

SUCCESS STORY



Systemic Continuous Improvement—a Next Generation Manufacturing Success Strategy

Gusmer Enterprises Saves with Quick Changeover



Gusmer Enterprises, Inc.™

A four-day set-up reduction blitz generates lasting benefit

Gusmer Enterprises, a third generation family-owned business, operates two manufacturing facilities. Their Waupaca, Wisconsin plant manufactures filtration products used in the production of beverages and pharmaceuticals.

Bill Abraham, plant engineer, was tasked with finding ways to improve Gusmer's competitive position, maximize the plant's current capacity, focus on value-added activities, and conversely, to eliminate activities that do not add value.

After a thorough review of a range of consultants, Gusmer tapped WMEP to provide lean expertise and facilitate fundamental changes to help Gusmer meet its objectives. Gusmer believed WMEP's extensive

Gusmer Results:

The results of the Quick Changeover project:

- ▶ Reduction of Downtime/Set up time by 70% - the goal was a 50% reduction
- ▶ Production flow maintained - Operators now can change dies on the fly, without having to shut down the machine
- ▶ Thirty years of thinking were changed in four days - employees now make suggestions for process improvements



A Stack Unloader with Vision (SUV), one of the machines involved in the four-day set-up reduction blitz.

background in Low Volume, High Variety manufacturing was a perfect fit for Gusmer's operation. Steve Straub, WMEP manufacturing specialist, launched the program by engaging Gusmer's staff in two days of Value Stream Mapping and a four-day set-up reduction blitz. "This process only works if the employees buy into it," said Straub. "Employee input enables problem-solving and gives employees ownership of the development of a workable solution. Initially Gusmer's experienced,



Gusmer exceeds its set-up reduction goal

committed staff was a little skeptical of the program, but nevertheless jumped right in and ran with it.”

WMEP trained the Gusmer team in the methodology called Single Minute Exchange of Dies (SMED). This robust process systematically removes all wasted activity during the changeover from one product to another. With employees routinely spending almost three hours setting up the converting equipment on the end of the paper machine, there was significant room for improvement. Though the group set a goal of reducing the set-up time by 50% - no one thought it was achievable.

The first step was to understand the current state. Each element of the existing set-up process was documented using a Changeover Observation Form to document every step in the process using a stopwatch, a diagram and video taping the existing process.

“Viewing this video was a painful process,” said Abraham. “It really showed how many miles our operators walked when setting up the die.” The “spaghetti” diagram illustrated every step the operator took to change the die. “Spaghetti is the perfect way to describe the resulting drawing,” said Straub, “One glance will tell anyone that there is a lot of wasted activity.”

While viewing the video, the group analyzed each step and brainstormed ways to improve the process. A Changeover Analysis Chart was used to document the proposed new process, and estimate the time savings. “Everyone had suggestions on how to improve, and had a great sense of pride in taking part in the process,” said Abraham. A total of 18 ideas for improvement were generated, including making a tool shadow board (outlining and labeling each tool for immediate access), setting up a staging area, placing shim paper close to the press, and installing a permanent shim on the bolster plate.



The spaghetti diagram illustrates the steps each of the three employees make when changing the die on the Bliss II machine.



Two Gusmer employees practice quick-change over on the SUV equipment.

Gusmer Enterprises

Some of the improvement ideas were worked, others did not. WMEP's Straub advised the team to continue to make changes until everything clicked. Then on the fourth day, the group was ready for a trial run. Actually several. "Finally on the fifth try, we had a successful run," said Abraham, "We reduced the setup from 2 hours 42 minutes to just 36 minutes!"

This was well above the 50% goal set by the team.

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*Bill Abraham,
Production Engineer, Gusmer Enterprises*

Though it was a major commitment for Gusmer to shut down the line for four days – especially when business has been good, the company is very pleased with the results, said Abraham. "This workshop made us stop and look at ideas for improvement – we've had some of these ideas for three years but never took the time to implement them. We also took some time to recognize our employees and to celebrate the success."

"It's important to have a partner on the Lean journey. For a very small investment, WMEP has provided the expertise, tools and guidance that helped make our Lean journey so successful. We are more focused on providing value to our customer than ever before."

*Bill Abraham
Production Engineer, Gusmer Enterprises*

Abraham has the following advice for businesses considering Value Stream Mapping or other Lean methods:

- ▶ Don't expect big single improvements. Progress comes in many incremental improvements.
- ▶ Get employee buy-in. The process can be a huge morale booster when presented and executed properly. Even though the plant is much more productive, no jobs were lost. Rather, employees are free to focus on jobs they enjoy, rather than spending time on unproductive, repetitive tasks.
- ▶ Don't over-analyze – if it seems like a good idea, go with it.
- ▶ Visit other companies that practice Lean to get ideas and share your own successes
- ▶ Create a sense of urgency and a goal to get better at everything you do.

Success

Since 2008, Gusmer has completed eight Lean events, including Single Minute Exchange of Dies (SMED), 5S, Kanban and Point of Use System (POUS) resulting in:

- ▶ Reduction of Downtime/Set up time by 70%
- ▶ Increased efficiency from operators changing dies without having to shut down the line.

Gusmer's lean journey continues. They've formed a Lean Leaders Team, have four active improvement teams, and are planning to schedule three events based on employee suggestion. "It's important to have a partner on the Lean journey," said Abraham. "For a very small investment, WMEP has provided the expertise, tools and guidance that helped make our Lean journey so successful. We are more focused on providing value to our customer than ever before."

About WMEP

WMEP is a private, nonprofit consulting organization committed to the growth and success of Wisconsin manufacturers. WMEP is a leader in bringing Next Generation Manufacturing best practices to Wisconsin firms to help them achieve world-class performance through innovation and transformation.

For more information, visit www.wmep.org or call 1-877-856-8588.