
WHAT DOES IT MEAN TO BE LEAN?

Lean is about being able to do more with less and get more with less. Lean is about eliminating waste and producing what your customers want when they want it.

Everywhere you look represents an opportunity - a place to improve throughput, eliminate set-up steps, reduce inventory, speed up delivery, improve cash flow, and become more efficient.

HERE ARE SOME AREAS TO LOOK AT:

- ▶ Overproduction
- ▶ Inventory
- ▶ Defects
- ▶ Processing
- ▶ Transportation
- ▶ Waiting
- ▶ Motion
- ▶ Underutilized people

IF WASTE EXISTS IN YOUR COMPANY, WE'LL FIND IT.

We'll also show you how to reduce it, or better yet, eliminate it. Plus, we should warn you right now - we're relentless and we expect you to be the same way. Every dollar that you're throwing away today is being multiplied on your bottom line.

Our lean program is not an experiment. It is not a trial and error exercise.

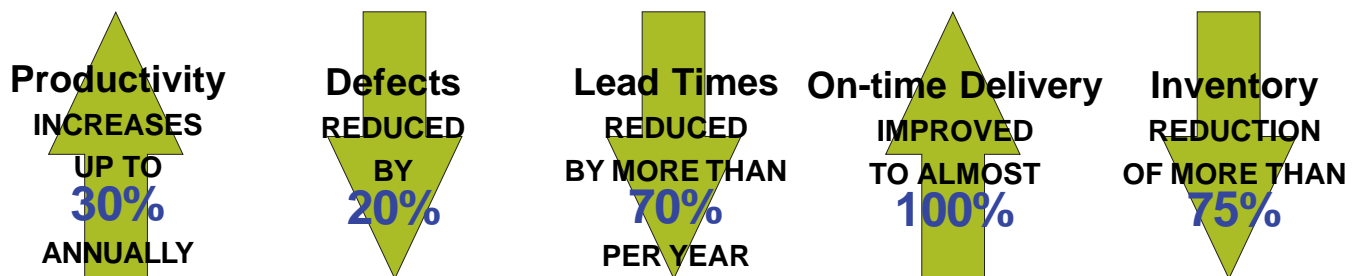
IT IS A PROVEN SYSTEM THAT LEADS TO:

- ▶ Improved quality
- ▶ Greater throughput
- ▶ Reduced costs
- ▶ Better cash flow
- ▶ Improved employee morale
- ▶ Faster speed to market
- ▶ Increased sales
- ▶ Greater productivity
- ▶ Higher profits

WHAT WILL IT MEAN FOR YOU TO BE LEAN?

The longer you stick with Lean, the bigger the benefits. While you will experience dramatic effects early on, they are just a hint of how great it can be.

WHAT KINDS OF RESULTS DO OUR CLIENTS HAVE TO SHOW FOR THEIR WORK?

