

Transforming Operations Into a Strategic Competitive Weapon

Accelerated Lean Manufacturing Implementation
at a Diversified Manufacturer of
Industrial and Commercial Equipment

A Kaufman Global White Paper

Kaufman Global
Tele: +1 317 818 2430
www.kaufmanglobal.com

KaufmanGlobal®
ACCELERATING PERFORMANCE

Background

Kaufman Global helped a leading, multi-site manufacturer of industrial and commercial merchandising equipment implement Lean manufacturing to obtain immediate, significant financial benefits and lay the foundation for ongoing Continuous Improvement. Recently acquired, the company's corporate owners realized that to fully leverage the acquisition as a competitive force, its operations needed to be transformed from traditional levels of performance to world-class quickly.

Positive results were obtained immediately, but the operations staff realized that achieving a self-sustaining Lean culture would require several years of focused effort and strong leadership to make it "the way of doing business." This white paper describes the results obtained during the first year of their Lean journey.

The plan involved several elements:

1. Obtain immediate cash-positive results
2. Establish the foundation for a world-class Lean manufacturing culture
3. Focus every employee on Lean objectives
4. Resolve operational concerns at key sites

The Strategy

The strategy was to plant "Lean seeds" throughout the organization, while focusing intense efforts on key sites and issues that demanded immediate

"Our costs are too high and demand for our products is increasing. We need to improve throughput and, at the same time, lower our total cost per unit — fast."

~ VICE PRESIDENT OF OPERATIONS

results to achieve business objectives. As Kaufman Global delivered direct implementation support, Lean training, hands-on coaching, and change facilitation to different groups throughout the organization, results ranged in effectiveness. In some locations, minimal assistance proved to be the catalyst for rapid, enthusiastic adoption of Lean tools and methods. At other locations, significant resources were required to achieve even modest results.

Company leadership knew that the Lean effort would need to be intense *and* broadly disseminated at the same time. Key sites, processes and functions had to be rapidly transformed, and at the same time, all sites needed to begin making visible progress. There could be no laggards and no "curing" time in this endeavor; business conditions demanded swift and decisive action. To address this situation, the leadership team devised a bold vision and aggressive Lean implementation strategy, including:

1. Embrace Lean manufacturing and operations management as primary organizing principles throughout;
2. Establish common measurements for cost, quality, service, and safety, and provide clear, meaningful metrics to all operations employees at every level;
3. Achieve dramatic results in critical sites as quickly as possible through the use of focused consulting support;
4. Provide focused resources at other key locations to initiate and sustain the broader initiative;
5. Implement the basic internal organizational structures for continuing Lean improvements in all operational areas / processes;

Implementation Support

At the onset, it was recognized that a successful effort would require considerable external expertise and support for 6 to 12 months. The leadership team determined that the most effective means of providing such support was to engage the parent company's internal consulting group and an external Lean implementation company — Kaufman Global.

“After 4 years of trying to make these types of changes, we are finally able to get it done.”

~ DEPARTMENT SUPERVISOR

This integrated support model required no “training” time, and all resources could be applied immediately.

The Lean Initiative

The implementation project was conducted over a 40-week period beginning in February. Four primary sites were provided with external Lean resources to assist them in resolving key issues and establishing the foundations of Lean operations. Upon completion of the formal project, the initiative continued at a high-level of intensity, led by each site’s management team and supported by corporate operations staff. The main activities were the same for all sites, including:

1. Train and dedicate the substantial resources required to drive high-impact operational improvement;
2. Flowing down sector business objectives and balanced scorecards to each workgroup with metrics that employees could relate to their jobs;
3. Form a Plant Steering Team at each site to coach, guide and direct all Lean efforts;
4. Establish the Lean Daily Management System® (LDMS®)¹ in all intact workgroups at each site;
5. Reduce space requirements, increasing throughput and removing waste by applying the following Lean methods:
 - a. Accelerate Change Process (ACP) events, or Kaizen Events, in which a team studies and improves a process, function or work area in one week
 - b. Changeover improvements
 - c. Kanban systems
 - d. Workplace organization and visual systems

- e. 5S
 - f. Work balancing (takt time)
 - g. Error proofing
 - h. Layout changes
6. Establish daily “plan versus actual” goals and reviews.

The company’s largest site (over 1,200 people) had considerable corporate and consulting support throughout the life of the project. The site hosted two successive waves of Lean Leadership® Flight Training while implementing its own Lean operations changes. The intensive Flight Training program provided classroom and hands-on training to Lean Leaders — individuals identified to be experts on all facets of Lean manufacturing and change management methods — from multiple sites. As an integral part of their training, Lean Leaders were required to work with their home site management to develop and launch a customized site Lean operations plan.

