

Lean Forward

COMPANIES IMPROVE PROFITS BY ELIMINATING WASTE

by Gina Gillespie

It started decades ago in the grease-stained bowels of the Japanese automotive industry, spreading westward as manufacturers cut costs using a disciplined, process-focused production system. The Toyota Production System, or Lean production, saved time and effort, and used less floor space, materials and capital investment.

They may not all call it Lean today, but more and more businesses are embracing Lean techniques in order to survive.

"I think everyone who has survived the last two years has been using Lean manufacturing, but they may not know it," says Kim Blagborne, president of Slimline Manufacturing Ltd. Slimline is a custom steel fabrication plant in British Columbia's sunny Okanagan Valley, producing agricultural sprayers, wine tanks, and evaporators for waste water equipment.

Blagborne purchased the company when it was close to bankruptcy in the early 1990s. Over the next 10 years it expanded five times, and grew from a single product manufacturer to a multi-product manufacturer. Despite the growth, 19 employees are currently doing the work done by 35 people that first year. "Basically what we've done is we started to measure," says Blagborne. "If you don't measure you don't know what your costs are."

In measuring, he learned that a part manufactured quickly and simply at point A was hitting a block during assembly at point B. By taking extra time and an additional \$20 at point A to manufacture a more elaborate part, assembly time at point B was cut in half, saving \$80 per hour on the machine.

A key element of Lean is the elimination of waste, thereby increasing the real value to your customers. Lean is also about change. But before the changes can

begin, one must learn to recognize waste.

High Performance Solutions is a Kitchener, Ontario-based company providing coaching for companies desiring Lean, world-class performance. They run workshops on Lean manufacturing, and a Lean certification program is under development. On the company's Web site are listed the seven types of waste: excessive inventory, waiting, motion, transport, defects, over-production, and over-processing.

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Nancy Turner, co-owner,
Cardinal Fasteners

BENEFITS

Bob Kerr is vice-president and senior partner at High Performance Solutions Inc., with 30 years experience setting up Lean processes. He says any company can benefit from using Lean techniques. "In every organization, whether manufacturing, or the service industry, or health care, there is a tremendous amount of waste," says Kerr. "PIMA organizations, using Lean techniques, could identify those areas of waste and eliminate or reduce them."



Companies using Lean techniques report the elimination of waste, increased speed and efficiency, and reduction in launch schedules. Statistics on the Mid-America Manufacturing Technology Centre (MAMTC) Web site show average actual improvements experienced by 13 companies the MAMTC worked with in the Lean process:

Reduced:

Manufacturing lead time: 50 - 90 per cent
Floor space requirements: 5 - 30 per cent
Work-in-Process: 60 - 80 per cent

Increased:

First-Pass Yields: 50 - 100 per cent
Throughput: 40 - 80 per cent
Productivity: 75 - 125 per cent

Doepker Industries is a highway trailer manufacturing business with 300 employees. Implementing Lean techniques allowed them to cut 22 overhead positions without suffering significant operating deficiencies. In their engineering department, turnaround time on some of the design work has been reduced from two weeks to a matter of hours. The company also found a way to paint five extra trailers each week.

For Nancy Turner, co-owner of Cardinal Fasteners, Lean success means her employees are happy and interested in their work again, following periods of low morale and frustration. In their Scarborough, Ontario plant, Nancy, husband Gordon and 30 to 50 employees oversee the distribution and import of screws, nuts, bolts and made-to-order fasteners.

"I had people who wouldn't talk to people – now they're talking," she says.

Turner's company suffered growing pains after sales grew from \$1 million to



\$8 million over a 10-year period. "What happened was the company had grown, but the infrastructure had not grown along with it," says Turner. After husband Gordon attended a Lean-manufacturing workshop, they knew they'd found a tool to give them an edge in the marketplace.

The company hired a consultant from Atlantic Lean Manufacturing (ALM Inc.) in Sackville, New Brunswick, to walk their staff through the Lean process. They also assigned a full-time person to a position as Lean co-ordinator.

The process is on-going, but they're going Lean one department at a time. Already, set up time for machinery has dropped from one and a half hours to 20 minutes. Turner says the key to the process is listening to employees.

"The morale is way up. The pride of ownership, the team building, the awareness that we each have a responsibility in quality, those things have improved 100 per cent," says Turner.

"There's a lot of information, ideas and energy within each employee, yet people

expect those who own the company to come up with the ideas. It's a lot better to have 32 brains, than it is one or two." As the Learning of their business further develops, the company plans to approach customers and suppliers about embracing the process themselves.

DRAWBACKS

Despite the benefits of Lean manufacturing, Bob Kerr from High Performance Solutions estimates only five per cent of companies in Canada (including five per

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cent of the agricultural manufacturing industry) have gone completely Lean. Others are using some Lean tools and techniques. But he believes a full 80 per cent aren't using them at all. One reason for this is that Lean implementation can be painful and disruptive. It involves change, which often brings resistance from management and workers alike.

Often it is a crisis within the company that sparks the need for transformation.