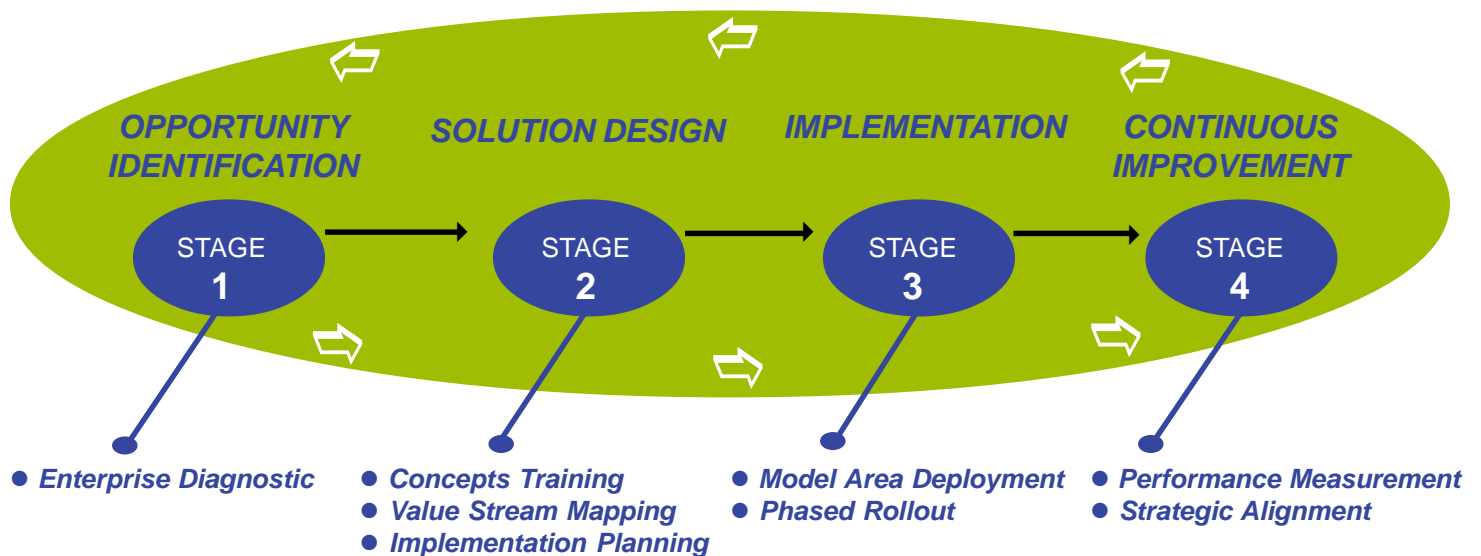


**LEAN IS NOT A DESTINATION, IT IS A JOURNEY.
THE SOONER YOU GET STARTED,
THE SOONER YOU BEGIN TO SEE REWARDS.**

How We'll Take You Through Lean

LEAN PATHWAYS TO SUCCESS

There's more than one way to get where you want to be. Our Lean Enterprise tools and services are not only proven, they're flexible. We'll look at your particular journey in four stages:



Stage 1 - Opportunity Identification

How can Lean optimize your operation? We'll assess how your plant gets things done, work with you to identify a baseline, and then identify where Lean can have an impact. This gives us a solid list of objectives.

Stage 2 - Solution Design

This is where we create the blueprint that will lead to a new and improved operation. We'll train your people to "think Lean," so that everyone is focused on the same goals. We'll develop a set of "maps," providing the most direct route to where you want to be.

Stage 3 - Implementation

First, we'll deploy a model line to showcase the success of Lean principles. From there, we'll move to a phased rollout. This is a multi-step process that involves additional training, mentoring, facilitation, knowledge transfer, and joint implementation with your company's team.

Stage 4 - Continuous Improvement

Lean isn't something you do and then forget about. It's an ongoing journey where the rewards get greater and greater. As you meet your business objectives and improve your performance, it's important to keep the momentum going. Sure, you don't want to slip back, but even better, you want to realize even more benefits. It's an area in which we excel. We can help you continually enhance your competitive edge, measure performance, and continually improve.

IS A LEAN OPPORTUNITY KNOCKING AT YOUR DOOR?

How can Lean optimize your operation?

- Are you manufacturing more, earlier and faster than required by your customer?
- Does production stop when an employee is away or parts are out of stock?
- Are you missing on-time delivery?
- Are batch sizes much larger than consumption rates?
- Do you have lots of rework?

IF YOU ANSWERED YES,
THEN YOUR SOLUTION IS LEAN

Benefits

- Discover root causes
- Identify potential improvements
- No out-of-pocket cost

Successes

Countless manufacturing companies have taken advantage of this assessment, and have started down the pathway to success.

Approach

We'll assess how well your plant is running and work with you to identify where Lean can have an impact on your business.

Our manufacturing specialist will conduct a short 2-3 hour assessment that will provide a preliminary evaluation of the opportunities for you to benefit from implementing lean manufacturing concepts and principles. We will look at processes including manufacturing lead time, WIP, distance traveled, square footage utilization, productivity, downtime, changeover/set-up, standardized work and other general observations. The information is then compared to "general rules" used in industry to identify opportunities.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

MEET DEMAND WHILE INCREASING PRODUCTIVITY AND CAPACITY

What is a Lean Enterprise?

A Lean Enterprise produces more with existing resources by eliminating non-value added activities. Manufacturers are facing increased worldwide competition and the stakes are high. The winners in this competition work to eliminate overproduction caused by traditional scheduling systems and only make what customers want when they want it. Lean establishes a systematic approach to eliminating these wastes and creating flow throughout the whole company. It also helps you develop and implement a long-term plan to streamline your operations for success.

