



**LOOK ONLY AT YOUR INCOME
STATEMENT TO DEFINE LEAN SIX
SIGMA SUCCESS**

**By Dave Boss, Principal
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“Until and unless you discover that money is the root of all good, you ask for your own destruction. When money ceases to become the means by which men deal with one another, then men become the tools of other men. Blood, whips and guns—or dollars. Take your choice—there is no other.”

-[Ayn Rand](#), *Atlas Shrugged*

Executive Summary

Organizations implement process improvement programs for many reasons, some of which have nothing to do with improving financial returns to the stakeholders. Further, once a methodology is chosen, it's common to measure success by counting the number of projects, or the amount of savings attributable to the program. Those that get it right, however, measure effectiveness by the only yardstick that matters – financial statement performance. Once the financial needs of the organization are established, project selection should be driven by impact on customers. Project ideas should come from the bottom-up, be selected based on objective criteria, and compete within the organization for resources.

Introduction

Combining existing process improvement methods into Lean Six Sigma (LSS) was first practiced by Maytag and Allied Signal in the late 1990's.¹ In simple terms, it's a “mash-up” of two popular methodologies of Process Improvement: Lean Manufacturing, coming from a Supply Chain and Logistics viewpoint, and Six Sigma, from a traditional Quality perspective. Competing and complementary approaches include Total Quality Management, Total Preventive Maintenance, Toyota Production System, Theory of Constraints, and dozens of others. The LSS terminology will serve as the proxy for any of these approaches. This paper is not meant to explain the rudiments of any of these, nor to argue for or against any particular approach. Rather, our purpose is to suggest an overall strategy for implementation, once you have chosen the Process Improvement Program right for your organization.

A for-profit business exists to make money for shareholders. It is not chartered to improve the community, implement a supportive environment for employees, or create an exciting new product or service for its customers. Unless, of course, any of these are a means to the end of making more money for the shareholders. Ideally, the way to do this is to sell something at the highest possible price, while producing it for the lowest possible cost.

With the goal to make money, and even more money as time progresses, the best way to minimize costs relative to price is to eliminate waste (any parts of the process that the customer would not pay for if he knew that the material, feature, or labor involved in performing the step were included in the price.) Although still not arguing for Lean Manufacturing as a favorite, this core concept of Lean can be applied to any of its competitors as well. Six Sigma accomplishes this by reducing variation, and hence scrap and rework, a form of waste. TOC minimizes cycle time, eliminating another form of waste.

The temptation might be to look at the organization from an internal view and improve anything that can be improved. Even with a prioritization and payback analysis, this approach misses the point. If waste truly is anything the customer would not knowingly pay for, start with the customer view in mind. After trying many other approaches to Six Sigma, by the mid-2000's GE was mainly pursuing projects that had direct line-of-site to "The Big Y's". "Y", as in

$$Y = f(X_1, X_2, X_3 \dots X_n)$$

Figure 1 The output of a process is a function of the inputs

Or for the non-math folks, "The output of a process is directly dependent on the inputs to that process". Further, a "Little y" output is an internal output, one that is for an internal process, or intermediate step, not seen by the customer. A "Big Y" is seen by and has direct impact on the customer. Examples of Big Y's might be cycle time, conformance to specification, or total lifecycle cost of the product or service.

Ideally, identifying the Big Y's should involve input from the customer. Gathering this information can be prohibitively expensive, though, especially if the organization has thousands, or even millions of customers. But you likely have plenty of people in the organization that can speak on behalf of the customer: sales reps, customer service reps, delivery people, or service technicians, who are faced with complaints, new requests, and shortfalls in expectations on a regular basis, if the fulfillment processes are broken.

By now you should realize that the only motivation for dedicating the time, expense, and churn to the organization associated with a Process Improvement program (PI) should be to make more money for shareholders. Motivation should not be as a marketing gimmick to customers, nor an overture to Wall Street analysts. Furthermore, savings should be defined in terms of "real" money, not "phantom" money. Real money is a result of actual improvements in organization processes,

money that can be distributed to shareholders or reinvested in the organizations activities. Phantom money is that framed by PI practitioners, money that would have been produced even without the PI projects, or that is theorized or projected without much supporting evidence.

