Tools for Lean

5S Visual Workplace

5S Visual Workplace creates a work environment that is clean, well organized, and efficient. It provides your organization with a rapid, visible achievement while preparing your workforce for other advanced improvement efforts.

Implementation: In general, we teach and implement 5S in a few target areas over a one to three week period while training your internal facilitator(s) to lead the program thereafter. Implementation is best achieved through a combination of class time and hands-on efforts on the shop floor.

Summary: The 5S Visual Workplace is a great way to begin any improvement initiatives.

Standardized Work Instructions

Standardized Work Instructions (SWI's) are specific instructions that allow processes to be completed in a consistent, timely, and repeatable manner. By implementing SWI's, employees will increase production, improve quality, and enjoy a safer, predictable working environment.

Implementation: SWI's are best facilitated through minimal classroom training and maximized hands-on application of these proven techniques. Stopwatches are not required for a successful implementation, but employee/operator participation is critical.

Summary: Creating SWI's is a critical part of improving processes and achieving Lean goals. This step should be taken early in any improvement effort, even if significant process changes follow.

Value Stream Mapping

Value Stream Mapping is used to illustrate the flow and relationship between work processes. A key component of VSM is differentiating value adding activities from non-value adding activities.

Reducing or eliminating non-value adding activities is of paramount importance and a principle goal of Lean Manufacturing. Upon careful and detailed examination of your processes through VSM, it soon becomes obvious where improvement opportunities lie.

Implementation: Utilizing the skills and experience of your area employees and operators is essential. We engage in a powerful discovery process that exposes hidden non-value adding activities. Once these items are known, the stage is set for significant progress toward eliminating them. Going through the Value Stream Mapping process may be quick and relatively easy for simple operations, or it may take much more time with considerable difficulty when examining complex operations.

Summary: Mapping your processes and where value and non-value adding activities occur will yield a baseline of information from which tremendous improvement opportunities can be realized.

Total Productive Maintenance (TPM)

TPM is a powerful program for planning and achieving minimal machine downtime. Equipment and tools are literally put on “proactive” maintenance schedules to keep them running efficiently and with greatly reduced downtime. Machine operators take far greater responsibility for their machines upkeep. Maintenance technicians are liberated from mundane, routine maintenance, enabling them to focus on urgent repairs and proactive maintenance activities. A solid TPM program allows you to plan your downtime and keep breakdowns to a minimum.

Implementation: We have developed an aggressive approach to teaching, implementing, and preparing your associates to take over the TPM program as quickly as possible. Within 2 to 3 weeks of focused efforts and coaching, we create your internal “TPM Champions” capable of leading the program for years to come.

Summary: TPM is an outstanding program that drives improvement initiatives and facilitates many other Lean activities. Without a strong TPM program, becoming truly Lean would be a difficult if not impossible task in an environment heavily dependent on machinery. Buy-in at the shop floor level is generally quite high as TPM is an exciting undertaking!

Kaizen Blitz Events

Kaizen Blitz Events (also known as “Kaizen Events”) are highly focused improvement events designed to address and resolve important business issues and/or constraints.

Implementation: Using a team of anywhere from 4 to 12 employees, we critically evaluate and scrutinize the area or issues to discover where opportunities for improvement exist. We find real solutions and begin implementing the needed changes immediately.

This is a team effort best engaged in by associates from the area of focus, supporting areas, and internal customers. By the end of each Kaizen Event, substantial improvements have been made, plans and responsibilities for longer range improvements are assigned, and bottom-line results are expected.

Kaizen Events function best when focused on “real constraints” rather than general improvements. Achieving the best results through Kaizen Events requires highly skilled facilitators. Though we train your designated staff to lead the events in the future, facilitators necessarily require substantial understanding and experience to achieve the best possible results.

Summary: Kaizen Blitz events correct constraining factors in a fast, efficient, and powerful way. When these efforts are focused on “real constraints” they usually have immediate and long-term major effects on profitability, safety, quality, and throughput.

Error and Mistake Proofing

Error and Mistake-Proofing (also known as “Poka Yoke”) is one of the powerful Lean tools used to ensure products and processes are completed correctly the first time.

Implementation: Error and Mistake Proofing can be focused on a single machine or process using the talents of only a few people, or it can become a broad undertaking, addressing many issues simultaneously.

The goal is to reduce scrap, rework, and eliminate production losses due to inconsistent processes, methods, materials, etc. Improved quality and cycle-times are nearly always achieved.

Depending on the level of implementation needed, we can make experts out of your staff relatively quickly and leave them competent to effect more scrap/rework improvements across the organization.

