

## The Lean Enterprise System – <http://www.bes-llc.com/lean.htm>

Balanced Enterprise Solutions offers the following Lean Manufacturing Training for the workforce. BES can provide these during Lean implementation or as a refresher to organizations that want to get back on track with their lean implementation. Various methods of training, both in the classroom and in hands-on settings are used to reinforce the key principles of Lean Enterprise.

### **Lean manufacturing is a management philosophy focusing on reduction of the 7 Wastes:**

- Over-production
- Waiting time
- Transportation
- Over-processing
- Inventory
- Motion and Scrap

**By eliminating waste, quality is improved, production time is reduced, and cost is reduced. Lean "tools" include constant process analysis (Kaizen), "pull" production, and mistake-proofing.**

One crucial insight is that most costs are assigned when a product is designed. Often an engineer will specify familiar, safe materials and processes rather than inexpensive, efficient ones. This reduces project risk, that is, the cost to the engineer, while increasing financial risks, and decreasing profits. Good organizations develop and review checklists to review product designs.

### **BES Helps Facilitate Lean Enterprise by offering several effective training programs...**

- Lean Overview for Management and Work Force
- Value Stream Mapping Overview and Integration
- 5S Training
- Kaizen Training and Facilitation
- Eliminating Waste Through Lean Enterprise
- Organizational Development and Cellular Design
- Set-Up Reduction
- Six Sigma Implementation
- Process Mistake-Proofing (a.k.a. "Poka Yoke")

## **Roadmap to Lean – By Bill Neely**

### **Executive Summary**

This is a high level view of a process that can be used by a company to transition to a Lean Enterprise. At the core is the development of a Roadmap or plan for the implementation of Lean Enterprise. This Roadmap is a tool for guiding change within the company. The roles and accountabilities of the key players in the workforce and the leadership team are described. The Roadmap described below is not intended to be the detailed plan but rather the beginning for developing a company specific document that lives throughout the company's transformation to a lean enterprise.

### **Roadmap Development**

A roadmap for the company's lean implementation plan serves three primary purposes.

One is to allow a comprehensive review of the allocation of resources focused on a coordinated set of goals and objectives that tie to the company's strategy;

Second, it serves as a time phased plan to measure completion of key activities.

Finally, it presents an implied contract with those who have key accountability roles in the implementation.

The roadmap is a living plan that reflects the changing goals and priorities of the business and is owned by a key individual with access to the leadership team who hold themselves as well as the owner accountable for the execution of the plan. A periodic review of the plan involving key players serves to prevent surprises to those who are accountable for execution of the plan as well as the owners of the strategic direction of the company.

#### **Integrate the Roadmap with the Strategic Plan**

The lean roadmap can and should be an integral part of the multi-year strategic planning process and should mesh with the employment of valuable resources used to meet the objectives of the business. Typical strategic plan objectives include cost reduction, sales growth, strengthened personnel management, entry into new markets, better service to customers, improved procurement practices, and all of these are focused on creating a stronger and subsequently more profitable business. Implementation of a coordinated lean enterprise initiative will significantly aid a company as it moves toward achieving these objectives.

#### **Pick a Logical Beginning Point**

In much of the literature, the terminology used to refer to lean is "lean manufacturing" primarily because this is where most companies focus their efforts. Examples that describe the application of lean tools are nearly always production or manufacturing oriented. From a company's perspective the easiest and most logical place to begin the implementation process is with operations, even though lean clearly has a place in the administrative side of the business. The challenge with initiating lean is to prioritize the opportunities.

The first consideration when selecting target areas for implementation is to insure they offer a high probability of success. This serves to avoid early rejection of a process that has been proven in many companies across many diverse industries thus denying the company access to improvement many companies, possibly a competitor, have successfully implemented. Characteristics of a beginning project to improve performance in a process include visibility across the company, complexity of implementing change within the process, capability of the people who are involved in the day to day execution of the process, the ability to measure the results, and potential return to the business for improving the process. The selection of setup/changeover reduction in the compression department reflected consideration of these characteristics.

### **Move to Other Parts of the Business**

As the organization gains knowledge in the application of lean tools, additional and more challenging projects can be undertaken. This includes targeting some of the support processes that directly affect the ability of the business to meet customer needs and requirements. Some logical possibilities include the order entry process, improving supplier performance, streamlining quality data management, month end close by accounting, generation of reports using the ERP system, and generation of sales forecasts. The cumulative result of the implementation plan should support the strategic objectives of the company.