When you decide on a PI methodology, there should be at least one of 2 drivers involved:

1. There is no clear path to meeting the financial goals of the organization without such a method, and/or
2. The organization will commit to a higher level of financial goals than would be possible without the changes

Of course these are 2 versions of the same thing; it just depends on the relative financial performance of the organization prior to embarking on a program.

Setting Financial Goals

It does not work for the CEO and CFO to set a PI financial improvement goal based solely on the predicted shortfall from acceptable financial performance. Just because more profit is needed does not mean that the savings potential exists. Nor should a laissez-faire rack-up of improvement ideas that float up from the organization serve as the basis for goal-setting. An executive team can be tasked with setting the objectives as follows:

- a. Identify the shortfalls in key metrics if nothing is done (revenue, profit, etc.)
- b. Perform a detailed review of financial statements to identify key contributors to cost (excess inventory, high outstanding receivables, high cost of sales)
- c. Seek customer input (see above) on where they are not seeing value (and hence not buying as much, or paying as much as they might be willing to if the organization “hit on more cylinders”.)
- d. Perform very brief “kaizen-like” events (still not advocating Lean Manufacturing!) with key subject matter experts in those areas identified above as key detractors from profitability, to imagine what might be possible if they were turned loose on the problem.
- e. Only once the major Big Y impact areas have been identified and brainstormed, assign financial improvement objectives to each. Make a stretch. Your team has only investigated a few major areas to this point. Once you total up these possibilities, double it to account for all the little things you’ve not looked for.

Setting Non-Financial Goals

Since most of us don’t work for theoretical organizations, the political necessity to keep our jobs creeps into the equation. The money going out (training, dedicated Blackbelts, preventive maintenance, new equipment, etc) will likely dwarf the money coming in (real savings). So as long as you realize that these non-financial goals are secondary to the financials, it is ok to tackle problems

that can provide visible and quick results, to be able to show some progress in the interim, despite lack of financial payback. Places to start:

- a. Clean up the place, such as mandated early on by Lean's 5S process, or Total Preventive Maintenance.
- b. Implement Visual Management Systems, such as with Six Sigma Control Charts or as part of Lean implementation.
- c. Establish improved communication channels with employees.
- d. Get better at employee performance management, with actual objectives and periodic formal and informal reviews, with an accountability component

Big Swings, Big Misses Would Be a Big Miss

Now is not the time to implement this policy. The savings you've identified are crucial to meeting the financial goals you have committed to. The committed-to savings cannot be phantom. They are every bit as real as the earnings guidance your company provides to investors. The people tasked with Process Improvement goals have to know that these are not "nice-to-haves", but "must-haves". On the other hand, they will be provided with needed support to accomplish the goals, since the commitments have been made by the CEO.

Project Idea Generation

The conventional approach to generating project ideas for those companies that have progressed to a coordinated process improvement strategy would have the executives determine "Big Y's", and have each subordinate layer of the organization take on Process Improvement goals in support of those Y's, with each in turn creating goals in support of the next higher-up level. This would continue down to the lowest levels, with no further ability to delegate. See Figure 2, below.

We would contend, however, that you get what you measure. If you measure project count, or even savings attributable to projects, you will get results in those terms. Better to just assign financial goals for the organization, once you are comfortable that opportunities exist to improve processes that will result in the savings you have identified. Do you believe in your chosen PI method or not? More important, do your employees believe it?

At Honeywell, which began to implement Six Sigma in 1995, their website claims that "Many improvements are bottom-up suggestions; solutions do not always result from a "top down approach."ⁱⁱ That's good news. Upper management should be focused on setting and achieving financial goals. Again, those closest to the customers, who are the drivers of your corporate profitability, are in the best position to identify areas for improvement.