Summary: If you are experiencing high levels of scrap and rework, Error and Mistake Proofing provides pinpoint focused tools that will help you quickly remedy these problems and dramatically reduce production losses.

Self-Directed Work Teams

Through the natural evolution of the Lean work environment, associates begin to work more as interdependent teams in order to accomplish area and company goals. When this begins, it is time to support the transition to a self-directed workforce, capable of managing their own areas with greatly reduced supervision and oversight. Self-Directed Work Teams, to a large degree, voluntarily interact with internal customers and suppliers to improve area effectiveness and effectively deal with area issues.

Implementation: Once you’re ready to begin formalizing Self-Directed Work Teams, we take eligible teams through a series of team-building exercises geared toward increasing trust, cooperation, communication, and responsibility for self and others. This is a truly incredible and powerful process that results in personal and group change to allow for a very rapid, but consistent evolution of the team.

Teams quickly learn to function at a basic level, determining simple things like who reorders consumables, how to adjust schedules, and resolving minor area issues. Later, team development may include providing input on hiring, discipline, advanced area troubleshooting, and production scheduling (within the area). Effective self-directed work teams yield highly competent and capable employees with a genuine investment in area and company success.

At TPS we find no undertaking more satisfying then helping empower individuals and teams to effectively contribute to their company. In such an atmosphere, everyone enjoys a more rewarding work environment. This is a process that takes time and careful attention to many nuances. We facilitate the entire process while creating co-facilitators for long-term training and implementation.

Summary: Creating Self-Directed Work Teams that truly function is an advanced undertaking that yields outstanding results when properly implemented and supported. Such teams earn the trust and respect of management to deal with increasing individual competence and team responsibilities. These efforts benefit the team, an area, and the entire company. The best companies in the world attribute their success to maximizing the talents of their human resources by creating positive production environments driven by advanced teamwork.

Mixed/Level-Loaded Production

Also known as “Heijunka,” Mixed/Level-Loaded Production provides a system for advanced scheduling of production activities. This tool allows you to reduce inventory, decrease lead-times, and produce the variety of products your customers want, as they want them. Many Lean tools should already be in place to properly use and maintain a Heijunka scheduling system.

Implementation: Once your production mechanism is prepared to integrate this tool through consistent use of KanBans, Overall Equipment Effectiveness (OEE), Standardized Work Instructions, Error and Mistake-Proofing, and any other facility specific improvements, then it is time to begin introducing Heijunka. We help you engage in a process that allows for a quick, yet powerful implementation of the techniques, while respecting immediate needs for throughput and customer agreements.

Once principles and practices are thoroughly established, we help you generalize the application of this tool across product lines, factories, and the entire enterprise. The time required to implement depends on the complexity of your needs, but is generally fairly easy to begin, with extended efforts required of your staff over a longer time-frame.

Summary: World Class companies lead the way by setting on-time delivery standards through Mixed/Level-Loaded Production Scheduling. This is not the first step to take, but soon becomes an important part of your transition to Lean.

Setup Reduction (S.M.E.D.)

Single Minute Exchange of Die (also known as S.M.E.D.), is the Lean tool used to create very fast changeovers and setups that greatly reduce machine downtime and increase throughput. It is common to reduce machine changeover times from hours to less then ten minutes. While that may sound too good to be true, we’ve seen it happen time and time again.

Implementation: S.M.E.D. efforts are best implemented with the operators or changeover teams assigned to a specific machine or set of machines. We work closely with your staff to teach them the many powerful techniques to reduce setup, implement as many improvements as immediately possible, and rehearse the new setup procedures. A great setup or changeover is highly choreographed and has a dramatic effect on downtime.

Since there are many outstanding tools available to reduce setups and changeovers, we work closely with your teams until they are sufficiently prepared to carry their efforts forward and professionally apply the many techniques on their own.

Summary: S.M.E.D. is a powerful tool for reducing downtime due to setups and changeovers. Results are almost always outstanding and inspiring.

Inventory and Lead-time Reduction

Reducing inventory will decrease your lead-time. Excess inventory inherently presents a great deal of waste, not to mention quality issues (spoilage), storage requirements, investment of funds, limiting cash flow, among others.

Implementation: When beginning this process we must first know the status of inventory levels. We'll assist you in performing a streamlined inventory audit, establish a baseline, then categorize inventory by special criteria. Next, new acceptable inventory levels are established as goals.

Careful consideration of cost, replenishment lead-times, and space requirements play an important role in determining reduced inventory levels. The order process is often changed and more inventory is repositioned at "points of use."

Tracking and adjusting inventory to meet customer demand and buffer business cycles is critical. Training your staff is accomplished by actually performing this process with TPS experts until they are fully prepared to continue the efforts on their own.

