Article: "Doing More with Less with LSS… Instead of Outsourcing!"

By Dr. Kenneth C. Levine and John Keller

Abstract

Lean Six Sigma (LSS) is currently the most popular organizational methodology and set of tools for improving work processes and satisfying customers. It is popular because it can simultaneously improve quality and reduce costs. Both, in turn, lead to improved profits. Organizations trying to reduce costs often find that outsourcing is not a good option, due to the requirements of long lead times, large minimum quantities, transportation costs and risks, communications issues, geo-political issues, and more. For companies with customers who need short lead times, small quantities, and flexibility, Lean Six Sigma is a much better choice.

What is Lean Six Sigma?

Lean Six Sigma is a combination of Lean Production (or just "Lean") that originated at Toyota (the "Toyota Production System") in the 1950's, and Six Sigma, created by Motorola in the mid-1980's. Although neither approach is new, the combination of the two is extremely complementary and powerful.

Lean focuses on elimination of waste ("muda") through continuous flow and elimination of "non-value" added work (work that customers would not be willing to pay for). Since unnecessary inventory and delays are primarily due to imbalances in task times, attempting to create a smooth continuous flow of activity is a primary objective. Of course, any work task that is no longer needed is eliminated. Employee suggestions are the primary source of Lean improvement ideas.

Everyone can immediately be involved in Lean, and apply Lean methods and tools to known problems (typically with known solutions). Lean opportunities are "visual", and quick and easy solutions are recommended. If the solution doesn't work, the team can repeat the "Kaizen" improvement event and try something else. Over time, if Lean approaches don't work, it will become obvious that a Six Sigma approach is needed, and that data needs to be collected to analyze controllable factors and their relationships to desired results.

Six Sigma focuses on eliminating "defects" by reducing variation in work processes. If, the variation in a critical process metric exceeds the customer's specification limits, defective products or services will result. If the work can be improved by reducing variation in process outputs, the level of defects will decline. The objective of Six Sigma is to reduce the level of defects to 3.4 per million opportunities. This seems impossible, but it is not! In fact, by reducing variation to "fit" within customer requirements, all defects can eventually be eliminated in your processes ("zero defects")! In addition, LSS is a long-term, multi-year approach, and small progress (say from 3 "sigma" to 4 "sigma") will eliminate the vast majority of customer defects, as well as the related costs of customer complaints, rework, waste, lost sales, bad will, lawsuits, etc. And the cost of the "hidden factory" in your organization to deal with these unnecessary costs can be up to 20-30% of total costs!

Six Sigma relies on a few highly trained, full-time "belts" to help others to successfully use the methods and tools to improve their work processes. The Six Sigma DMAIC process (Define, Measure, Analyze, Improve, and Control), creates a structured approach to insure success. Additionally, "tollgates" are used to involve senior management, and monthly presentations of project progress are made to a Steering Team to assure adherence to the methodology, and to obtain official approval for the project team to move to the next phase.

Employees of organizations employing only Six Sigma complain that the approach is over-kill for many small or obvious problems. On the other hand, Six Sigma "purists" complain that Lean is a poor excuse for not using the rigor of Six Sigma when it is needed. It is therefore very important that Black Belts are cross-trained in both approaches, enabling them to select the appropriate approach.

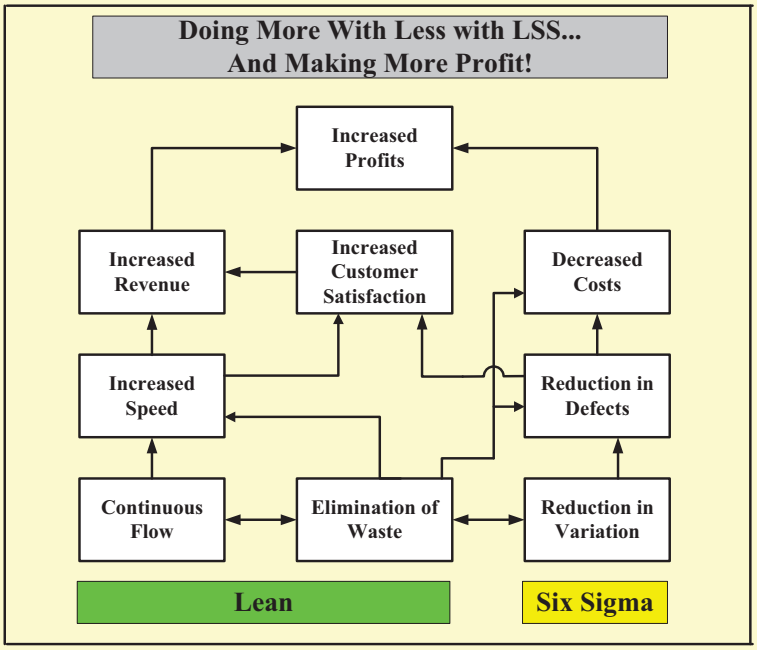
The Importance of Organizational Strategy and "Voice of the Customer"