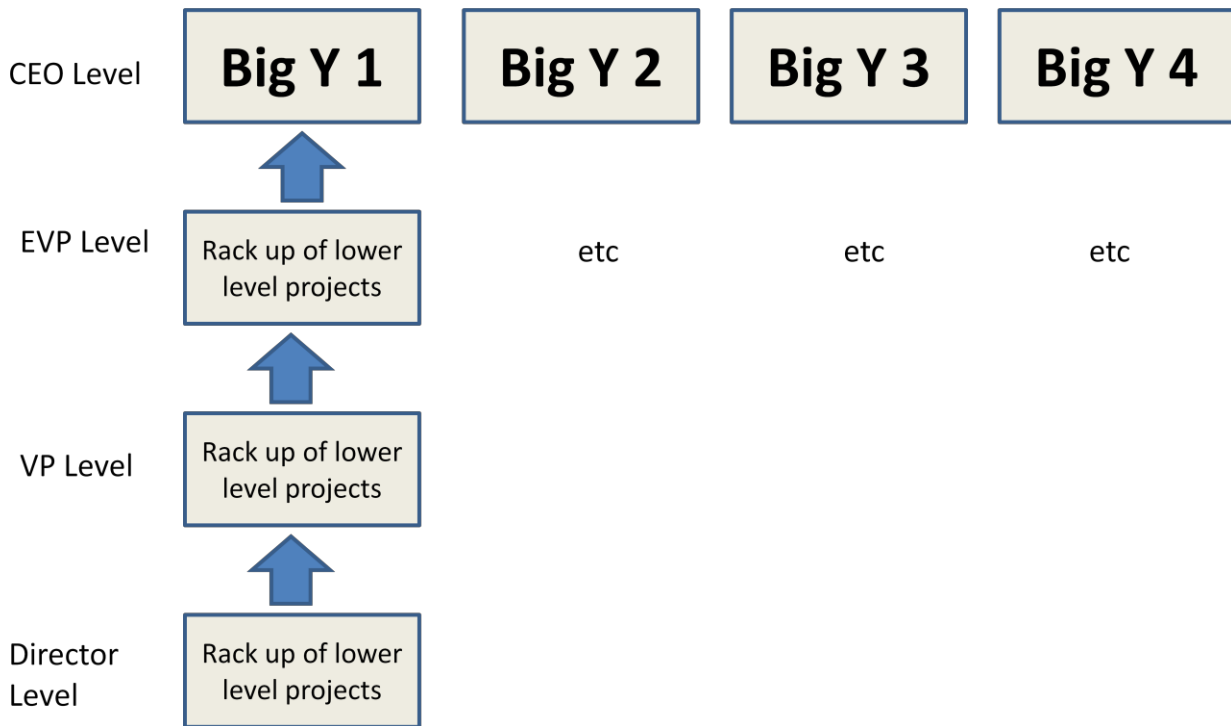


Figure 2 Conventional approach to assigning process improvement goals

Once you assign these seemingly unreachable financial goals, the inevitable whining will start. But, the executive team must present a unified front. Respond with a referral to the local Master Black Belt, who will be more than happy to work with the holder of the budget to help find and implement improvement opportunities within their area of responsibility. The measurement on the budget holder is not how much Six Sigma or Lean project savings were accomplished, but simply whether or not they met their financial goals. If the budget holder can meet their financial obligations through some other means, why is that a problem? Again, one does not embark on a PI program for the sake of its own implementation. Rather, it is to provide a set of tools to the organization to accomplish remarkable results.

Selecting Process Improvement Projects

Undertaking a PI project is not without cost. At minimum, consider the opportunity cost of the employees that are involved with the project. Additional costs may include maintenance, overtime, prototyping, benchmarking, and others. So people should not be free to tackle projects without approval, especially if costs associated with projects come from a centralized PI budget, as opposed to being paid for from the operating profits of the budget holder. A selection process must therefore be implemented. See Figure 3 for the elements that may be included in a scorecard, listed here:

1. The Blackbelt assigned to the budget holder (sponsor) gathers the following information:
 - a. Financial shortfall that the project is meant to address
 - b. Anticipated resources: personnel, materials, IT support, contracts, etc.
 - c. Costs of those resources
 - d. Duration of the project
 - e. Output of the project – recommendations or results?
 - f. Benefits to other parts of the organization
 - g. Leveragability to other parts of the organization
 - h. Ongoing benefit – it will be tracked and the sponsor will be held accountable!
 - i. Impact on customers and internal stakeholders
 - j. Estimate of ROI, IRR, payback period, etc.
2. The Blackbelt and Sponsor present to an evaluation team, composed of Finance, IT, Sales, Marketing, HR, Operations and the Master Blackbelt. The team condenses each project to 3 pieces of information:
 - a. Numerical score based on a company-specific standardized matrix, using criteria similar to those identified in 1., above
 - b. Cost
 - c. ROI or its counterpart
3. Once this has been done throughout the organization, a higher level team including Finance, Process Improvement Leadership, and the CEO and COO set a threshold considering the 3 data pieces for each project, for go/no-go once they see what is available. The threshold will likely reject some portion of the projects, even if there are not enough savings available by approving all the projects which are proposed.
4. Projects above the threshold are approved; others are returned to the queue for reconsideration later.
5. If the above steps do not result in enough savings, there are several choices:
 - a. Adjust the financial objectives, now having a much more granular view as to the shortfall (basically admit defeat)
 - b. Challenge the organization to take a closer look for additional savings opportunities (much sexier)
 - c. Pray for a miracle



