

Kick Starting a Successful Lean Six Sigma System

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“It’s not the strongest that survive, nor the most intelligent,
but the one most responsive to change.”

Charles Darwin

This story is about the path that was followed to successfully implement **Lean Six Sigma (LSS)*** systems in four organizations over the last 10 years. (Two were Fortune 500’s). The business types were: High volume manufacturing, Job-shop and/or Make-to-Order Manufacturing, and Aftermarket and Service. Each of these companies tailored the LSS systems to meet their business needs, and all four achieved first year savings of 8%-12% of sales. The methods described are expected to fit any type of business model. It is my hope that you too can successfully use this approach.

*The term Lean Six Sigma (LSS) is being used in lieu of the four different quality/improvement system titles that each of the organizations had adopted.

Why We Started.

Studies indicate that more than half of all US manufacturers have started on some kind of lean or quality systems initiative¹. Among these four companies, there were two basic causes that started upper management on the path of LSS:

1. A burning platform: Three of four of these organizations had identified large performance gaps relating to customer performance (quality, delivery or cost) and/or competitive pressures (low cost countries, market share retention, etc.). These concerns clarified why improvement was needed and helped to achieve rapid employee buy-in.
2. Strategic Initiative: The fourth organization had decided that LSS was a proactive strategy that fit their needs. While there were performance gaps, it was not the driving reason for beginning the initiative.

The bottom line in each case was that there was money to be had. The organization either wanted to recoup its losses or it wanted to better its competitive position.

How we got started

Our X-Matrix had five key sections: 1) Key Objectives (tactical or strategic), 2) Main Initiatives described *how* to obtain the Key Objectives, 3) Key Tactics provided a further *how* on the execution of the Initiatives, 4) Key Metrics that would track performance to the Key Objectives were defined, and 5) Resource Accountability identified *who* owned the execution of each line item. The inter-connecting dots showed visual correlation at each of the interstices to minimize duplication of effort and to balance resources used for execution. Action plans were then drafted by the Resource Owners for each Key Tactic line item. Status was reviewed monthly.

2. Measure – What gets measured, gets done. After defining the objectives, the QLC's established a list of key metrics to monitor the results. This list has multiple names across industry (key process indicators, dashboards, business scorecards, etc.). Our teams referred to theirs as a Balanced ScoreCard or BSC.

Sometimes, prior to an LSS initiative, a specific goal may be targeted and behavior is rewarded to achieve that result. One business had focused on reducing component pricing. They saved hundreds of thousands of dollars. However, when a review of the total business cost was conducted, they found that they were losing more than they were saving due to quality losses and shipping logistics. The intent is for the metrics to balance themselves so that the extreme performance of one does not cause an out-of-proportion effect to the others.

To facilitate balance, organizations might consider a blend of metrics to reflect performance across their own types of "customer" bases. These may include: End-User Customers (on-time delivery, quality, lead time, customer satisfaction), Employees (moral, suggestions implemented, turnover), Suppliers (purchase price variation, quality, delivery), Community (safety, volunteerism) and, of course, the Stockholders (margin, revenue, growth, inventory turns). These customer types are also identified in the US Malcolm Baldrige National Quality Award criteria.

Our BSC's had from 12 to 24 metrics. Getting consensus on the metric definitions was challenging. While the QLC's continued with the parallel execution of their LSS systems, the process of establishing a BSC took six to fourteen months. Accounting focused on eliminating reports of correlating data. This later reduced the amount of metrics and freed up resources.

3. Analyze – To know and not to do is not to know (Chinese Proverb) Based on the objectives, the QLC's selected key processes to analyze for improvement. The businesses held focused training events as they reviewed their processes using a variety of LSS tools (value stream mapping, designs of experiments).

During process analysis, it was key that people *physically* went to the area where the work or process occurred. Doing so enabled the team to see the actual interactions. The various types of wastes in the processes became much more apparent. Once the wastes were defined and eliminated, a cleaner future flow could be developed (Figure 2). Our teams identified nine forms of waste. They are listed below in an acronym that is hopefully easy to remember (Figure 3).

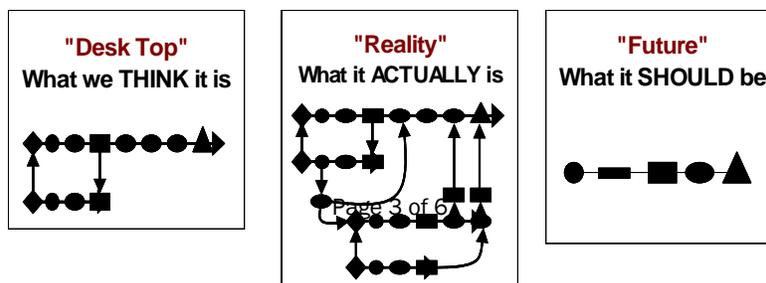


Figure 2: Three Types of Process Flow

C orrection
O verprocessing
M ess
M otion
I nventory
T ransportation

N ot using ideas
O verproduction
W aiting

Figure 3: Types of Waste

One international Fortune 500 business needed to improve their Capital Expenditure process. Approvals took an average of nine months causing a \$4.5M “savings delay” in the year of review. With a 100% first time reject rate, managers reworked and resubmitted documents an average of ten times. While most of that savings was realized the next year, delivery and efficiency targets were missed. After four days of hammering out a process, deciding who really needed to approve what, standardizing the forms and properly training personnel, the approval process was reduced to six weeks for 95% of the Capital Expenditure traffic and to twelve weeks for the remaining 5%. The submission reject rate went down to 5%, with those having an average re-submission of three times. Bottom line savings credited to the global accounting team was \$0. For those with complex decision-making systems, Gladwell’s book, *Blink*, is very illuminating.⁵

