



Lean

MANUFACTURING SOLUTIONS PARTNERSHIP INC.

11212 Nautical Drive, Knoxville, TN 37934 PHONE: 865.776.9159 FAX: 865.588.1814

LMSPI Case Study #1

Client: A manufacturer of copper tubing components

Annual Sales: Approx. \$7mio per year

Processes: Bending, Punching, Drilling, End Forming, Brazing, and Leak Testing

| | | | |
|-----------------|------------------|----------------|-----------|
| Savings: | Target | Current | |
| | Labor | \$382k/yr | \$568k/yr |
| | Inventory | \$13k/yr | \$13k/yr |

Costs: LMSPI Fees: \$145k

ROI: 400%

Lean Methodologies Implemented:

- 5S
- Cellular Manufacturing
- Sequential Pull Systems
- Replenishment Pull Systems
- Standardized Work

Client Quote:

"LMSPI provided us with a very effective hands-on approach for converting our plant to flow. We have a small plant and don't have a lot of resources. They tailored their change process to fit our needs time and again. The results are dramatic. In just a few weeks we changed from chaos to a much more organized plant where the product flow is visual and obvious to all employees."

Joe Eaton
Director of Operations, North America

"Since partnering with LMSPI we have experienced marked improvements in productivity, quality, and overall employee morale. Most consultant firms we have contacted in the past have suggested a solution with little or no input from the people that truly know the process (the front-line employees), or they have suggested a system that accommodates a lot, but not all of our product line. LMSPI took the time to dig into the process, understand it, and get feedback on proposed changes. They did not come in with a "canned" system, but designed and implemented a production system that fit our needs. The end result is a 95% reduction in work in process, and a visual plant that flows based on customer pulls."

Matt Hoover
General Manager

"LMSPI doesn't have typical engineers – and that's a compliment!"

Bobby Street
Operations Manager

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LMSPI Case Study #2

Client: A manufacturer of utility meters

Annual Sales: Approx. \$27mio per year

Processes: Machining, Painting, Coil Winding, Molding, Assembly/Test

| | | | |
|-----------------|-----------|---------------|----------------|
| Savings: | | Target | Current |
| | Labor | \$744k/yr | \$720k/yr |
| | Inventory | \$18k/yr | \$6k/yr |

| | | |
|---------------|----------------------|--------------|
| Costs: | LMSPI Fees: | \$95k |
| | <u>Client Costs:</u> | <u>\$80k</u> |
| | Total: | \$275k |

ROI: 264%

Lean Methodologies Implemented:

- Cellular Manufacturing
- Sequential Pull Systems
- Replenishment Pull Systems
- Standardized Work

Client Quotes:

"Working with LMSPI has changed my opinion of working with consultants. Over the years, consultants would tell us how much money they could save the organization. When the time came to identify and implement solutions to achieve these cost savings, the consultants had misunderstood our manufacturing processes or were not available to work with our Engineers to develop solutions.

The difference with LMSPI is that they became integrated into our resources and manufacturing processes. LMSPI worked with our Engineers to develop the cost saving opportunity models. LMSPI facilitated training for our cross functional lean manufacturing teams. They were actively involved with the data collection, solution proposal, and implementation of solutions. LMSPI established daily communication with upper management on progress of each project. With the team effort from LMSPI, we achieved the cost savings and completed all projects on time."

Donna T. Alexander
Vice President, Manufacturing

"Our overall experience with LMSPI is very good and we will continue to work together with them now even on an international level (North and South America). The main difference between LMSPI and other companies that are offering similar services is that LMSPI becomes part of the company for as long as required in order to get the required results. LMSPI does not act as an external consultant, just generating reports and leaving the organization trying to implement the suggestions. LMSPI takes an active role in the evaluation and implementation of all changes within the facility. Their approach is very 'hands-on' and they do whatever has to be done in order to get the required results. LMSPI has a huge experience not only in the theoretical field but more important in the area of implementation. LMSPI will teach and educate all involved employees in order to ensure that the organization gets the deeper understanding on why these changes make sense and why there are no alternatives. The members of the LMSPI Team are able to communicate very effectively and efficiently with all levels within the organization."