Summary: If you need immediate cash flow and improved on-time delivery, reducing inventory will generate a terrific windfall. We have enabled companies to fully fund all aspects of their transition to Lean simply by helping them responsibly reduce inventory.

Lean Visioning

Determining where you want to go is the first step in getting there. Lean requires a journey best taken through learning, planning, and doing. Lean Visioning assists Senior Management create a "Lean Road Map" with which they may guide and direct the company to greatness.

Implementation: Lean Visioning sessions are held with Senior Management to guarantee at least a basic understanding of Lean Manufacturing principles and expected results. We'll help you determine targets for change, create an implementation plan, establish goals, and lead the efforts. Later, middle management, supervisors and leads are taught the basics of Lean and their roles in implementation are assigned.

Once the management support structure is in place, all employees are instructed in the basics of Lean and presented with the "Lean Vision" of Senior Management. Implementation plans are discussed, along with the allocation of resources to effect the changes. Expectations for success are then established.

Lean is always more successful when driven from the top down. The time required to create the Lean Vision, instruct, and generate excitement about the efforts is determined by many factors. The internal facilitator serves as a support during initial phases, and then becomes the trainer/facilitator during later sessions and for future employees.

Summary: If you are just exploring or beginning your transition to Lean, it is crucial you know where you are going. We at TPS do our very best to avoid and help you recover from "flavor of the day" syndrome (programs and efforts that come and go like the wind) by actually doing what we say we will and supporting management in doing the same. The proof is in the doing.

Constraint Management (TOC) "Theory of Constraints"

This tool addresses and helps to resolve the most important deterrent to increased throughput and productivity in your operation.

Implementation: We teach you about the tools of constraint management and how to locate the actual or "real" constraints holding back your operation. We then apply any and all techniques to resolve or reduce the negative impact your operation's constraints are having on throughput.

Using the talents of several constraint area experts, we will generally greatly relieve the "pain" felt in the constraining area to the point where the constraint may transfer to another area, machine, or process. This procedure is repeated long after initial efforts to resolve emerging constraints. Soon, your internal facilitators will become quite proficient at resolving constraints and increasing throughput.

Summary: Constraint Management efforts can immediately resolve extremely negative effects from machine, labor, and process inefficiencies, and have the ability to fund your entire transition to Lean through substantial increases in throughput.

2-Bin Auto-Replenishment System

2-Bin and other forms of Lean parts and supplies replenishment eliminate downtime due to parts shortages, making replenishment simple while creating a "self-evident" inventory.

Implementation: Coordinating with purchasing, the stockroom, suppliers, and the shop floor production areas, we help you create a seamless and self-perpetuating inventory that keeps a reduced amount of supplies at the point of use and makes reordering a simpler process.

Often, we will negotiate special arrangements with suppliers to guarantee proper inventory levels and maximize price breaks even if an increase in delivery frequency is required. Companies with thousands of part numbers and multiple storage locations may benefit from a simple barcoding process on small lots. This reduces reordering time by hours each day.

There are so many ways to make your inventory easier to use and reorder that we customize this process to best suit your needs. From the very beginning, we involve your

staff and empower them with much of the responsibility for creating your new system. Your inventory becomes “self-evident” since you can readily view the amount in stock without counting.

Summary: Inventory is relocated and positioned in an easy-to-use manner. With fewer locations to manage there is less of it and it is easily or automatically reordered.

Quality System Certification

Aligning your company with the highest quality standards and established certification systems will generate and retain business while creating a culture of World Class Quality.

Implementation: There are many quality systems established to meet the needs of the industries they serve. You likely know what systems are best for your industry. But if you’re not sure, we can help you choose and become certified in a system, earning many internal and external benefits. During this process, we help write quality manuals, procedures, establish standards, and act as liaisons with certifying agencies. Our efforts include helping your staff understand and promote your quality system.

Summary: Becoming certified in an established quality system will yield many benefits in nearly every industry.

KanBan Implementation

KanBans are “self-evident signals” that indicate what work is to be done and when.

Implementation: Many of the benefits of becoming Lean can be traced back to the implementation of KanBans. KanBans clearly identify needed work, reduce the number of defective parts produced, allow for job-sharing, give instant visual indicators of productivity and constraints, along with many other benefits.

We have developed an intuitive approach to helping you quickly establish KanBans and modify them to meet your changing needs. Ultimately, most KanBans evolve into what is known as “One Piece Flow” where parts are literally passed from one operation to the next, with no wait time between work stations.

With minimal investment, KanBan manufacturing systems enjoy many real benefits. We work with your staff from the beginning to establish proper KanBans throughout all operations.

Summary: KanBans reduce inventory and give clear indicators of current production status.