The Flight Training program empowered internal change agents with the following skills, knowledge and experiences:

- Personal behavior coaching and group facilitation techniques necessary to support implementation
- Formal instruction on how to:
 - Form / select, coach and operate the Plant Steering Team
 - Form work stream teams, select team leader and members, and generate team charter
 - Facilitate the installation and operation of LDMS into each intact workgroup, including metrics generation and tracking
- Training on additional Lean methods / tools as needed, including:
 - ACP planning, delivery and follow-up
 - Work balancing and standard work
 - 5S
 - Workplace organization and visual systems
 - Value stream analysis
 - Process mapping
 - Project management

Additionally, a week of intensive LDMS training was held at the beginning of the project for representatives from all sites. While LDMS training is a significant component of the overall flight training, it was recognized that this method of engagement needed to be seeded into every location quickly. The leadership team felt that the daily workgroup meetings, with their focus on metrics and performance, were too important to delay until the Lean Leaders graduated. Therefore, LDMS leaders were tasked with rolling out LDMS at their sites before Lean Leader training was complete.

Results, External Costs and Bottom Line Benefits

The results noted in this report are measured on an annualized basis. **Table 1** below summarizes the results from the individual sites.

Reporting to Plant Steering Committees, 24 process teams were created to focus on a key process or function for several weeks to several months. Teams participated for 5 to 10 hours per week. These teams addressed everything from sales order processing to metrics development and warehouse processing.

Trained in two waves, 21 Lean Leaders expanded and continued the Lean implementation in 14 other sites. With good leadership at these other locations, it is reasonable to expect results comparable to those in **Table 1** over the following 24 to 36 months.

Inventory reduction is a major component of every Lean operations effort. Less inventory means less floor space, smaller lots (less work-in-process), faster cycle times, and increased throughput. This results

Activity, Result or Benefit	Site A	Site B	Site C	Site D	Total
Accelerated Change Process (ACP) Events	38	20	11	3	72
Square Footage Freed Up	100,000+	175,000+	50,000+	100,000+	425,000+
Lean Leaders Trained	21*	*	*	*	21*
Process Teams Launched	14	3	3	4	24
LDMS Workgroups Installed	80	40	12	30	162
Inventory Reduction (one-time savings)	\$11.5M	x	x	\$2.0M	\$13.5M
Recurring Annual Overhead / Labor Savings	\$6.6M	\$2.0M	\$0.6M	\$1.9M	\$11.1M
Total savings from first 12 months	\$18.1M	\$2.0M	\$0.6M	\$3.9M	\$24.6M

*Lean Leader training for all sites was hosted at Site A

x Not an emphasis at this site

Table 1 - *The benefits case from the first 12 months of the project netted this client a 10:1 return on investment*

As the results indicate, the company's strategic Lean thrust was immensely successful. Over 425,000 square feet of floor space was freed up through workplace organization and inventory reduction. Site D eliminated enough floor space to consolidate its operations from two buildings to one and later leased the empty building. These space reductions created room to increase production with minimal capital expense.

During the course of the effort, over 70 ACPs were conducted (not counting those run by Lean Leaders returning to sites other than those listed in **Table 1**).

“Although the complete assembly line team was forewarned of the upcoming ACP and radical changes that were planned, they were completely amazed at how much change could happen so quickly.”

~ ACP TEAM LEADER

in less finished goods inventory and smaller raw material stores. The efforts of this project resulted in a one-time inventory reduction of \$13.5M. This is pure cash and always an effect of an aggressive Lean effort.

While the inventory savings were a one-time cash flow benefit, overhead and labor reductions are a recurring benefit. These savings amounted to \$11.1M per year for the four sites.

Figure 1 displays the net positive cash flow by week for the calendar year. The project was always cash positive; that is, benefits always exceeded costs. The rapid acceleration of the benefit curve between weeks 20 and 36 was due to inventory reduction savings during that period. Both before and after that period, the net benefit slope is driven by small reductions in work-in-process inventory and savings in labor and overhead.

To sustain and build upon the above benefits, each site needed to have the proper focus, structure, discipline, and ownership of sector goals among the entire workforce. This needed to happen at the workgroup level. For this reason, the leadership team directed considerable resources to install LDMS in all intact workgroups. As **Table 1** shows, 162 workgroups began using LDMS to focus their efforts on key metrics for safety, quality and cost.

