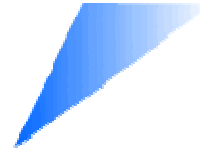


# 'Leaning' the Machine

Manufacturers implement change with computer-based training systems



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New Haven's commercial history is rich with technological advancements in manufacturing made possible by the inventions of Whitney Avenue's namesake, Eli Whitney. Area manufacturers, while operating under many of the manufacturing premises introduced by Whitney, continue to use technology to evolve their business processes.

Through the integration of "lean" manufacturing concepts by Web- and computer-based training, New Haven's manufacturing community is changing the way it operates.

Lean manufacturing is a comprehensive business quality system that requires firms to examine all processes, from administration to the factory floor. Says Tom Burmeister, president of Wallingford-based Manufacturing Technologies International Inc., this philosophy is simply "common-sense manufacturing.

"Implementing lean manufacturing, however, takes a leap of faith," Burmeister adds. A manufacturing organization may not realize the results of implementing lean manufacturing for many months. It takes time for the impact of a change in process to filter through to the systems of measurement employed by organizations.

Manufacturing Technologies helps show the entire manufacturing organization how to think lean.

"It makes sense to recycle and reduce spending on materials when possible, but if you're not thinking in those terms, it will not happen," says Burmeister. Once those within organization begin to think lean, it can begin to reduce waste. This is a reduction not only in a physical sense, but also for those processes that create intangible waste. When the organization embraces this way of thinking, efficiencies of production and process reduce operating costs and increase profits.

Before an organization can begin to enhance its bottom line, all employees need to be trained in the "lean" way of thinking. Training, explains Burmeister, requires more than changing operations. It requires a change of culture - and embracing a culture of change.

To nurture this kind of change effectively, training must be thorough and extensive. Traditional methods for on-site training are time-consuming and expensive.

Advanced computer technologies now provide ways to circumvent the costs of traditional training systems. Manufacturing Technologies International introduces

some clients to new training systems through Waitsfield, Vt.-based Resource Engineering Inc.'s suite of Web- and computer-based courses that support quality and productivity improvement initiatives.

Resource Engineering's director of training, Robin McDermott, remembers the challenges manufacturers used to face when trying to integrate a training program into day-to-day operations.

"Before, as a trainer, I actually had to go into the building to perform a training seminar," says McDermott. "Now, our Web-based training programs offer the manufacturer flexibility in delivery of the training."

Under the traditional training paradigm, an organization faces an unlimited set of issues that are prohibitive to the success of a training initiative. Arranging the seminar around employee and manufacturing schedules becomes a primary obstacle.

A manufacturer may have to shut down production for extensive training, or managers must ask employees to extend their shifts or come in on a day off.

These measures drive up the training price tag by reducing productivity or creating overtime. The organization also must consider how to extend training to employees who miss the scheduled training program or who join the organization after the program ends. Finally, it may take months to arrange a training session based on the trainer's schedule.

"With Web-based training services, employees can train when they need it," says McDermott, "and not when the trainer is available."

The benefits of Web- and computer-based training can create an atmosphere of accommodation for the trainee. The system is available whenever the employee is ready, and employees can complete the program in reasonable, easy-to-digest learning sessions.

In a traditional training seminar, the format requires employees to absorb critical concepts over long hours so the trainer can cover all information in a fixed time frame. By contrast, employees can log in and log out of a Web-based program according to their schedules and their attention spans. The quality of the training increases exponentially as a result.

The benefits to the employer go beyond simply saving money. Web-based systems offer reporting mechanisms that show the employer who has taken the training, how long they spent at it, and how well they performed.

One manager can administer the training for all employees through a single Web-based account. With a corporate subscription, a training manager can divide the Web-based account into cost centers for different divisions, each administered by a separate manager. The system is flexible enough to allow managers to make different training programs available under each cost center.

By monitoring the comprehension and retention rates of workers as they progress through the training system, the manager can identify when the organization might expect to see results from the training in its bottom line.

Resource Engineering's lean manufacturing Web-based course is accessible through its training Web site, [www.qualitytrainingportal.com](http://www.qualitytrainingportal.com). The course takes approximately 15 hours to complete, and is broken into three units covering lean concepts, lean practices, and implementation of the lean philosophy.

The course objective is to provide a consistent image of a leaner organization for every employee. Upon course completion, employees not only will be able to understand the benefits of lean manufacturing, but also implement stream maps, identify potentially wasteful processes and improve process flow.

During the course, Web-based controls allow learners to navigate the system in a manner that accommodates their individual learning styles. The system also presents exercises throughout the course to reinforce technical concepts. Every employee receives a certificate upon completion as documentation of continuing education units awarded for the course.

Other computer-based training formats also are available to manufacturers. Jon Laing, director of professional sales development for New Haven-based Assa Abloy Door Security Solutions ([www.assaabloydss.com](http://www.assaabloydss.com)), uses "Webinars" (or Web seminars) to effect distance training for sales staff located all over the country. Formal Webinar services are available through online providers or can be implemented with software packages such as Instant Presenter ([www.instantpresenter.com](http://www.instantpresenter.com)). This software offers multi-point video conferencing, interactive chat functions, multi-way voice over Internet protocol (VoIP), whiteboard capabilities, and more.

Laing, on the other hand, produces Webinars simply by developing PowerPoint presentations, uploading them to a Web service provider, and interacting over the Internet and conference call with several sales representatives simultaneously.

"It's an efficient means of adult education," says Laing. "But this kind of training has its place. It is not an effective replacement for face-to-face human interaction that is realized in a classroom setting."

Web-based courses and Webinars lend themselves to education that is technical in nature, and are best integrated with a traditional training program for the most effective results. As Laing expands his training program, he expects to integrate more e-learning formats by 2006.

Computer technology is not useful to organizations only as an end product. It is a means to an end. It provides an opportunity for the manufacturer to implement a lean manufacturing philosophy throughout the organization without excessive out-of-pocket costs, production losses, or human resource damages.

Through a properly implemented Web training system, employees can stimulate change on every level by creating greater efficiencies, which in turn increase the market value of the company.

"It's not your father's factory anymore," says Burmeister. As a member of the New Haven Manufacturers Association education committee, Burmeister hopes

to deliver that message to the community, and make a brighter future for New Haven manufacturers.