

## Lean Tools— Finding A Fit

Lean manufacturing techniques are being used by many U.S. suppliers to reduce costs and drive waste out of their organizations. Because of the continuous pressure to lower prices, lean manufacturing is one of the first methods every manufacturer should employ to be competitive.

Proponents of lean manufacturing say that in 3 to 5 years, typical performance gains include defect reduction, reduced lead time, and improvements in on-time delivery, employee productivity, and return on asset investments.

So with these kinds of results, why isn't every manufacturer in the U.S. standing in line for their "lean conversion?" The problem is that while the principles are simple, applying them to hundreds of different industries, thousands of different companies, and millions of different products and services is quite problematic.

The principles are valid but the application must take the following into consideration:

- Management capabilities.
- Company size in terms of employees and sales.
- Level of knowledge.
- Sophistication of systems.
- Capital and/or cash flow.
- Customization of products and services.

### Minster Machine- Minster, OH

Founded in 1896, the Minster Machine Company has more than 100 years of experience in developing manufacturing equipment and clutch and brake technology for the metal forming industry.

Minster Machine has survived a depression, two World Wars, seven recessions, the invasion of foreign competitors, and has continued to succeed despite the revolutionary changes in manufacturing. However, by the 90s, globalization began to seriously affect Minster Machine's customers. The customers had to reengineer themselves to compete in the global metal-forming markets and wanted price concessions from their suppliers. No longer was it possible to arbitrarily pass on cost increases to the customers every year. In fact, there was constant pressure to discount prices, which finally led management to the conclusion that they were going to have to find a way to reduce internal costs and eliminate waste anywhere they could.

Joe Kumpf, director of operations, was

intrigued by the concept of lean manufacturing. He and his staff began by reading many books, visiting other manufacturers and attending lean seminars. One book of particular interest was *Speed To Market* by Vincent Bozzone. The book was about implementing lean manufacturing for job shops and made a lot of sense to management. The operations staff continued to learn all they could about lean, however, most literature and available expertise on the subject was related to standard products and used examples of the Toyota Production System that did not translate to the problems with low volume custom designed and manufactured machines. They knew lean manufacturing could work for them, but could not see how to implement lean manufacturing the way it was written in most books.

### Implementation, The Right Way

Kumpf wanted help from someone who understood the peculiarities of a custom manufacturer. He found that person in a manufacturing consultant from the CAMP MEP Center (now called Magnet) in Cleveland, OH, Mike O'Donnell. O'Donnell began the process by training 63 people in an overview of lean manufacturing principles in a 3-hour session. After this training, 18 people were picked from a variety of different departments to attend a 5-day "boot camp" to learn to use the basic tools of lean manufacturing. These people are the "lean champions," and the backbone of the lean initiative.

Most lean programs begin with a Value Stream Mapping process. Value Stream Mapping (VSM) is the creation of a material and information flow map of a product or process to identify areas of improvement opportunity. Minster Machine chose to skip this step, because they had already identified key waste projects in the value stream. Instead, they chose to begin with the Kaizen methodology. Kaizen is an intensive and focused approach to process improvement, and empowers teams to rapidly develop improvements to specific problems in the process. Kaizen can employ other lean

tools such as Kanban, setup reduction, line balancing, and 5S. The Kaizen approach of process improvement defines team boundaries, the sponsor, the project charter, and a method of reporting the results.

Initially, Minster Machine selected six high-priority shop projects for the Kaizen Team. The team achieved savings or improvements of 25 to 80 percent on the projects, with an average of 35 percent.

Today, Minster does one or two factory Kaizen events every month. These events have expanded beyond the factory floor and are frequently associated with improving office (paper factory) processes. The processes of lean and Quick Response Manufacturing (QRM) have also resulted in organizational changes to align multi-functional teams to the needs of specific customer segments. Performing these events is seen as the new paradigm for continuous improvement.

### Finding A Fit

To increase or even maintain profitability, many manufacturers are not in a position to raise prices sufficiently to achieve profit goals. Instead, like Minster Machine, small and midsize manufacturers (SMMs) will have to lower costs. Lean manufacturing is a proven method of lowering costs by eliminating non-value added activities, reducing waste, and creating flow throughout the company. It is a long-term plan to streamline your manufacturing company for the future.

The implication is that every manufacturer must do every part of the process improvement program, regardless of their size and resources. The truth is that there are a lot of common sense and useful ideas in all of these programs, but you must be careful about adopting generic approaches.

Minster Machine did the right thing in examining which parts of lean manufacturing to apply to their type of business manufacturing, as well as which tools were worth the investment of the employee's time. More manufacturers, particularly job shops, should follow this example.

*Mike Collins is the author of Saving American Manufacturing, a comprehensive step-by-step strategy that demonstrates how to ultimately become an organization that will continually find new opportunities in today's fast-changing global environment. IMPO*

