

CASE STUDY

Seaman Corporation Embraces Lean for Longterm Profitable Growth

Client

A family-owned manufacturer of high-performance coated fabrics used for industrial applications.

Challenge

In the mid-2000s, responding to heightened global and domestic competition, the company's senior leadership team prioritized the need to lower production costs and improve efficiency.

Solution

Build CI capability and implement lean using an outside resource to deliver improvements that achieve the highest-possible ROI. TBM was initially engaged to improve the cost of quality. For nearly fifteen years TBM has continued to support growth, sustainment and the capture of financial returns.

Results

The primary competitive benefit, according to Richard Seaman, is enhanced responsiveness and manufacturing flexibility, which enables them to respond quickly to customer requests.

Other highlights include:

- 85% revenue growth
- \$35 million in savings from first pass yield improvement from 88% to 97%
- A 75% reduction in line changeover times, enhancing flexibility
- 72%-82% productivity improvement
- On-time delivery upwards of 98%
- Inventory turns from 4.0 to an average of 8.8 annually

Compounding, multimillion-dollar ROI drives Ohio manufacturer's ongoing commitment to operational excellence.

Headquartered in Wooster, Ohio, Seaman has a strong, family-oriented culture. Company associates have a sincere and deep respect for one another. That respect encourages the free exchange of ideas and interdepartmental communication. Over the past 15 years, a big part of TBM's role has been to provide an outside perspective, spotlight opportunities and challenge company leaders to set their sights higher. Not that they have needed too much encouragement.

Current chairman of the board, Richard Seaman was CEO of the company for almost 40 years. He has always been passionate about experimenting with innovative ideas for new products and new manufacturing technology. Under his watch the company grew from annual sales of \$10 million in 1976 to over \$200 million today.

Responsiveness and flexibility are one of the strategic drivers of the Seaman's growth. The company's flexible systems and production lines can make customized products and deliver them quickly.

["Speed is one of the strongest competitive advantages you can have."](#) says Richard Seaman. "Because of the way we've invested—not only in the technology and the equipment, but the ability to run that equipment, the ability of our associates to be responsive and recognize the need to do that, to support customer's needs—it allows us to be far more responsive to our customer needs."

Seaman leaders estimate that they can manufacture and deliver customized products twice as fast as competitors, a core capability which often wins the order.

Building Capabilities

Over the years, TBM has helped build Seaman's internal improvement capabilities by creating a continuous improvement culture, through one-on-one coaching, by using kaizen events, Six Sigma training, and by introducing a wide variety of problem-solving techniques. (See sidebar of long term partnership for specific initiatives.)

Cumulatively, in addition to productivity increases and millions of dollars in cost savings, these efforts have freed up enough floorspace for the company to more than double its sales volumes without expanding its plants or adding any new facilities, avoiding significant capital expenditures.

From the very beginning of our relationship, Seaman established a continuous improvement office and later hired LeanSigma Managers for its primary facilities in Wooster, Ohio and Bristol, Tenn. The site leaders drive improvement as project planners, communicators, mentors, trainers and team facilitators. To align their efforts to the company's long-term goals, annual policy deployment links the KPO action plans to Seaman's strategic plan and annual business plans.

"It's not only about the cost savings and efficiency gains, although those are obviously critical," said Jonathan Wheatley, TBM Client Manager. "It's about the cultural transformation. Operational excellence has become a way of life at Seaman."

What's Next? Industrial IoT

TBM is currently helping to improve the company's daily management capabilities using Dploy Solutions. TBM's data integration and visualization software integrates data from ERP systems and the factory floor to provide a real-time view of performance, eliminating spreadsheets and manual reports. Digitizing the daily management system accelerates communication, follow up and correction of issues.

"Phase one will capture and analyze existing machine data from several lines experiencing minor stoppages and lower OEE," says Wheatley. "Engineers will be able to conduct root cause analysis and study how speed, temperature, pressure, flow rates and material thickness affect throughput, quality and productivity. Identifying optimal equipment settings should improve performance 5-10% and save more than \$1 million annually while freeing up capacity to support future growth."

Long-Term Partnership, Multi-Faceted ROI

Early Progress

Starting in 2006, the initial kaizen events at Seaman Corp. focused on improving quality and uptime, and reducing setup times. Subsequent projects focused on raw materials, work-in-process and finished goods inventory reduction.

Production Preparation (2P)

Capitalizing on floorspace savings, we helped optimize the design and setup of new production lines at Seaman facilities in Ohio and Tennessee to efficiently produce high quality product.

Six Sigma Training and Certification

Two rounds of Six Sigma training and coaching. We certified members of the Seaman engineering team in identification and variation reduction techniques.

ERP System Troubleshooting

TBM supported a post-ERP implementation audit process to identify areas of improvement, prioritize issue resolution, identify standard work gaps and ensure that critical business process were not overlooked.

Planning and Review Sessions

Biennial audit of improvement activities and results. Reviewed project highlights and results at all facilities with the senior leadership team, establish priorities for coming fiscal year.

200th Kaizen Event

The company recently conducted its 200th, week-long kaizen event at the Wooster location in addition to multiple point kaizens throughout their 25 year journey. Seaman has achieved an advanced stage of lean maturity that we call "principle-driven".

Organizations like this embrace an enterprise-wide management system and apply that system knowledge across the business and in acquisitions to align actions to results, improve execution and accelerate value creation.

First Steps on a Long, Productive Journey

TBM performed our initial diagnostic on Seaman's production facilities in 2005. At the time the industrial textile company was facing stiff competition from domestic and offshore suppliers. Raw material price increases were eroding margins. Productivity was low and scrap was climbing. Customers' fast order delivery expectations were being fulfilled by holding high levels of finished goods inventory.

Our first kaizen event the following spring focused on reducing off-grade costs improving machine uptime and reducing setup times. After establishing more robust quality processes and faster line changeovers —proving to customers and salespeople alike that they could manufacture and deliver any order within a week —we began working on reducing inventories. Over time the company's inventory turns have increased from around 4 to as much as 11 turns per year (with an average of 8).

"Every year, we conduct a planning and review audit on 18 key categories," says Raj Venkataraman, V.P. of Operations. "They identify [and] guide us where we can improve on opportunity for future growth."

Seaman's improvement project selection criteria is stringent. The return on investment must be \$100,000 or higher, which is tracked religiously. "They still track the very first event that we did," says Wheatley. "Rolling it up against the sales volume increase as a result of those improvements, which adds up to about \$24 million in savings."



One reason Seaman associates are less resistant to change is because everyone is involved. Since the beginning, people at every level—executives, equipment operators and office staff—have directly worked on improvement projects. Every manager and 85% of associates have participated in at least one kaizen event.

Another reason people embrace change is because Richard Seaman never misses an opportunity to remind them —while the company has made huge gains and progress over the past 15 years —there are still plenty of opportunities to do better and keep growing.

Speed wins every time.

TBM specializes in operations and supply chain consulting for manufacturers and distributors. We push the pedal down in your operations to make you more agile and help you accelerate business performance 3–5x faster than your peers.