Benefits of Lean

- Reduce cycle time
- Reduce inventory
- Reduce Work-in Process (WIP)
- Reduce costs
- Increase capacity
- Improve lead times
- Increase sales & profits
- Increase productivity
- Improve quality

Successes

A sheet metal fabrication shop implemented Lean techniques and saw a 90% reduction in manufacturing time, decreasing the average process time from two weeks to one day. Productivity increased by 30%, saving \$125,000 in labor, while floor space used was reduced by 40% and WIP was virtually eliminated.

Concepts Training

*One-Day Workshop:
Principles of Lean Manufacturing with Live Simulation*

This eight-hour workshop combines a comprehensive classroom presentation with hands-on simulation of a production facility. In this

workshop, we introduce the basic concepts of lean manufacturing and demonstrate the tools and methodology necessary to implement “lean”.

The classroom presentation is an interactive overview of lean manufacturing, introducing concepts and methodologies for implementation in a simulated production facility. You will act as production workers, applying the lean tools to your individual workspaces as well as across the entire product line. This train-do technique over four “shifts” illustrates cause and effect relationships for each of the lean tools presented. We will review methodology and lessons learned from previous shifts, deciding what and how to implement while working with realistic constraints such as available resources, cash flow and resistance to change.

You will gain an understanding of the eight wastes in manufacturing and learn how to improve productivity by applying standard work, visual controls, set-up reduction, batch size reduction, point-of-use storage, quality at the source, pull systems and more.

We also offer this workshop publicly. It is held at various locations throughout the year. Please visit our website at www.njmep.org or call 800.MEP.4MFG for workshop dates and locations. Registration is required due to limited seating.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

STOP SEARCHING FOR THE WRONG PROBLEM - LEARN TO SEE WHERE VALUE TRULY IS!

What is Value Stream Mapping?

Value Stream Mapping is a tool used to create a material and information flow map of a product or process. This powerful tool allows companies to map the flow of products in the back door as raw material, through all manufacturing process steps, and off the loading dock as a finished product. This is the Value Stream. You begin the journey with the current state map - it shows you where you are. Then, you plan your Lean journey with a future state map - it shows you where you're going and how you're going to get there. Based on your Value Stream Map, you can streamline work processes, thereby cutting lead times and reducing operating costs.

Benefits of Value Stream Mapping

- “See the flow” of your value stream and wastes in the flow
- View all products from a system perspective
- Draw both material and information flows of your value stream
- Draw a blueprint for Lean transformation - the Future State Map
- Prioritize activities needed to achieve the Future State

Successes

An industrial machinery and equipment company used Value Stream Mapping to plan their Lean transformation. Their Lean initiative so far has managed to reduce operating overhead costs 25%, increase throughput 50%, and save a projected \$32,000 in paperwork each year - and much, much more.

A fabricated metals products company implemented Lean and Value Stream Mapping and was quickly able to identify and eliminate wastes that have already reduced scheduling, purchasing, and supervisory time. They expect even more results as they implement Lean company-wide.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you a plan for implementation, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

ACCELERATE PRODUCT & SERVICE FLOW - ACHIEVE AND SUSTAIN CLEAN, SAFE, AND ORGANIZED WORKPLACES

What is the 5S System?

The 5S System is a series of activities designed to improve workplace organization and standardization. These activities, all of which begin with the letter S, include:

- Sort through all items and remove unneeded items
- Set in Order remaining items, set limits, create temporary location indicators
- Shine or clean everything and use cleaning as inspection
- Standardize the first 3 S's by implementing visual displays and controls
- Sustain the gains through self-discipline, training, communication, and total employee involvement

Benefits

- Improve quality
- Achieve work standardization
- Decrease changeover time
- Improve safety
- Reduce storage costs
- Reduce cycle time
- Reduce machine down time
- Boost employee morale as well as work environment

Successes

Through the implementation of visual controls, to improve workplace organization, a metal fabrication company was able to increase inventory turns 67%, reduce inventory by 35%, and increase on-time shipping to 99%.