Roman Thomassin
Executive Vice President and COO

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LMSPI Case Study #3

Client: A manufacturer of custom thermoplastic extrusion

Annual Sales: Approx. \$24mio per year

Processes: Mixing, Extrusion, Punching, Cutting, Thermal Welding

| | | | |
|-----------------|---------------|---------------|----------------|
| Savings: | | Target | Current |
| | Profitability | \$1M/yr | \$1.94M/yr |
| | Inventory | \$50k/yr | \$60k/yr |

Costs: LMSPI Fees: \$68k
Client Costs: \$10k
 Total: \$78k

ROI: 2564%

- Lean Methodologies Implemented:**
- Hoshin Kanri
 - 5S
 - TPM
 - Continuous Improvement Teams
 - DFM

Client Quotes:

"After making very necessary and obvious cuts in excessive wastes and overheads in prior months, we needed a true culture change in the way we operated the business in order to turn around the operating weaknesses and financial performance. LMSPI was a true catalyst and brought along a host of tools, experiences, ideas, and a structured process to involve everyone in the organization in the necessary turn around. It is very refreshing to see the true passion LMSPI shows for improving manufacturing not only at Vinylex but also in East Tennessee and the US. Your confidence, presentation skills, and knowledge of subjects are outstanding. I am anxious and excited to see the continued benefits and positive results LMSPI's guidance, leadership, training, and development will undoubtedly have on our entire organization."

Sam Reynolds
President

"LMSPI has truly partnered with us to help us achieve successes above and beyond the initial expectations. Mike works well with all levels of the organization. The results have been successful from the Culture Training received by our leadership team to the Project Teams largely comprised of operators. In every project we have undertaken, LMSPI has brought a World Class Approach to addressing the issue and customized it to our needs so that we have the opportunity to make it an effective approach in our organization. LMSPI continues to partner with us in key areas of our business."

Mike Mitchell
Plant Manager

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LMSPI Case Study #4

Client: A manufacturer of nuclear pipe hangers

Annual Sales: Approx. \$20mio this year (\$36mio forecast for 2007)

Processes: Cutting, Bending, Machining, Welding, Painting, Assembly and Test

| | | | |
|-----------------|-------|---------------|----------------|
| Savings: | | Target | Current |
| | Labor | \$2000k/yr | \$2000k/yr |

| | | |
|---------------|----------------------|--------------|
| Costs: | LMSPI Fees: | \$186k |
| | <u>Client Costs:</u> | <u>\$30k</u> |
| | Total: | \$128k |

2006 ROI: 1075%

Lean Methodologies Implemented:

- Hoshin Kanri
- 5S
- Continuous Improvement Teams
- Standard Work
- Visual Flow Systems

Client Quote:

"We are poised for growth of over 50% in 2007. I am now extremely confident that we will be successful in meeting the market demands as well as the financial expectations for 2007 due to the partnership we have with LMSPI. We have been utilizing LMSPI for six months now and as part of our management team they have brought a wealth of knowledge, practical experience, and a passion for our success. All personnel of LMSPI are dedicated professionals that provide a high level of expertise. Their "hands on" approach to the business and manufacturing processes is something which I have not experienced before with other consulting groups and therefore we have developed a "true" partnership with LMSPI. Through Hoshin Kanri we now have a well developed, defined, and executable plan to absorb the growth of 2007. Without LMSPI and Hoshin Kanri, we would not be able to properly absorb such tremendous growth. We are now confident in our ability to be successful in 2007 and the foundation will be set for success for years to come."

Robert Beldyk
General Manager

"What I appreciate most about working with LMSPI is the "partnership". Unlike all other consultants I have worked with in the past there is a true alliance with one's team; cooperation to achieve a common goal. They not only offer advice, but truly step inside that box with us and encourage that extra effort from those participating. It is exciting to see the changes we have made in such a short period of time and I look forward to a continued "partnership" as we strive together to further improve our operations."

Johnny L. Bible
Manufacturing Manager

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LMSPI Case Study #5

| | | | |
|--|--|---------------|----------------|
| Client: | A manufacturer of turbochargers | | |
| Annual Sales: | Approx. \$160mio per year | | |
| Processes: | Machining, Welding, Heat Treating, Assembly/Test | | |
| Savings: | | Target | Current |
| | Labor | \$980k/yr | \$1300k/yr |
| Costs: | LMSPI Fees: \$134k | | |
| ROI: | 970% | | |
| Lean Methodologies Implemented: | <ul style="list-style-type: none">- Cellular Manufacturing- 5S- Replenishment Pull Systems- Standardized Work | | |

Client Quotes:

"LMSPI was engaged to set up work cells in one our machining areas, as well as conduct executive training, coaching and various workshops such as 5S. All of this was done to plan, on schedule and very professionally. That cell has enjoyed record performance and, since 02JAN, we have broken 3 all-time production records. LMSPI worked well with both the senior people here as well as the floor associates. We would judge this a success."

Frank Gastrich
Plant Manager

"LMSPI partnered with us to help us achieve successes above and beyond the initial expectations. They worked well with all levels of our organization. The results have been a great success, from the Training received by our leadership team on working together to success to the QAAT Project Team largely comprised of our operators and a project coordinator. In every lean aspect we have undertaken, LMSPI has brought a unique approach to addressing our issue and customized the solution to our needs so that we have the opportunity to complete a sustainable system within our organization."

Van Sealey
Operations Manager

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