



Value Stream Mapping (VSM)

Get the Most From Value Stream Mapping

You've done value stream mapping and made improvements to your manufacturing process. Productivity is up. You're getting lean. So what's next?

According to one of the pioneers of Lean Manufacturing, the answer is, "Do another value stream map." Toyota says companies don't get proficient at value stream mapping until they've done it at least seven times on the same process.

"As companies do more value stream maps they gain increased benefits," says WMEP manufacturing specialist Steve Straub. "They learn how to more effectively use lean tools and find more opportunities for improvement."

Value stream basics

Value stream mapping is a four-step process that uncovers waste and reveals how to streamline your manufacturing process. First, identify the value stream or process to map. Second, you make a current state map showing the current flow of materials and information needed to make a product. Next, you diagnose problems, suggest changes, and make a future state map representing the improved manufacturing process. Finally, you implement the changes.

Value stream mapping is the staircase into the house of Lean Manufacturing, which leads you to solutions for improvement. But value stream mapping is not a one-time event. Successful lean manufacturers are applying value stream mapping continuously to their manufacturing processes to get better results.

Four Steps of VSM:

- 1. Identify the value stream or process to map.**
- 2. Make a current state map** showing the current flow of materials and information needed to make a product.
- 3. Diagnose problems,** suggest changes and make a future state map.
- 4. Implement the changes.**

Glenroy uses value stream loops to improve packaging process

When packaging manufacturer Glenroy, Inc. started value stream mapping one and a half years ago, they had several problems.

"Order entry and sales were a big holdup," says purchasing and information systems manager John Mawbey. "If someone's inbox in sales was full, order entry wouldn't get the order for seven days." It also took too long to get raw materials, and products were being scheduled, then rescheduled, for production.

Glenroy, located in Menomonee Falls, Wisconsin, didn't solve these problems through one, comprehensive value stream mapping. Instead, they broke their value stream into six loops and started by tackling just a few



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areas. Mawbey and director of operations Richard Buss acted as value stream managers and led the implementation.

First, they applied value stream mapping to Glenroy's ordering process. This showed the need to speed up order entry. In response, they streamlined the paperwork process to avoid multiple trips through the sales department. They also did away with inboxes, where orders got mixed in with other paperwork.

In the production area, value stream mapping showed the way to making two additional improvements. By asking their supplier to keep essential parts in stock, they cut raw materials acquisition from 21 days to nine. The company also began grouping orders by promised shipping date, which eliminated production rescheduling. As a result of these changes, Glenroy reduced lead-time by 25 percent.

Now they are expanding their value stream mapping to the customer quoting process, equipment changeover, and gathering order information.

Fristam brings pump to profitability

Four and a half years ago, Middleton manufacturer Fristam Pumps stood at a crossroads.

"We were losing 15 percent on our positive displacement pump," says process engineer Dan Osiedacz. "We knew we were struggling."

Osiedacz recalls their first value stream map. "The office thought it should take three hours to make a pump versus the eight hours it actually took on the floor," he says. "It was stunning to walk through the plant and see what really happened."

Fristam created three dozen current state maps to turn around the product line. They discovered they were spending too long fetching parts, so they went to "point-of-use" storage to make parts readily available. The gapping procedure, which set the space between the rotor and housing of the pump, was being repeated two or three times. They reduced it to one step. They also cut equipment changeover time in product testing by half an hour.

As a result, the lead-time for their positive displacement pump is now 3 days, instead of 4 weeks, and on-time delivery stands at 95 percent.

Best of all, they're making 18% margin on sales.

"We're actually making more pumps with two people than we were with three," says Osiedacz. That extra person didn't lose his job. Instead he has a new one—handling inspections and repairs on returned pumps. Value stream mapping revealed the opportunity to reallocate the worker where he was needed.

Fristam continues to improve. Every two months they create a new current state map to assess progress toward their goals. Currently, they're applying value stream mapping to a plant layout project. They are also putting value stream managers in place to further improve their manufacturing process.

InPro optimizes ordering process

InPro, Inc., located in Muskego, Wisconsin, makes handrails, privacy curtains, signage, and other products for commercial buildings. At the suggestion of WMEP, they applied value stream mapping to 14 separate projects over a two-year period in their office area.

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John Marek, vice president of finance and value stream manager, says this tool revealed key problems and solutions in their ordering process.

1. Employees had to contact customers more than once to get information. Consequently, InPro made their order forms more comprehensive, allowing them to gather all needed information at the same time.
2. One person generated part numbers that everyone needed, creating a bottleneck. To streamline the process, the company cross-trained employees to generate part numbers themselves.
3. Credit approvals were slow. In response, inefficient policies were changed. "We decided that some orders didn't have to go through the credit department," Marek explains. InPro also eliminated the department's inbox. "We found that most people could do a credit decision on the spot."

Thanks to these improvements, InPro has cut a 3-week lead-time to just six days and no longer needs to outsource order taking.

They are now applying value stream mapping to order packing, sales samples, and other product lines. "Even if you've made improvements, you can always make more," Marek comments.

Climbing the stairway to success

With the commitment and leadership of value stream managers, these companies used value stream mapping along with other Lean tools to improve their processes. Your company could experience the same success by applying this tool in a strategy of continuous improvement.

"You never find all the possibilities the first time you do a value stream map," says WMEP manufacturing specialist Jerry Thiltgen. "Each time you learn more, get sharper, and find more things to improve."

About WMEP

WMEP is a private, nonprofit consulting organization committed to the growth and success of Wisconsin manufacturers. A leader in Next Generation Manufacturing, WMEP brings best practices to Wisconsin firms to help them achieve world-class performance through innovation and transformation. WMEP receives financial support from the Wisconsin Department of Commerce, and partners with many public and private organizations to serve Wisconsin manufacturers.

To learn more about Value Stream Mapping, call WMEP at 1.877.856.8588.