A truck cover manufacturer standardized its housekeeping efforts, inventory control methods, and business practices. This resulted in a 50% reduction in inventory costs and a 67% increase in sales.

After the implementation of the 5S System by a window manufacturing company, productivity was increased by 35% and overtime was reduced by 45%.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

INCREASE FLEXIBILITY - REDUCE SET-UP TIMES AND IMPROVE PRODUCTION FLOW

What is Setup Reduction?

Setup Reduction builds on the principles of the Single Minute Exchange of Dies (SMED) system, developed by Shigeo Shingo, to dramatically reduce or eliminate changeover time. The four-step Changeover Improvement Process is used to help companies design no/low cost solutions to reduce changeover time. This, in turn allows the firm to meet customer demands for high-quality, low-cost products, delivered quickly and without the expense of excess inventory.

Benefits

- Respond to customer needs and schedules with more flexibility
- Improve on-time delivery
- Decrease costs due to excess inventory
- Increase line and machine capacity levels
- Increase changeover accuracy
- Reduces start-up defects

Successes

By empowering operators to reduce make-ready time and increase run speed, a printing and publishing company decreased setup time by 30%.

A transportation equipment manufacturer implemented Total Productive Maintenance, 5S, and Cellular Flow Manufacturing approaches to its processes. As a result, setup time fell from 480 hours to 0 hours.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

SLASH LEAD TIMES AND INCREASE PRODUCTIVITY BY IMPROVING PRODUCT FLOW

What is Cellular/Flow Manufacturing?

When processes are balanced, the product flows continuously and customer demands are easily met. Cellular/Flow Manufacturing is linking of manual and machine operations into the most efficient combination of resources to maximize value-added content while minimizing waste. The most efficient combination implies the concept of process balancing. Only in a balanced process will the product continually flow. As a result, parts movement is minimized, wait time between operations is reduced, inventory is reduced, and productivity increases.

Benefits

- Maximize value added by each worker
- Minimize part movement and inventory
- Reduce lead times, cycle times and waiting times
- Increase productivity and quality performance
- Free up floor space
- Improve efficiency of cross-training workers
- Increase communication
- Increase flexibility

Successes

Through the implementation of an U-shaped system design, a precision machine shop increased production flow by 50%, increased capacity by 15%, developed a new product line, and maintained the workforce at full capacity.

Manufacturing cells were created in a small metal machining firm that resulted in a 65% reduction in WIP, improved production quality, and reduced material transport time from 45 minutes to just 5 minutes.

A cut and sew operation implemented a work cell that led to increased product volume, a reduction in finished goods inventory shelving from 800 to 32 linear feet, and a 32% increase in profits.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

IMPROVE YOUR CASH FLOW, THROUGHPUT AND COMPETITIVE POSITION**What are Pull Systems/Kanban?**

Pull Systems/Kanban control the flow of resources in a production process by replacing only what has been consumed. They are customer order-driven production schedules based on actual demand and consumption rather than forecasting.

Implementing Pull Systems can help you eliminate waste in handling, storing, and getting your product to the customer.

Benefits

- Reduce overall inventory
- Reduce Work-In-Process
- Reduce order turnaround time
- Increase customer satisfaction
- Improve cash flow

Successes

A maker of fine table linens was able to slash its average order turnaround time from three weeks to three days using a Pull System. The changes eliminated bottlenecks in production and increased responsiveness to customer needs.

A manufacturer of high-quality packaging machinery implemented a multi-faceted Lean transformation. A Pull System was used to smooth the flow of Work-In-Process (WIP). The changes decreased WIP by 62%, and dramatically increased the number of orders completed each day.

Pull Systems/Kanban - and other lean techniques - were implemented by a manufacturer of custom fiberglass and vacuum form products. These changes increased productivity by 20%, reduced inventory by 53%, decreased lead-time by 63%, and far exceeded their targeted goals.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

BOOST CAPACITY AND IMPROVE QUALITY BY INCREASING YOUR EQUIPMENT'S LIFE EXPECTANCY

What is Total Productive Maintenance (TPM)?

Total Productive Maintenance (TPM) is a process to maximize the productivity of your equipment for its entire life. TPM fosters an environment where improvement efforts in Safety, Quality, Delivery, Cost and Creativity are encouraged, through the participation of all employees.