4. Improve – Be like Nike – Just Do It. After the analysis, the teams executed their identified fixes. Trust is needed for this to be effective. One team repeated an analysis training event (~\$20K) to accommodate a manager that didn’t originally attend. Generally, though, each of the QLC’s operated with the blessings of the organization and implemented the improvements based upon their results.

5. Control – Even if you’re on the right track, you’ll still get run over if you just sit there (Will Rogers) Interim metrics were used to monitor progress until the teams were able to turn on their BSC’s. Individual project teams were tracked to insure closure and results were shared. BSC targets were included in performance criteria to improve accountability.

Challenges/Pitfalls

1. No burning platform. It is more challenging to motive and redirect a team without a strong impetus. Teams need to see the gaps that exist and/or they need to clearly understand why the business is increasing its lean focus. A strong commitment from upper management is even more critical in this type of scenario.

2. Don’t settle for symptom fixes...go to the work area to find out the root cause.

3. Holding the gain. According to a Quality Digest magazine survey, 50% of businesses that started with management commitment failed in their LSS execution.⁶ It is key that the results are regularly reviewed to validate that the changes are continuing to have the desired impact.

Through various paths, all four businesses were flexible in their approach. They all had an internal champion to keep things moving along. This helped to support the momentum gained by the QLC. Each of the four QLC's were cross-functional in their make-up. They incorporated key business functions which spanned across several levels of management.

Least Beneficial

Complaining. Hundreds of man hours are consumed by us telling each other how bad it is. Take a pass on the pity party and be a part of the solution.

1. Crafting a perfect solution. The Isle of Excellence is rarely attained. Instead of making 1 thing 100% better, consider the concept of making 100 things, 1% better. The velocity of improvement and throughput ratchets up considerably.

2. Tracking all savings. Why use valuable resources to find pennies when they can be making fixes? If the right things are being executed and the BSC needles are moving, then that should be sufficient.

Most Beneficial

1. The X-Matrix. It works when strategies are shared so that the teams understand the goals. The QLC's used this alignment tool to enable a focused execution of the plan.

2. Under-promise and over-deliver. Businesses do this with customers - why not with ourselves? We let our QLC teams do this and it enabled them to share their wins, build morale and increase the velocity of execution.

3. Benchmark and visit others. If the organization is new to an LSS initiative, they don't know what they don't know. Every QLC had their sites visiting local organizations for ideas within 6 months of starting the initiative. They joined local ASQ Sections, networked at their clubs, checked the internet, and read up on organizations that were featured in their trade magazines .

How to Sustain the Effort

1. Informal leaders. Getting the *commitment of the informal leaders*, along with the formal ones, is a major key to success⁷. Identify *who* the informal leaders are. All of our QLC's identified key personnel whom they knew were key to making things happen and leveraged their buy-in. These personnel also typically have longer lengths of service. This enabled improved processes to stay that way.

2. Team composition. The QLC's also tapped into personnel that were the connectors, process experts ("mavens") and convincers ("salespeople"). In *The Tipping Point*, Gladwell shows how changes evolve and "tip" into the mainstream processes as these key players effect and hold systemic improvements⁸. Throughout the process, the QLC's involved the people that were doing the

actual work.

3. Effective tools. The organizations continuously used the X-Matrix (or other) strategic planning method to leverage the spread of horizontal understanding of the goals and objectives.

4. Address the pain. Empower the QLC's to fix what is causing their largest day-to-day issues. These problems tend to negatively impact overall business results. Processes should be selected even if hard savings are not directly calculable. If an executed improvement fixes something, somewhere, the pennies will add up.

One of our QLC's had set a conservative goal for 7% in first year savings. After focused training in analyzing seven processes, they tackled and improved each one of them. This created strong awareness and volunteers worked across the business to improve another 23 processes. Results included improved forecast accuracy and on-time delivery. Their bottom line impact was 11% of sales. Within 18 months, 30% of workforce in a global business of 3000 employees had had a hand in improving some aspect of their work environment. In year two, their bottom line impact was again 11% of sales.

Impact

Overall, the four organizations that began LSS initiatives saved from 8%-12% as a percent of their sales within the first year of execution. It didn't matter what they called the initiative: Business Excellence, Operational Excellence, Process Performance Excellence or Continuous Improvement. They all had a core Council that was key to driving the process. Each team used a high level form of DMAIC to guide their way through the implementation at both strategic and tactical levels.

At each location, the objective was essentially the same: Help the business to become more efficient. Using variations of the above methods, all of these teams succeeded.

There aren't many that can kick start an effective LSS initiative in their first year of trying; however, some businesses are doing it. The above method describes one way that you too can improve your own organization's competitiveness in a short period of time.

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