

# Improving the Bottom Line: Six Sigma and ROI

BY PRAVEEN GUPTA

Each month 6L invites expert practitioners from the world of Lean and Six Sigma to respond to frequently asked questions or reader inquiries. To submit your question for consideration, fax it to 6L at 703-359-8462.

**Q:** How do you measure return on investment (ROI) for a Six Sigma initiative and what are the critical success factors for achieving a satisfactory ROI in our Six Sigma projects?

**A:** Six Sigma has evolved based on the application of statistical process controls, total quality management, statistical thinking, cycle time reduction and design for manufacturability. In the early 1980s, it was recognized that while various departments achieved departmental improvements, the customer was not experiencing improvement.

This contradiction led Bill Smith to create a solution that would synchronize and accelerate improvement in all departments and, by its sheer degree of improvement, be experienced by the customer. Without going into details, Six Sigma was born in 1985-86.

When it was launched at Motorola on January 1, 1987, the main aspect to motivate employee participation was a share in the savings. I remember once getting an over-40-percent bonus for six months.

People planned to buy or upgrade cars and homes based on such bonuses. That was simple, visible and effective. Employees were asked to plan for stretch goals and achieve them. So-called stretch goals would allow savings beyond what was budgeted.

The extra savings were then shared by the corporation with its employees. The department manager would report the savings, which would then be accepted at the corporate level. That lasted for some time, but as the low hanging fruit was plucked, continued savings became more difficult and managers turned to manipulation.

Corporations, being aware of such practices, started taking control away from managers by changing the savings-sharing plan to a profit-sharing plan linked to corporate performance. Such a uniform profit sharing program led to reductions in bonuses for exceptional improvement along with a loss in momentum for achieving exceptional improvement. The average performance eventually led to a decline in commitment to Six Sigma.

During this cycle of Six Sigma implementation there were no standardized methods of skills development such as Black Belt or Green Belt. Instead, Motorola had a curriculum that consisted of core courses and supplemental courses for learning various tools and techniques.

During these years, Six Sigma evolved and was proven at the corporate level. Motorola reaped a significant savings — about \$2 billion over

five years. In short, processes were managed. Savings were realized. Sales increased, and profitability improved.

Later, the Six Sigma methodology was standardized as it was replicated at other larger corporations such as GE, ABB and Allied Signal. Around this time, the methodology consisted of certified Black Belts or Green Belts. The cost of training was extensive — around \$50,000 per Black Belt. The total cost of training sometimes approached \$100,000 considering opportunity costs.

With such significant investment, the need to deliver savings was a must. The implementation methodology changed. Six Sigma became more of a dedicated, distributed and shared function across departments. The cost was tracked.

Initially, large corporations trained large numbers of Black Belts and Green Belts, which led to the need for large numbers of Six Sigma projects. At some companies, project counts exceeded 15,000. With such a huge number of projects, a project tracking system evolved. The project tracking system monitored projects, progress, completion and potential savings. Of course, at many large corporations, as I have been told, many project-related savings were fabricated. In any case, project-tracking software would also track potential savings. How savings in the project tracking software was linked to corporate

profitability was not discussed.

In the present evolution of Six Sigma, these issues are addressed. Corporations are implementing checks and balances to ensure credibility of cost savings based on Six Sigma and that savings links to corporate profitability. Eventually, one has to ensure that there is a significant ROI for any Six Sigma program.

In the past, only about 20 to 30 percent of reported project savings touched the corporate bottom line. Today, it is believed that more than 50 percent of reported project savings do so. The leadership and stakeholders need to see an initial enthusiasm for Six Sigma but also business performance improvement.

Corporations implementing Six Sigma must address the following issues to capture savings and ensure accountability of the Six Sigma initiative:

- ♦ Opportunity cost or cost avoidance.
- ♦ Timing of savings realization.
- ♦ Uncontrolled adversities erasing savings.
- ♦ Links between fiscal and annualized savings.
- ♦ Investment in Six Sigma and ROI.
- ♦ Savings or profit sharing.
- ♦ Financial reporting.

