum of materials, equipment, space, labor and time.”

When Nypro, a Massachusetts-based plastics firm, decided to transform itself around the principle of error-free production, it sent a management team to visit Toyota and other lean-driven firms.

“In 1988, we started looking at our company’s processes, from interaction with customers through the supply chain,” says Brian Jones, Nypro’s president and CEO. “We spent a lot of time going through the really great manufacturing companies and seeing how they do it.”

An NAM board member, Jones was voted into the Shingo Prize Hall of Fame last year for his sponsorship of lean-thinking principles.

Five years ago, Jones initiated 50 Nypro managers into the way of lean by organizing a week-long tour of Toyota’s Georgetown, Ky., auto plant, which includes an in-house plastics operation. Noting that it’s sometimes difficult to envision how a lean system works, Jones says on-site experience in a lean environment can help people to see the advantages of the process.

Jones credits lean principles for Nypro’s recent dramatic increase in North America sales and profits. “We’ve got managers who roll up their sleeves and go into plants to study work processes to determine what’s value-added and what’s not,” he explains. “For example, if a person has to carry a box 200 times a day, that can take a toll. We re-engineer the workflow for the people on the floor so that we can take out the waste.”

Author James Womack says consumer satisfaction is the next frontier of lean. “We need to apply the same thought processes to consumption that we’ve applied to manufacturing,” says Womack, founder and president of the Lean Enterprise Institute, a Massachusetts nonprofit education and research organization that promotes lean principles.

“We’ve been in a period for some time in which manufacturers have found a way to take the problems out of products and knock down their prices,” Womack explains. “My hat’s off to NAM members — they’ve gotten really good at making things. But at a time of greater product quality, consumers — and providers — are frustrated that obtaining these better goods is filled with waste.”

Womack is credited with coining the phrase “lean manufacturing,” which he first used in his 1990 book *The Machine That Changed the World* (Scribner), an account of the history of automobile manufacturing and a study of Japanese, American and European automotive assembly plants.

In a new book, *Lean Solutions* (The Free Press), Womack and co-author Daniel T. Jones address what they term the “massive disconnect” between consumers and providers. The authors note that consumers have a greater selection of high-quality goods and services to choose from, yet their experience obtaining

and using these items is time-consuming. Meanwhile, companies find themselves with declining customer loyalty, greater challenges in fulfilling orders and bigger problems in “closing the loop” with their core customers.

In *Lean Solutions*, Womack and Jones ask: Why do we so routinely encounter the custom-built computer that refuses to work with the printer, other computers and the network software? Why does the simple process of getting the car fixed require countless loops of miscommunication, travel, waiting and defective repairs? And why is the process of consumption backed up by help desks and customer support centers that neither help nor support?

“Companies often believe that they are saving time and money by off-loading work to customers, making it the customer’s problem to get the computer up and running, and wasting the customer’s time,” the authors explain. “In fact, however, the opposite is true. By streamlining the systems for providing goods and services, and making it easier for customers to buy and use them, a growing number of companies are actually lowering costs while saving everyone’s time. In the process, these businesses are learning more about their customers, strengthening consumer loyalty and attracting new customers who defect from less user-friendly competitors.”

On the global stage, the successful players will be those who “do everything to make sure their operating systems and technology are world-class,” says Keith Harrison, global product supply officer for Procter & Gamble.

Harrison, a member of the NAM’s board of directors, explains, “I think it’s very important for the NAM membership to do all that we can to create true excellence in U.S. manufacturing. There are many tough challenges facing manufacturers. Lean is one of the areas that can help us.”

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