Figure 3 - Elements of a Project Scoring Matrix (graphics courtesy of www.wordle.net)

VOC is a Poor Way to Select Process Improvement Projects

A number of organizations, such as Travelocity, GE, Dell, Ceridian, and American Family Insurance, to name a few, visibly use Voice of the Customer (VOC) programs. It is a mistake, though, to use VOC as a mechanism to capture input from which to drive the process improvement projects necessary to positively impact the customer experience. “VOC is an integral part of Six Sigma and is front and center in driving GE’s performance improvement projects.”ⁱⁱⁱ VOC, as practiced by GE and some others, is a systematized set of tools, surveys, focus groups, and analysis mechanisms to try to capture and understand what’s important to the customer. This is logical and even advisable when trying to launch a new product, or come up with better features for an existing service. The problem with this approach for process improvement is that it asks “what would you do”, rather than “what did you do (or not do)”. Just because a focus group identifies 25 features that would make a new car more attractive to the members (and hence increase the likelihood of a purchase), does not mean that when the car is available at the local dealer that any of them will buy it.

For an on-going organization that already has products in the marketplace, a truer mechanism for capturing what’s important to the customers is the sales ledger. Are sales of the product increasing or decreasing? Profitability? Returns and warranty expense? Percentage of customers that have repeatedly bought the item? This moves the discussion from the hypothetical to the actual. The

input from a customer that has bought, used, and been delighted or disappointed by the product, and is in a position to need to buy again is much more valuable than that of a statistically valid hypothetical customer, who is under no obligation to buy, even if you satisfy all of his CTQ's (critical to quality features of the product).

Once customer input is gathered in this manner, it is acceptable and necessary to dig deeper with actual customers to learn the reasons for the changed buying habits. Now you have the basis for identifying opportunities for process improvement that have impact on real, buying customers. The scorecard metric should not be an arbitrary numerical ranking based on a VOC program. It should be actual financial performance of the product.

Summary

This article argues that

- A process improvement program, or even culture, in a for-profit entity should be established in support of the organizations primary goal – to deliver financial returns to shareholders. Any other reasons for implementing process improvement are a waste of resources.
- Upper Management should set the goals for the process improvement program only in financial terms, and to stem the shortfall that would occur without such a program.
- Once the financial goals are established, project ideas, which are focused on customer impact, are floated **UP** through the organization, not down through it.
- Customer impact must be taken from financial statements, not surveys and focus groups.
- Projects should be chosen for implementation based on 3 criteria: numerical score on a matrix of criteria, implementation cost, and ROI.

About the Author

Dave Boss, Principal of StratXL, LLC formed the company to help manufacturers and industrial services providers generate more revenue, and convert more of that revenue into profits. The company accomplishes these goals by application of Strategic Planning, Process Improvement, Financial Analysis, Business Development Assistance, and other mechanisms as appropriate to each client. Dave received his Operational Excellence certification as a Six Sigma Master Blackbelt at GE Energy. As leader of a team of Black belts, he had primary responsibility for process improvement of 14 plants around the world, and secondary responsibility for another 40 locations. Dave received a Bachelors of Science in Mechanical Engineering from Northwestern University, and an MBA from Duke University.

For more information about StratXL, LLC, and how the company can help you increase earnings, visit <http://www.stratxl.com>.

To read other articles on improving revenue and profits for your company, see the StratXL blog at <http://stratxl.wordpress.com>.

Questions and comments can be emailed to info@stratxl.com.

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