## **Make the Organization a Lean Enterprise**

As a company moves to the implementation of a lean enterprise, a natural response by its people is to view the process with skepticism. It could be rooted in a suspicion that the objective is to eliminate jobs or in some way make their workday more difficult. In many instances the basis for the peoples' concern is a natural resistance to a lack of understanding of what is to come or in another word, change. The leadership can reduce this resistance with effective communication about the challenges facing the company and the process of meeting those challenges. One of the major advantages of lean concepts is their simplicity and ease of explanation to the workforce. This is not a one time PowerPoint presentation, but rather a well thought out process of raising the knowledge level of the organization as a whole.

### **Create a Learning Organization**

Much has been written about creating a learning organization, and it is very easy to complicate the process of raising the knowledge level of an organization. Most of the literature concentrates on the improving the ability of the people to learn in general as opposed to the knowledge about a specific process. The key to growing the knowledge of lean in an organization is repetition with demonstrable results. This can be reinforced if the rationale for using the tools can be tied to the improvement of the business as a whole.

### **Begin the Lean Learning Process**

The first step in the process is to insure there is general understanding of the information currently provided to the workforce, and this begins with the packaging of the information.

The condition of the business must be put in terms most, not all, of the people understand, and these terms must allow one to characterize improvements needed. This is not always a financial representation. For example everyone in the workforce understands schedule performance, unit labor cost, setup time, frequency and cost of defective product; these in turn can be related to financial performance, or performance expected by customers.

### **Measure and Communicate Performance**

A step in the learning process is to identify and clarify the metrics that are important to the company. These metrics are reflective of the strategic objectives and are packaged in such a way that can become institutionalized for the organization. The repetition of reporting on these metrics will over time become well understood by the workforce. As these become part of the day to day language of the company, lean tools can be used to improve performance in specific metric categories. Significant benefit can be gained by communicating performance to specific metrics at all levels of the organization such that performance within a department can be compared to other parts of the company or the company as a whole. Obviously not all metrics are directly comparable to other parts of the organization, but all can be tracked for improvement over time. Each department should have a communication board detailing their performance to key metrics. Four broad categories that could be included on the board are Quality, Cost, Delivery and Continuous Improvement.

### **Use Kaizen to Apply Lean Tools**

When communicating where the company is going, explain the process of implementing change using kaizen as a methodology. A general description is all that is needed, for as events occur, knowledge of the process will increase. Until the general knowledge of the lean tools is widely deployed, the format for a kaizen event is essentially the same and it begins with a learning session where the use of the tools is explained before they are used. The tools include Value Stream Mapping, 5S, Pull/Push, Standard Work, Poka-Yoke, Root Cause Analysis (5 Why's), Total Productive Maintenance and Overall Equipment Effectiveness, Setup Reduction, and Visual Controls.

### **Conduct Formal Reviews of Roadmap Progress**

Once the roadmap is complete, the leadership should insure all players have bought into the process and then schedule regular reviews of the company's performance to the plan. The intent is not to make the process painful but rather to send the message that results are important. The leadership team must acknowledge there will be a tendency to revert to the status quo when problems and challenges are met. This tendency will exist not only in the workforce but also in the leadership team.

## **Plan the Future beyond Lean**

Lean is focused on creating flow and eliminating waste within a process. It provides a company with the tools necessary to produce with flexibility and speed, but it does not address certain

sources of variation inherent in the process as a whole or in individual processes. Six Sigma is a methodology to do this and when it is combined with Lean the results reflect a synergy that can boost the performance of a company to even higher levels. Recently an approach described as Lean Sigma or Lean Six Sigma has gained traction with some companies who have successfully implemented lean and are moving to the next level of performance.

### **Schedule for Lean implementation**

A schedule is integral and must be used in the planning process toward conversion to a high performing lean enterprise. BES recommends using a time-phased top level schedule in MS Project or similar planning software. The scheduled sequence should follow the approach outlined above. It is imperative that the leadership team buy into the process, for they and their people will be held accountable for the execution of the plan. If the organization does not have a formal strategic planning process, the approach as outlined above is still valid since it basically consists of target identification, prioritization, project execution, and measurement of progress. If accurate knowledge of the process is spread throughout the organization, multiple improvement efforts can be undertaken concurrently. The leadership team then must insure valuable resources are deployed to best meet the needs of the organization. Finally, just because an area or process has been kaizened once does not mean the work is done, for as the organization becomes more proficient with the improvement process, another kaizen event may be beneficial.