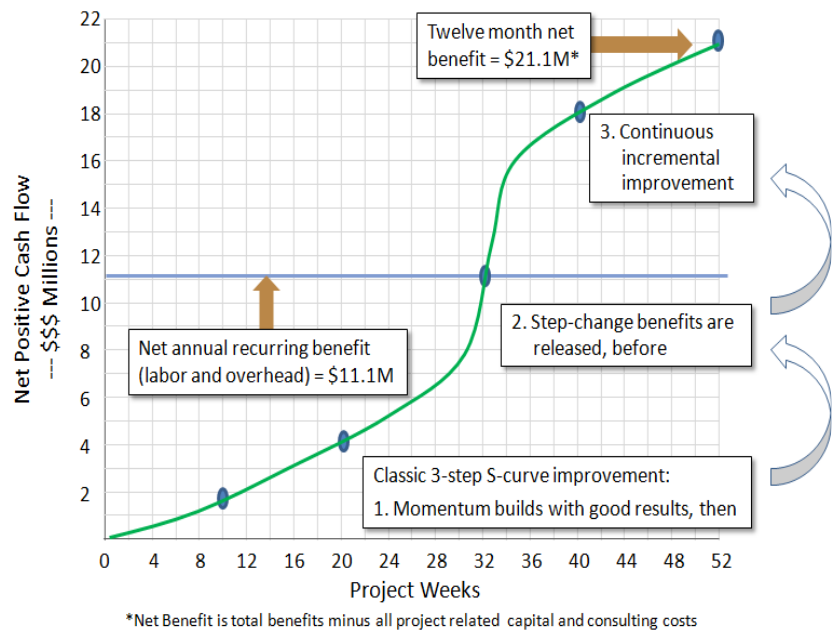


Figure 1 - Projected and actual cash flow analysis and payback curves

Results and Accomplishments

These outstanding results would not have been achieved without leveraging newly trained Lean Leaders, LDMS candidates, team leaders and Plant Steering Teams who understood that taking risks and taking action is part of the change process.

Leadership and mentoring from the corporate consulting team, combined with the Lean content and implementation experience of the Kaufman Global team, were potent catalysts in this major Lean effort.

"People are working together. Yesterday we needed a replacement end and within three minutes the new end was punched, formed and headed to the paint line. Before, we wouldn't see the replacement until the next day."

~ LINE EMPLOYEE

End Notes

¹Lean Daily Management System® (LDMS®) is Kaufman Global's proprietary management system for small workgroups and the primary means of sustaining and expanding the results of implementation. There are seven key elements of LDMS. The first five are for the intact workgroup and the last two are for their supervisors / area leaders.

- a. *primary visual display*: A large, permanent bulletin board that operates as a daily status and improvement planning display for a single intact workgroup. It displays key indicators of the group's performance (e.g., productivity, defects, customer satisfaction, attendance, skill versatility and safety), posted and updated on a daily basis.
- b. *daily workgroup meeting*: A tightly facilitated, loosely scripted, structured, daily, stand-up meeting held by members of an intact workgroup held in front of the group's primary visual display and lasting no more than ten minutes. This meeting does several very critical things: (a) it brings the workgroup together as a team; (b) it provides every person in the workgroup with the same picture of what is going on; (c) it focuses each person on the metrics and key performance indicators that are critical to management; and (d) it generates a sense of ownership among the team about their area and processes.
- c. *Kaizen action sheet system*: A method for capturing small, low-tech improvement ideas within an intact workgroup that they can control and implement with little or no support
- d. *20 Keys® long-term improvement plan*: A method for focusing an intact workgroup on the 20 most important elements of how it is operating versus world-class (or better) standards. The method provides an assessment of current status, management-determined future performance levels and a month to month plan for improvement. It also provides a vision for the future to align each workgroup, operation and function.
- e. *weekly one-hour continuous improvement meeting*: Each intact workgroup requires a weekly problem-solving, process improvement meeting. The group needs time to implement their improvements / 5S and solve problems.
- f. *short-interval leadership*: The process whereby a workgroup's leader visits each workgroup member several times a day to see how things are and collect critical metric data and / or provide encouragement.
- g. *midshift supervisor / area lead coordination meeting*: Conduct meeting in front of a PVD for 15-30 minutes

About Kaufman Global

Kaufman Global is a proven implementation partner that focuses on accelerating performance. For 20 years we have worked with clients around the world to drive enterprise-wide change initiatives and cultural transformations. Leveraging Lean, Six Sigma and proprietary change management techniques, Kaufman Global delivers structured implementation and transformation projects that enable sustainable operational and financial results.

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