

## CASE STUDY

# Famous Brand Shoe Manufacturer Masters Style Changeovers—Improves Ability to Reach Target Production by 75%

## Client

World-famous footwear manufacturer with 6,000+ employees based in Indonesia.

## Challenge

The company's client required small batch production with short lead times for delivery. The lead time to complete a changeover and ramp-up to target production of a new style was taking 2-3 weeks.

## Solution

TBM established a Kaizen team with the manufacturer, listed all improvement opportunities during changeover process, implemented Kaizen activities, distinguished the internal and external operation activities, and developed and implemented all action plans.

## Results

- Reduced the time to achieve target production of a new style from 2-3 weeks to 5 days.
- Changeover time reduced from 7-8 hours to less than 2.5 hours.
- Increased the line balancing rate from 53% to 81%.
- The production trial pass rate improved from a low of 86% to a high of 99%.
- People per hour improved from .32 to .79.

## An Indonesian large scale shoe manufacturer accelerates product changeover time, enhancing capacity and improving quality and delivery.

Nowadays flexibility is key for most industries, but perhaps none so much as the garment and footwear fashion business. Style trends are fleeting, and the types, colors, functions, and designs that are hot today won't necessarily be hot tomorrow. Fashion manufacturers must remain nimble and act fast to keep up with the dynamic market and get ahead of competitors while still maintaining profitability. It's a tall order.

The TBM Leansigma® method provides solutions to these challenges. However, fashion manufacturers can sometimes be reluctant to implement lean, at least in the beginning. "If companies have tried lean methods in the past, and failed to achieve or sustain results, we often hear things such as, "lean is useless" or "there's no need to change," says TBM client director Mao Anbang. "We understand their difficulties, and through an approach that emphasizes speed and rapid results, we can often change these misconceptions in short order and help manufacturers fully embrace the advantages of lean."

## Like It or Not, You Can't Succeed In Small Batch Without Being Lean

Flexibility is key to achieving small batches, short delivery times, and low inventory. Small batch production involves many mixed modes. To be successful, fashion manufacturers that operate in this way must become masters at efficient changeover so they can quickly shift from one style to the next.

But too much inventory and too few skilled workers are the nemeses of rapid changeover. Fashion companies that are dealing with inventory and talent challenges need to address these issues first if they hope to achieve the small batch productivity goals and short delivery times that are critical in their industry.

TBM worked with an Indonesian large-scale shoe manufacturer facing just such a conundrum. Changeover from one style to the next was taking several days and sometimes even longer than a week. It took another two weeks to reach a targeted output. With its customer putting the pressure on to meet delivery and quality requirements for mixed-size small batches, the company's changeover challenges were jeopardizing its ability to compete, not to mention taking a toll on the bottom line.

The company knew it needed a better approach, and fast. Setting aside any qualms it may have had related to lean, the footwear manufacturer decided to call in the experts to see what could be done.

## Set Up the Kaizen Team, Find Opportunities to Improve

TBM rapidly established a Kaizen team to observe the entire changeover process from end to end including preparation and actual operation. It quickly became clear that the changeover process was failing before it even had a chance due to insufficient preparation of manpower, raw materials, and machinery. Furthermore, the internal team was handling many external assignment, wasting changeover time while negatively impacting product quality. Finally the operators lacked sufficient new product knowledge and the right skill sets for the work, further increasing time and costs.

## Set Improvement Goals and Track Progress

The good news is, there was no shortage of areas for immediate improvement or leaning-out the business. The Kaizen team listed all the opportunities, distinguished the internal operation activities from the external activities, established action plans, and quickly launched Kaizen events to start capitalizing on the available gains.

This work turned up several additional issues including a lack of connection among product engineering, manufacturing, and machinery. The team identified a misalignment in the rate of process between materials preparation and machinery preparation, meaning one group was always waiting on the other.

To solve for this challenge, TBM worked shoulder-to-shoulder with the various departments to establish new leaner product standard working processes and set appropriate time requirements to synchronize all components of the prep work. Once all departments committed to the plan and new standards, the team launched a visual board to track progress, encourage collaboration, and drive individual department and team accountability.

The Kaizen team also noted difficulties caused by inappropriate tools and equipment, leading to a longer adjustment time.

Through a separate Kaizen event, team members worked together to standardize preparations for equipment and tools. By conforming to lean "easy to manufacture" standards through the design of proper tools, the manufacturer shortened the cycle time even more.

Seq. #	Changeover Element	Elapse Time	Element Time	Individual Element Times								
				20	40	60	80	100	120	140	160	
1	Get sole mold	2'	2'	[Bar chart showing 2' duration]								
2	Open tool	2'8"	8"	[Bar chart showing 8" duration]								
3	Clean tool	2'23"	15"	[Bar chart showing 15" duration]								
4	Spray release agent	2'28"	5"	[Bar chart showing 5" duration]								
5	Get cut parts	2'38"	10"	[Bar chart showing 10" duration]								
6	Insert cut rubber parts	3'38"	1'	[Bar chart showing 1' duration]								
7	Close divider	3'48"	10"	[Bar chart showing 10" duration]								
8	Insert second color	4'18"	30"	[Bar chart showing 30" duration]								
9	Close mold	4'28"	10"	[Bar chart showing 10" duration]								
10	Insert mold on platen	4'43"	15"	[Bar chart showing 15" duration]								

## Reach Target Output and Deliver on Time

The team then turned its attention to the timeframe for reaching target output. Here, the problem and delays boiled down to a lack of well-developed skills as well as an operator gap—or simply not having enough operators to do the work.

The team identified key processes and revamped technician preparation and training programs to build the essential skills among all operators. Implementing a standard process for analyzing operators' skills one month ahead of production equips the company to better understand its talent situation and proactively address it. They continuously train the talent pool and rotate operators. This allows the company to make adjustments and ensure that skilled back-ups are available to rotate in as needed. In this way, the company can help keep skill shortages from derailing the production plan.

**“Our changeover time reduced from 7-8 hours to less than 2.5 hours. We also achieved higher quality standards and productivity.”**

**— Operation Director,  
Indonesian large scale shoe manufacturer**

## Less Waste and More Productivity Are the Signature Outcomes of the LeanSigma® Methodology

Lean is not a new concept and many manufacturers have been down that road before. However, when done right, lean remains the most tried and true approach to driving rapid efficiencies and reducing costs while making workers more productive and increasing product quality. Whether a manufacturing outfit needs to transition from traditional to small batch production or simply wants to make its operations as effective and profitable as possible, LeanSigma provides the roadmap to rapid and sustainable gains.

Contact Stanley Mao, Client Management Director for Footwear, Textiles, and Sporting Goods at [smao@tbmcg.com](mailto:smao@tbmcg.com) | [tbmcg.com](https://www.tbmcg.com)



© TBM Consulting Group, Inc.  
LeanSigma is a registered trademark  
of TBM Consulting Group, Inc.

Scan this code to learn more about TBM's Operational Excellence services for footwear manufacturers.