The goal of TPM is to maximize your Overall Equipment Effectiveness (OEE) and to reduce equipment downtime to zero while improving quality and capacity.

Benefits

Typical manufacturing operations have experienced improvements in the following areas in a relatively short period of time (6-12 months) through the implementation of TPM:

- Overall Equipment Effectiveness (capacity) improvement of 25-65%
- Quality improvement of 25-50%
- Maintenance expenditure reductions of 10-50%
- Percent Planned vs. Unplanned maintenance increase of 10-60%

Successes

A tool manufacturer implemented the TPM process to improve the productivity of their equipment. They were implementing lean, attempting to flow their parts, but were having difficulty because of the poor uptime (capacity) of their equipment. Within 18 months they saw a 15% increase in equipment productivity.

What they were not expecting was a \$1,200,000 reduction in their maintenance budget (repair parts), including \$50,000 reduction in oil usage (reduced leaks), \$56,000 reduction in water usage (leaks and modifications), and \$57,000 reduction in contract maintenance.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

APPLYING LEAN TO THE OTHER SIDE OF THE WALL!

What is Administrative Lean?

Lean is defined as the efficiency in which customer interest is translated into customer satisfaction.

We measure efficiency in terms of lead time, productivity, quality and inventory. Lean requires a relentless pursuit to drive “Non-Value-Added” waste from the overall business. The fact is that most organizations have a great deal of administrative waste within their business systems.

Redesigning key business processes eliminates significant waste, thereby providing tremendous benefits to the organization. Therefore, it is imperative that companies apply Lean concepts to all processes - production as well as administrative, including Order Entry, Product Design, Purchasing & Inventory Management, Scheduling & Production Control, Cost Accounting, and General Accounting (Invoicing & Billing).

Benefits

- Increase Flexibility and Responsiveness
- Reduce Lead Time
- Reduce errors and extra processing
- Improve utilization of personnel
- Reduce transactions
- Simplify processes
- Reduce Inventory

Successes

A configure-to-order cabinetry company implemented a team based pre-production process including Customer Service, Technical Support, Materials, and Planning. The changes reduced overall lead time by 5 days (7 to 2), improved flexibility and responsiveness, and improved order accuracy improved 40% (60% to 85%).

A window manufacturer implemented a Pull/Kanban System with its key suppliers, and improved supplier quality and service, realizing a \$1M first year savings, and significantly reducing “stock outs”.

Approach

NJMEP offers customized services that employ a “train-do” approach. We will teach you our proven methodologies, and work with you to apply them in a specific area of your business. This approach offers you an immediate impact to your bottom-line, and enables you to duplicate these successes over and over and over again throughout your entire organization.

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.

INVOLVE YOUR WORKFORCE IN THE PURSUIT OF ELIMINATING WASTES!

What is a Kaizen Blitz?

A Kaizen Blitz is an intensive and focused approach to Process Improvement. Kaizen means “continuous improvement” and Blitz means “lightening fast.”

The continuous improvement methodology combines Lean Manufacturing Tools such as the 5S’s of Workplace Organization and Standardization, Work Cells, Pull/Kanban, Set-up Reduction, and Line Balancing. Each tool incorporates team empowerment, brainstorming, and problem solving to rapidly make improvements to a specific product or portions of your processes.

Why Do a Kaizen Blitz?

The Kaizen Event methodology has been used extensively for improving the organization of work in factories and actual methods used to manufacture products. The results are real-time with implementation occurring within a one-week format. Not only will you obtain immediate improvements to your process - you will also develop a list of other improvement opportunities that your staff can investigate and implement after the Kaizen Event. The Kaizen Event will provide your company with immediate tangible results and motivation for ongoing continuous improvement within your company.

Benefits

- Immediate results
- Involvement of the workforce
- Visual, action orientation
- Can use ongoing, once learned concepts
- Fosters communications
- Creative vs. capital investments
- Reduce work in process
- People think from “business” perspective
- Implementation smooth due to team concept

To Learn More

Visit our web site, www.njmep.org, to learn more about NJMEP and to read additional success stories. Or call NJMEP at 1-800-MEP-4MFG to schedule a visit by one of our experienced manufacturing specialists to discuss how your company can get started on the pathway to success.