(See **ASK AN EXPERT** on page 13)

**In the past, only about 20 to 30 percent of reported project savings touched the corporate bottom line. Today, it is believed that more than 50 percent of reported project savings do so.**

## Change

(Continued from page 9)

surface and gather momentum. He says that it is also essential to assure people that the change process is well planned, and that a variety of contingencies have been thought through.

“Secondly, you should create a sub-committee that is a cross-functional group that can serve as the advocates of the new process,” he insists. “What I have found that has worked nicely in the past is to have members of the project team present at their individual staff meetings the new project.”

Rather than having the project manager or the process champion present at every status meeting, Bellanca advises that staff members be tapped to present status updates.

“People feel comfortable hearing about the change from ‘one of their own’ and can ask honest questions they may not otherwise ask a process champion,” he tells *6L*. The project team must prepare the speaker for most possible questions to ensure consistency in message.” ■

## Ask an Expert

(Continued from page 8)

Financial savings are a byproduct of Six Sigma projects as a result of some improvement in a process. The output of that project is a measurement, which could be yield, consistency, defect or error rate, customer satisfaction or cost.

Profit is a corporate-level performance measurement. In order to link projects to the bottom line, one must start with measuring profit by project.

A simplified approach might be to implement Six Sigma and account for bottom-line impact to maintain line-of-sight to the cost, progress and savings. The famous Plan-Do-Check-Act (PDCA) cycle can be applied as unbiased controls to determine savings and prevent fabrications of the same. Otherwise, manipulation begins and objectivity is lost in tracking progress.

To launch a Six Sigma initiative, profit-stream mapping must be performed, and various diversions or leakages of profit must be identified. This is a starting point for seeking leadership commitment, setting expectations for savings and recognizing measurements for bottom-line impact.

I believe that too many projects make Six Sigma initiatives functional silos. Six Sigma must eventually become a way of thinking and working — not an expensive add-on to existing systems.

In a recent implementation of Six Sigma at a small company, a few opportunities were identified and addressed. The company identified a corporate-level measurement system using the Six Sigma business scorecard framework and then drove its Six Sigma initiative by monitoring its corporate Sigma level. Like many companies, it did not commit lots of money in lots of Six Sigma training.



# Think Big

The world just got smaller.

Our global, online search engine is the place to go to find ISO 14001 and ISO 9000 registered companies online.

[www.WhosRegistered.com](http://www.WhosRegistered.com)

Instead, the company committed necessary resources for realized planned savings. The company leadership believes Six Sigma improved its bottom line by 3 to 5 percent in sales. This is a significant and measurable improvement.

Before we focus on savings, a company must establish right measurements for tracking progress of the Six Sigma initiative companywide — in other words the Sigma level for the corporation.

This highlights both strengths and weakness of a Six Sigma initiative. If a company's overall Sigma level is improving, the bottom line is bound to be affected positively.

With sound process management and corporate performance systems, tracking progress and savings become a natural byproduct of Six Sigma implementation.

Six Sigma causes lots of very fast improvement by doing things differently. If many improvements are realized quickly, savings will be realized, which can become visible with a simple existing system for tracking progress and savings.

It requires less effort and costs less than implementing a specific measurement system. If we need to spend money to find out how much money we have made, we are lost in Six Sigma.

**Praveen Gupta**, president of Quality Technology Company (QTC) has been involved with Six Sigma since 1986. He worked with the inventor of Six Sigma and has taught worldwide for Motorola University and QTC. Gupta is the author of *Six Sigma Business Scorecard* (McGraw-Hill, 2004) and many other books on Six Sigma, including *The Six Sigma Performance Handbook*. QTC provides training and consulting services in ISO 9001, Six Sigma, Lean and Innovation. He may be contacted via e-mail at [praveen@qtcom.com](mailto:praveen@qtcom.com). ■