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May 2011
PlantEngineering.com

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Making Lean hum in a machine environment

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Any manufacturer that wants to survive and flourish in today's environment must bring the powerful principles of Lean manufacturing to bear on reducing costs and improving manufacturing cycle times. Lean manufacturing is about going onto the manufacturing floor and systematically eliminating all waste from the production process.

The benefits of getting Lean include significant reductions in costs, lead time, and inventory, as well as improvements in quality and increases in capacity. However, many companies do not focus on Lean. They focus on improving the value-added activities in their processes instead of focusing on eliminating waste. They want to know how to weld faster or how to assemble faster.

Unfortunately, focusing on the value-added activities doesn't yield the results that most companies are looking for.

In a machine-based environment, where there is little manual labor involved in the manufacturing process, the focus of Lean manufacturing is on the reduction of downtime and scrap

and increasing capacity. Downtime can be reduced significantly through the implementation of a preventative maintenance program.

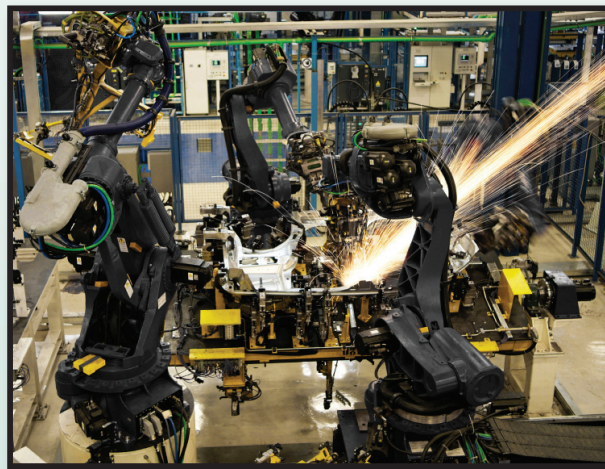
Unfortunately, many companies have not put such a program in place or have not maintained it due to cost or time issues. They fix the machines when they break, causing disruptions in product flow. One maintenance manager told

the maintenance work to the operators, freeing up valuable resources.

Another way to significantly decrease downtime is to reduce changeover time. Large changeover time results in lost capacity and wastes valuable resources. It also leads to larger batch sizes, increasing inventory and working capital needs. Many companies have attempted to use Lean manufacturing tools to reduce changeover time.

They have converted internal time, where the work can only be done while the equipment is down, to external time, where the work can be performed while the equipment is still running, such as preparing tools and materials for the changeover.

However, most companies do not include the time it takes to make adjustments once the machine has been changed over. At Getzler Henrich we define changeover time as the



me that he doesn't have time to put a preventative maintenance program in place; he's too busy fixing the machines. A good preventative maintenance program not only increases the uptime of the equipment but also offloads much of

amount of time it takes to get from the last good part at the expected production rate to the first good part produced at the expected production rate. In a very high percentage of the plants we go into, machinery is adjusted through trial and

error without any formalized set of procedures.

Each person has his own way of setting up and operating the equipment. We have witnessed plants that have 8-hour changeovers that cross over between shifts.

The operator on the second shift basically restarts the changeover process, ignoring what the first operator has accomplished either because he has no idea what that person did or because he does it differently.

Only through trial and error could they have come close to the original setup. Every knob and every dial that can be adjusted should have a measurement system and should be documented as part

of the setup and operating process. This practice is unfortunately not standard in the manufacturing industry.

Once Lean manufacturing principles are executed, there has been an historical average of 5 to 10 times return versus the cost of implementation within the first year. While every engagement is unique, manufacturers will typically see results on the order of a 25% to 40% increase in productivity; a 40% to 60% reduction in required floor space for operations; a 50% to 90% reduction in cycle time; a 50% to 100% increase in inventory turns; and a 60% to 80% reduction in scrap and rework.

Our goal is to teach the company to

identify waste in its processes, whether in a machine-based environment or in a high labor-based environment, and to focus on eliminating the waste before trying to figure out how to assemble or drill faster. Companies don't realize that most of their activities do not add value. It is only through the elimination of waste that companies can increase profits and be able to meet their customers' needs. **PE**

Fred Langer, a managing director with Getzler Henrich & Associates LLC, leads the firm's LeanSigma-Process Improvement practice. For more information, go to their Website www.getzlerhenrich.com.

