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# Lean Machines

A look at how manufacturers add lean muscle to their business – from theory to practice at a reman shop in Alberta.

by **Phil Ginter**

**M**any wood products manufacturers today are already sold on the potential benefits offered by the lean manufacturing approach. Low inventories, technology to produce on demand, and relocation to smaller premises are proven lean manufacturing solutions, and have been implemented by many over the last years. However, companies are frequently facing the challenge of how to put the smart theory into practice on the shop floor.

Lean manufacturing is a production philosophy. Its implementation requires a change in the traditional way of examining business processes. Implementing lean manufacturing principles is also an ongoing process. Normally it does not require a major investment in new equipment, but rather an investment in training all involved in the proper mental approach to the one-piece, continuous flow manufacturing process.

Industry advisor Phil Ginter holds lean manufacturing workshops as part of Solutions for Wood, a Forintek manufacturing advice program. He explains some practical steps in adopting a lean approach:

1. **Appoint a person to be in charge of implementation and form a support team:** To guarantee a continuous transition process, a company manager, ideally the production or plant manager, needs to be put in charge of managing the production systems' changeover. This 'lean champion' must be familiar with the new production management systems, and also with the company objectives and company strategy, and understand the need for the changes. Then, the transition manager should form a support team of key members who will follow up on the changes and motivate and guide the production staff.
2. **Analyze the factory's situation – map the value stream:** Before implementing any changes, a value stream map of the whole organization that focuses on uncovering waste and revealing how to streamline your manufacturing process should be drafted. The value stream-mapping tool identifies production bottlenecks by looking at cycle times, changeover times, the number of operators required, the work in process



*Quality control at Nose Creek Forest Products. "People are naturally reluctant to change, and if they are not behind it, it will not get implemented," cautions Nose Creek general manager Ron Hunting.*

inventory, and machine uptime.

After developing a map that shows the current flow of materials and information needed to make a product, problems are diagnosed, changes are suggested and a future state map representing the improved manufacturing process is drafted. This process could involve rearranging machinery in a more logical cellular type configuration, and/or re-assigning workers to new tasks to achieve continuous job flow. To learn how to do this, look at the front office procedures first and give management a task such as defining 'what are all the current steps undertaken in processing an invoice?' Ask how they could reduce those steps.

Technically, all the steps in paying an invoice are non-value-added steps, yet they are the necessary evils of doing business. The question is how many of the current steps are necessary, and which could be eliminated, i.e. by having duplicate signatures, etc.

Ask employees what their daily struggles are. Most of them will identify simple things such as not having proper or enough tools at hand, or constant breakdowns of a certain machine. With this approach you are doing two things: You are listening to the employee; and you are identifying the changes that are easiest to address first.

From all these steps, make a future state map representing the improved manufacturing process, and derive an

improvement action plan. 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.

**3. Pass the vision on via training and by starting small improvement projects:**

Visiting factories that already practice lean manufacturing will show your employees that lean manufacturing is more than just a theory. Also, start by training them on lean basics such as the "5-S" process, the seven deadly wastes, visual measurements, and set-up reduction. Work with the employees on small improvement projects that will make a difference for the employee as well as the organization. Avoid changes that only management considers a priority. If employees see improvements, they will buy into the lean concept more readily.

**4. Manage resistance and avoid common mistakes:**

As improvements occur, you will eliminate unnecessary steps. If this means staffing reductions, have another job in mind. If they feel you are cutting jobs, the lean journey will stop dead in its tracks. However, if they feel that non-value-added steps were eliminated and are replaced by a value-added step, they will support you.


**5. Ensure staff does not revert to old habits:**

On the lean journey this is the most critical task. The lean champion needs to make sure that the sustaining component of a lean approach happens every day. Here is an example: Have each employee suggest and implement a fixed number of improvements within a fixed time period each year. If this is part of an annual performance review and an employee reward system, staff will be much more encouraged to sustain the lean approach.

**Lean on the Nose**

A company that managed the transition to lean manufacturing successfully is Nose Creek Forest Products ([www.nosecreekforestproducts.com](http://www.nosecreekforestproducts.com)) in Calgary, AB, a custom manufacturer of components for large- and medium-sized window and door companies in Canada. In September 2005, the company enrolled in a Solutions for Wood lean module course because they wanted to find ways to reduce their delivery lead-time. Based on the projects conducted in the course, they identified a number of areas to focus on first. As a result of implementing lean manufacturing solutions, an entirely new floor plan and the reorganization of equipment to manufacture products more efficiently was accomplished.

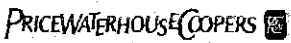
At first there was a lot of reluctance from employees. The buy-in came during a one-day lean introduction seminar for employees delivered by Solutions for Wood.



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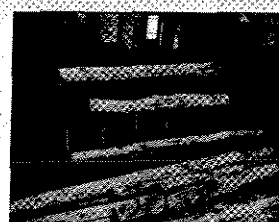
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Employees learned what lean was, the benefits, and ways the principles could be implemented.

"It also gave them the chance to ask any questions they had about lean and what it would mean to them and their job," explains Ron Humting, general manager at Nose Creek. After the seminar, Ron assigned a lean champion to look after implementing the lean practices in the plant.

In the spring of 2006, an additional training session took place. All Nose Creek supervisors and key operators attended a six-day lean manufacturing course – which was geared more towards their level. This gave the group additional tools to help implement lean within their areas of control. After those sessions, they focused on working further with their employees to help them implement lean practices and get the plant up and running for the busy late spring/early summer season.

"You definitely need to have the buy-in with your employees. They are ultimately responsible for successfully putting the principles into practice," he stresses. This includes all the employees from the floor to the office. "Having a good strategy is key for the buy-in process. This can be accomplished in a variety of ways, from starting with your key operators to focusing first on only one part of your manufacturing process. People are naturally reluctant to change, and if they are not behind it, it will not get implemented."

Ron's advice for manufacturers that are about to switch to lean manufacturing is to take the time beforehand to understand what you want to accomplish with it. Over the next months, Nose Creek Forest Products will continue to learn how to more effectively use lean tools and find more opportunities for improvement. "It's important to keep it going once you get started," confirms Ron.

*Phil Ginter is a secondary wood products specialist with Forintek based in Manitoba. This article was written specifically for Canadian Wood Products. Phil can be reached at 204-942-2090; [phil@van.forintek.ca](mailto:phil@van.forintek.ca). For more info, visit [www.solutionsforwood.com](http://www.solutionsforwood.com).*