



A large medical device manufacturer turned to the TBM LeanSigma® Institute for a system-wide approach to lean education and action.

> client | The half billion dollar company provides integrated out-sourced manufacturing and engineering services to the medical device industry in the cardiology, endoscopy, drug delivery, neurology, and orthopaedic markets. They have broad capabilities in design and engineering services, precision component fabrication, finished-device assembly, and supply chain management.

> challenge | The company valued continuous improvement and employee development, but found it difficult to achieve and sustain enterprise-wide results with internal training alone. The company recognized that bringing in experienced, dedicated trainers with proven methods would be the fastest and most effective way to create a uniform continuous improvement culture at each of its 17 sites, enabling them to achieve strategic goals.

> solution | The manufacturer partnered with TBM's LeanSigma Institute, planning a series of eight-week training modules to help build a culture of continuous improvement.

> results | The client is moving quickly toward its goal, having achieved more than \$1.7 million in cost savings during the first five months of continuous improvement training and winning recognition and additional business from one of its largest customers. As a result of this approach to learning and training, they are beginning to realize and sustain results, and experience shifts in their culture — with greater accountability and pride among associates at all levels.

A mid-sized medical-device manufacturer benefited from the Six Sigma blackbelt training it started in 2006, but company leaders suspected that the potential for greater performance lay dormant in their hardworking teams at multiple facilities. So they began to search for a more holistic approach to training, one that would create a lasting culture of continuous improvement throughout the enterprise. In 2008, the global contract manufacturer chose TBM Consulting Group's LeanSigma Institute to help pave the way.

"Six Sigma was more narrowly focused on projects, but it did help us to see the opportunity in an all-around approach," said the Director of Continuous Improvement. "For instance, we didn't make much progress in terms of improving customer experience with Six Sigma, but if you are doing lean the right way, your customer feels it right away."

While many manufacturers know of TBM's highly regarded consulting services, others might be surprised to learn the same TBM experts provide training to companies through the LeanSigma Institute. Joe Panebianco, Director of the TBM Lean Sigma® Institute, said companies regularly approach TBM for training because their global presence, ability to train in multiple languages, and wide variety of subject-matter knowledge makes TBM a good fit for all types of training.

"These companies know that leadership is important, that they need basic training, that they need advanced skills training, and that they have multiple languages in use within their companies and among their clients," Panebianco said. "Many of us were mentored

by the Japanese years ago, and we learned kaizen by doing it, not by reading about it in a book."

The device manufacturer said the Institute's approach of imparting knowledge through traditional classroom education and hands-on training made it a good choice to guide its first steps toward creating a lean culture. The company, which had some experience with lean through its Six Sigma training programs, also valued the importance that the LeanSigma Institute put on sustaining improvements.

"Some consultants carry out the kaizen event, and then they are gone, and sustaining is where the effort fails," the CI director said. "Or, they are great theory and classroom teachers, but short on hands-on instruction. TBM is really good on both counts."

Panebianco said hands-on learning is important because, "Cultures are different, and people learn in different ways, but at the end of the day, you really need to do it to know it."

How The LeanSigma Institute Worked with The Client

After reaching an agreement, the Institute and client determined the parameters of the training plan: length, scope, materials to be covered, etc. Sometimes, things change along the way, and that's O.K. For instance, in this case the client decided to put more effort into leadership training.

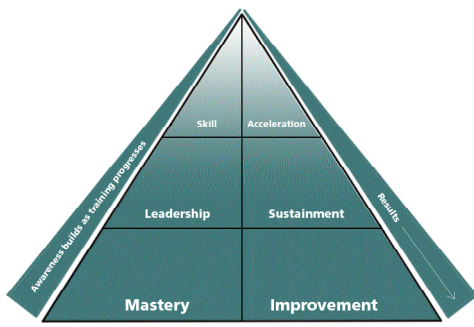
Panebianco said improvements begin during training. The Institute works with the client to create measures that provide immediate feedback and visibility to operators, but that

also support top-level goals. These are posted on a performance board created during each kaizen.

“We work with the management team to pick what makes sense for that area,” Panebianco said. “We select measures that we know, if those measures improve on the floor, their business measures are going to improve.”

Often, the Institute will maintain an ongoing relationship with the client, providing periodic training at the client’s request beyond the initial implementation phase. Effective lean improvements ultimately spur opportunities for accelerated growth, so a company often needs additional or refresher training as they hire new employees or set higher strategic goals. (See Accelerated Learning Model, below.)

Accelerated Learning Model



This is happening at the client’s plants that are further along in lean improvements, such as those providing additional goods and services in response to increased orders.

For an engagement of this scale, the Institute expects “multiple return on investment,” Panebianco said. “Between the projects we did as part of the training, and the projects the students had to do, I’m confident they will get a seven-to-one ROI the first year. Training is so often referred to only as a cost, but at this level you can say you’ll get three, four or seven times back in the first year.”