It is important to remember that no approach to process improvement is useful unless the customer wants what you produce. Creating the highest quality buggy whip is insufficient if your previous customers now want automobiles! More recently, if AOL embarked on an LSS initiative to improve their dial-up internet service, the effort would all be "muda". Therefore, strategy must come first! (The decision to implement LSS in your organization is also a strategic decision!) In addition, companies often shy away from asking customers what they want. However, since the customer defines quality, this is a big mistake! Customer requirements, customer value,

customer satisfaction, customer retention, customer complaints, and other customer inputs are critical to the success of LSS (and to your business in general!!).

Making More Profit with Lean Six Sigma

Although it is important for senior management to drive LSS and personally "walk the talk" by role modeling the process ("tops down"), Lean and Six Sigma must be implemented at the project level by people who actually do the work and interface with customers ("bottoms up"). It is also essential for workers to track financial results of LSS projects to keep senior management attention and support.



Lean should begin first for many reasons. Lean helps to clean up the work environment, making it Six Sigma "ready", as it is very difficult to measure work or improvement in a disorganized, wasteful workplace. Lean also energizes the entire workforce. Implementing Six Sigma later enhances organizational capabilities by adding analytical depth (when appropriate!). If your organization already does Six Sigma, adding Lean expands the improvement "toolkit", especially for quick and obvious improvement opportunities.

If each task in a sequential work process (e.g., steps to create a legal contract, implementing a marketing promotion, or assembling a McDonald's hamburger) takes a different amount of time, work-in-process ("WIP") inventory will accumulate. In a service environment, delays will be caused by these imbalances. By creating a continuous flow, speed will be increased. By eliminating wasteful work activities, speed will also be increased - not because people are working faster, but because a large portion of the work no longer is required! Workers often fear Lean methods, as they think that they are already working too hard or too fast. In a successful Lean company, however, you will find a relaxed work environment where employees go about their value-added daily work (where waste of motion has also been eliminated!).

Increased speed will lead to increased revenue, as it will be possible to meet the stringent time requirements of the most demanding customers. Increased speed will also lead to increased customer satisfaction, which will then create revenue opportunities in the future. In addition to revenue enhancement, Lean waste elimination will decrease costs.

As previously noted, the focus of Six Sigma in reducing process variation will lead to a reduction in defects. By reducing defects, rework and waste will be reduced, leading to cost reduction. Defect reduction will also lead to increased customer satisfaction which will, once again, lead to increased revenue.

In summary, LSS integrates the best of Lean and Six Sigma methods and tools to reduce costs and increase revenue - the perfect recipe for increased profits and competitive advantage.

Still thinking that outsourcing is the solution to your financial and competitive problems? Think again!

Dr. Kenneth Levine *teaches Quality Management, Operations Management, and Business Analysis in the Robison College of Business at Georgia State University. He retired from the Coca-Cola Company with 24 years of service in 2000, and previously worked in the IT and banking industries. Dr. Levine is a Six Sigma Master Black Belt and Certified Purchasing Manager. He is the Co-Director of Georgia State University's Lean Six Sigma certification program, and an active Lean Six Sigma management consultant and trainer. He can be contacted at levil5@bellsouth.net.* ***John Keller*** *is currently the Materials Systems Manager at Ingersoll Rand - Climate Controls Technologies Group. He has been working in manufacturing for 15+ years and had a leadership role implementing lean for 10 of those years. John has his BSIE from NC State University, his MBA from Georgia State University, and Lean Six Sigma Black Belt from Georgia State University. He can be contacted at jjkeller@irco.com.*