“There has to be someone there with a vision that wants to take the organization down the road,” says Kerr. He adds that, in addition to the need for a leader with vision, management and owners must check their egos at the factory door. “The problem is some engineer or manager thinking they know what's best for a particular area, and then not asking the people working there (for input),” he says. Kerr believes most company presidents want to improve their operations, but are sometimes reluctant to admit they need help, or to look at things differently.

“I just don't think that the top management in organizations are willing to say ‘maybe we are doing things wrong, maybe we should be changing,’” he says. “It may be an ego problem.”

He says going Lean is not a one-time thing. It is a journey with no final desti-

nation, and there are no shortcuts. It involves total commitment from the entire company, and eventually the entire supply chain. It also requires effort to gather data on every step of the manufacturing process.

It's a process Nancy Turner equates to peeling back the layers of an onion.

“Every time you peel back a layer you find something new, something else that could be a possibility for an error that's not mistake proof.”

At Cardinal Fasteners they began to ask the question why — and they asked it a lot, whenever something went wrong in the process. “Was it because our proce-

dures weren't correct? Was it because our people were negligent? Was it because we're not training?”

One trouble spot involved problems with defective bags of products. By measuring, the company learned it cost them \$2 every time a bag was rejected off their machine. “Some of our bags sell for 25 or 30 cents, so you can see how costly it is to have a reject,” says Turner. They began to seek perfection one small step at a time. First they ensured the defective bags never reached the customer. Then they backed the process up so the defective bags didn't leave the machine. They kept narrowing the focus of quality control

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until they'd closed all loopholes and the process was error-free.

Turner says those at Cardinal Fasteners are often frustrated when yet another snag pops up in a process they thought was perfected. “I don't think the pain ever stops completely,” she says. “We think ‘aw gee, we thought we fixed this, but here we go again’. But then we remind ourselves, that's the process.”

Under periods of stress, it is tempting to abandon new procedures and return to what worked well in the past. Bob Kerr from High Performance Solutions says leadership is essential to keep the team on track. He advises making the process fun, by introducing events and competitions to keep things fresh.

HOW TO GET STARTED

Kerr suggests the first step in implementing Lean is to understand the process. Read books like “Lean Thinking” by James Womack and Daniel Jones, take workshops, or hire a consultant.

Value stream mapping is a good way to start the Lean journey. This involves mapping every step in an organization's production process to show where time and money are being spent.

“To stay world-competitive, you have to know what your costs are, because your sales team is coming back saying ‘we need this for \$12,’” says Kim Blagborne from Slimline Manufacturing. He says in the beginning a company may not know what to measure. “You start hunting and looking and asking questions and physically doing the job.”

It is important to remember that lean is more than a business tool; it's a lifestyle change. And there are two essential rules to follow in order to live Lean: First, listen to your employees. Second, drop your ego.

People are key to Lean transformation, from owners and managers, to the work-

ers on the shop floor. If the entire company doesn't buy into Lean, it won't work. Blagborne didn't broach the subject of change until he was able to tell his employees how going Lean would benefit them personally. "If you don't explain the process in terms of what's in it for the employee, Lean manufacturing isn't going to do anything more than throughput did. It's just a bunch of expensive consultants standing in the room," he says.

Gary McCrea, co-owner of Ag Shield Manufacturing, sent his key employees to a PIMA seminar on Lean manufacturing two years ago. Upon their return, the attendees held an in-house course for their colleagues, explaining what was going on and why. "It wasn't us against them, it was them working together," he says.

Gurcan Kocdag, vice-president opera-

tions at Doepker Industries also sent 200 of his 300 employees for Lean training. Kocdag says management sets the standards for the company, but they leave it to the individual worker to decide the best way to meet that standard. "How they rearrange their work area or perform the task is their decision. That overcomes a lot of resistance," he says.

The MAMTC Web site includes suggestions on how to prepare and motivate people for the changes to come. These include:

- Creating a common understanding of the need to change to Lean.
- Pushing decision-making and system development down to the lowest levels.
- Sharing Information
- Training and truly empowering people
- Creating an atmosphere of experimentation, tolerating mistakes and showing patience.

According to "Implementing World Class Manufacturing," a book by Larry Rubrich and Madelyn Watson, 99.9 per cent of what top management knows is never communicated to their employees, who remain uninformed, unempowered, and therefore, unable to influence the results. Companies then find themselves

with 30 to 40 per cent more employees than they would need if they had a focused group of people.

Empowering and training employees makes them more valuable to the company. "The beauty of Lean manufacturing with the cross training is that you can use other people in other positions because they are cross-trained," says Nancy Turner.

While complacency and traditional ways of thinking may be hard habits to break, PIMA-Agricultural Manufacturers of Canada president Jerry Engel says he believes companies must embrace management tools like Lean in order to stay competitive. "Perhaps it isn't essential for the smaller two or three-person operation," he says. "But it definitely is for mid-sized and larger companies."

In response to requests from PIMA members, the association has held workshops to explain the process. Engel says PIMA will continue to hold such events if the demand remains. ❖

Gina Gillespie is a freelance writer for Implement Success magazine.

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