“We were able to show the customer the difference on the plant floor right away. After they saw how we were doing lean, they became a big believer, and we started getting new product proposals coming our way.”

Aiming For Big Impact, Right Away

The client and TBM began training at the company’s largest plant in the midwest, and focused on improving value for one of its largest customers. The goal was to have as big of an impact as possible early on to build enthusiasm and momentum.

The company planned three waves of training, starting with one plant and seven other large

plants in the first wave. Ten people at each site participated in the eight-week program. See model below.

In medical-device manufacturing, customers demand optimal lead time and responsiveness — along with inventory control to contain costs. Hence, the training plan for improvement focused on better productivity, decreased lead time and reduced WIP.

Through a combination of partnering on training with the Institute and working on improvement independently, the client was able to achieve the following improvements. In addition to cost reductions, the client has received the most highly sought reward for process improvement — increased sales. One of its largest customers has rewarded the company with its highest supplier recognition for lean performance, and is increasing orders.

What’s Happening Next?

The first wave of training ended in July. Each of the eight sites has a dedicated kaizen leader, and the other sites are getting them as well. At least half of the company’s plants are at some level of lean improvement. They have created

Eight-Week Training Model

- Week 1:** Assessment and planning
- Week 2:** Kaizen event focused on one product family
- Week 3:** Follow-up on kaizen event to make sure implementation was being done correctly and sustained
- Week 4:** Value-stream mapping in the classroom
- Week 5:** Kaizen event focused on another product family
- Week 6:** Classroom learning on the role of the kaizen promotion office/officer
- Week 7:** Kaizen event on two additional product families
- Week 8:** Classroom learning on leadership on the plant floor

Hands-On Training Brings Immediate Improvement
11 kaizen events in five months save \$1.7 million*

2/23/09	Kaizen 1	<ul style="list-style-type: none"> • Productivity improved by 22% • WIP decrease of 96% • Lead time reduced by 90%
4/27/09	Kaizen 2	<ul style="list-style-type: none"> • Productivity improved by 22% • WIP decrease of 96% • Lead time reduced by 90%
5/11/09	Kaizen 3	<ul style="list-style-type: none"> • Productivity improved by 50% • WIP decrease of 82% • 5 operators reduced to 3
5/15/09	Kaizen 4	<ul style="list-style-type: none"> • 8 safety concerns eliminated • 5S and TPM checklists implemented
6/1/09	Kaizen 5	<ul style="list-style-type: none"> • Productivity improved by 43% • WIP decrease of 86%
6/1/09	Kaizen 6	<ul style="list-style-type: none"> • Reduced cycle time • Reduced transportation and queue • Productivity improvement
6/4/09	Kaizen 7	<ul style="list-style-type: none"> • Productivity improved by 75% • WIP reduced by 89% • Lead time reduced by 95%
6/26/09	Kaizen 8	<ul style="list-style-type: none"> • Productivity improved by 28% • WIP decrease of 75% • Lead time reduced by 55%
6/26/09	Kaizen 9	<ul style="list-style-type: none"> • Productivity improved by 50% • WIP reduced by 94.3% • Lead time reduced by 94%
7/13/09	Kaizen 10	<ul style="list-style-type: none"> • Productivity improved by 33% • WIP reduced by 80% • Lead time reduced by 80%
7/14/09	Kaizen 11	<ul style="list-style-type: none"> • Productivity improved by 1% • WIP reduced by 66% • Lead time reduced by 78%

Source: Client, * cost savings plus inventory reduction

scorecards based on process improvement, not metrics. Each year the goals will be higher; for example, the Chicago plant held nine kaizen events in 2009 and will have 12-15 in 2010. Panebianco said the Institute's emphasis on sustaining improvements will be crucial to continued success as the training spreads to other sites, functions and product families. "Just like a patient in critical care after an

operation, you can't just walk away then," Panebianco said. "You have to nurture and help the patient through to make sure they come out on the other side healthy and vibrant."

About the TBM LeanSigma Institute

The TBM LeanSigma Institute provides the knowledge transfer needed for a company to independently drive sustainable performance resulting from its lean transformation. The Institute offers a wide range of customized training solutions, experiential workshops, online training and user conferences to provide organizations with the necessary tools to launch and manage their own LeanSigma initiative. Our faculty is drawn from TBM's most experienced consultants, providing essential, experience-based LeanSigma training and development. Our action-oriented curriculum is rooted in the Toyota Production System and distilled from hands-on experience.

The Institute specializes in creating and implementing customized training programs for organizations of all sizes and in all sectors. The Institute's team of highly trained consultants work onsite with company leaders and team members in response to a variety of comprehensive training needs. Among these are leadership development, value stream mapping, kaizen training and implementation, certification training, visual systems creation, and daily metrics monitoring plans. Learn more when you click on the "training services" tab at www.tbmcg.com.



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