

BEYOND SIX SIGMA/LEAN: METHODS TO ENSURE YOUR ORGANIZATION'S HEALTH

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Abstract

Which companies will be around in ten years? The certainty of any response to this question has probably changed over the last year. Will your company face problems similar to problems faced by Enron or K-Mart? Many companies need to readdress how they measure and make improvements within their organization. For survival companies need to replace the focus on fire-fighting activities with a focus on fire prevention. This paper describes a method that helps companies improve their competitiveness and bottom-line. Described is a statistical based cascading measurement methodology that tracks an organization as a system, which pulls for the creation of improvement Six Sigma/Lean projects that are in direct alignment with the needs of the business.

Issues

After visiting an American company that was implementing Six Sigma, Jim Womack, President and Founder of Lean Enterprise Institute, Inc., highlighted some problems.¹ "Each manager has multiple value streams running through his or her departmentalized facility, but the metrics are at the department or facility level. Thus, natural conflicts have emerged between what's best for the department or facility and what's best for the product as its value stream flows from start to finish through many departments and facilities." "They are committing three common sins the Lean Community should be getting beyond:

- They have no policy deployment process to prioritize the improvement initiatives and to de-select down to a short list that can reasonably be accomplished and stabilized each year.
- They have no value stream managers to look at the entire value stream for each product family, to optimize the whole rather than the parts.
- They have relied on multiple and sometimes conflicting metrics to get their facility and department managers to do the right thing, yet have not given them any useful training in how to actually improve performance."

I agree with Mr. Womack that many companies are having problems with Six Sigma implementation. However, there have also been problems with Lean implementation. This paper addresses these issues by describing a method to wisely integrate Six Sigma with Lean activities.

Smarter Six Sigma Solutions (S⁴)/Integrated Enterprise Excellence (IEE)

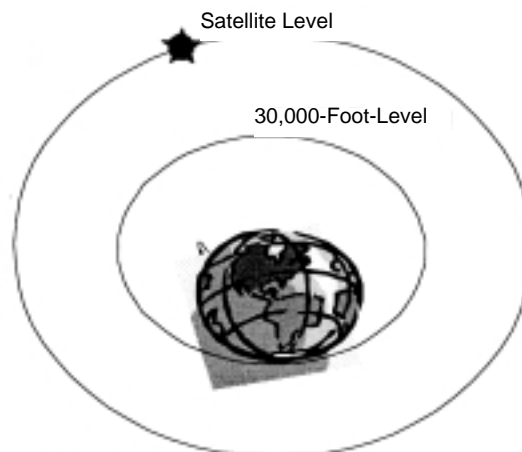
In general organizations need to operate in a framework that leads to the right activities in their day-to-day operations. These activities involve doing the right things and then doing things right. However, management often unconsciously asks the wrong question of its employees. When this happens, employees can waste much resource answering the wrong question – perhaps to the third decimal place. If directives are not given appropriate focus, employees can be spending much of their time fire fighting day-to-day problems that just don't seem to go away, instead of working on fire prevention activities that truly fix the system such that problems do not reoccur.

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All managers within an organization need a system that helps them determine what questions to ask their employees. This system should also be able to help employees answer these questions for the business. A system needs to be created that not only uses data to make the right decisions for their organization, but they must also create the means where meaningful data are available in a useful form throughout the organization's supply chain.

Organizations create strategic plans and policies. They also create goals that describe the intent of the organization. These goals should have measurable results, which are attained through defined action plans. The question of concern is how effective and aligned are these management system practices within your organization? Many organizations have an opportunity for improvement in this area, which can significantly improve their bottom-line. A *Smarter Six Sigma Solutions (S⁴)* or *Integrated Enterprise Excellence (IEE)* approach offers a solution to these challenges. The *S⁴/IEE* approach is similar but yet more powerful than a traditional Six Sigma on Lean approach.²

Within an *S⁴/IEE* management system, *satellite-level* and *30,000-foot-level* Metrics³ are created and tracked. This approach leads to measuring the organization as a system at different levels as shown in Figure 1, which are aligned.



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Figure 1. Levels of View for the Enterprise

Long-term improvement opportunities to the overall system can then be easier identified and scoped as *S⁴/IEE* improvement projects. Trained practitioners then follow a structured roadmap for executing *S⁴/IEE* projects, which can involve not only quality improvements but also cycle time improvements that reduce waste within an organization.

Satellite-Level metrics are high-level business metrics. More information can be gleaned from data presented in this format, as opposed to examining quarterly numbers as a single entity in a tabular format or as a dashboard number. Data presented in this format can be useful for executives when creating their strategic plans and then tracking the results of these strategic plans. With an *S⁴/IEE* strategy, action plans to achieve organizational goals center around the creation and implementation of Six Sigma projects, as shown in Figure 2.

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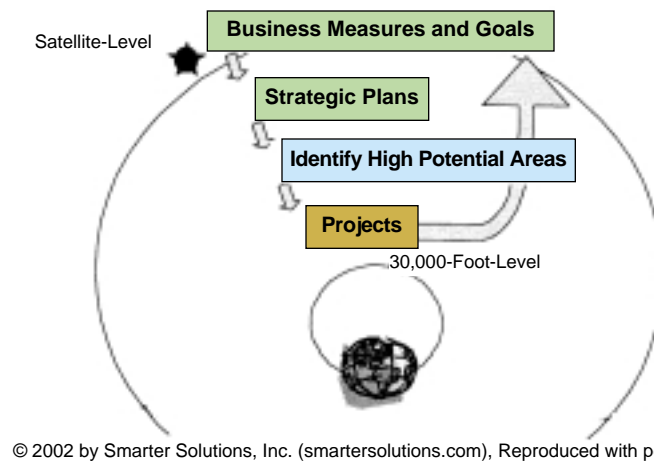


Figure 2. Aligning improvement projects to the overall needs of the business.

Metrics at the *30,000-foot-level* are high level operational or Six Sigma/Lean project metrics. These metrics link Six Sigma activities to business strategies and goals. Use of the right metric drives the right activity. Also, these metrics can significantly reduce fire-fighting activities. In addition, this form of tracking is also useful for balanced scorecard metrics.

The *S⁴/IEE* strategy tracks an organization at a *Satellite-Level* using a statistical control chart. Metrics such as capital utilization, growth, revenue, profit, and customer satisfaction are tracked in this time-series format measuring the overall system output beyond the bounds of quarterly or fiscal accounting periods. A *Satellite-Level* chart is often compiled and tracked monthly.

The control chart format for this presentation separates special cause events from common cause variability. This simple presentation of data can lead to the dissemination of questions throughout the organization, which encourage the execution of projects that improve the overall system, as opposed to fire-fighting the up and down variability excursions of the system as though they were special cause.⁴ Using lean terminology we could say that the measurement systems pulls for the creation of projects.

The alignment of *30,000-foot-level* metrics to *satellite-level* metrics is critical. Traditional operational metrics that can be tracked at the *30,000-foot-level* are defective/defect rates, cycle time, waste, days sales outstanding, customer satisfaction, on-time delivery, number of days from promise date, number of days from customer requested date, dimension, inventory, and head count. Metrics at the *30,000-foot-level* are also tracked on a statistical control chart that has infrequent subgrouping/sampling², e.g., daily or weekly. This charting approach separates common cause occurrence from special cause events. Reacting to out-of-specification conditions when a process is not capable of consistently meeting these requirements is fire-fighting, i.e., treating common cause issues as though they were special cause issues. Typically, fire-fighting activities require much resources and address only short-term fixes.

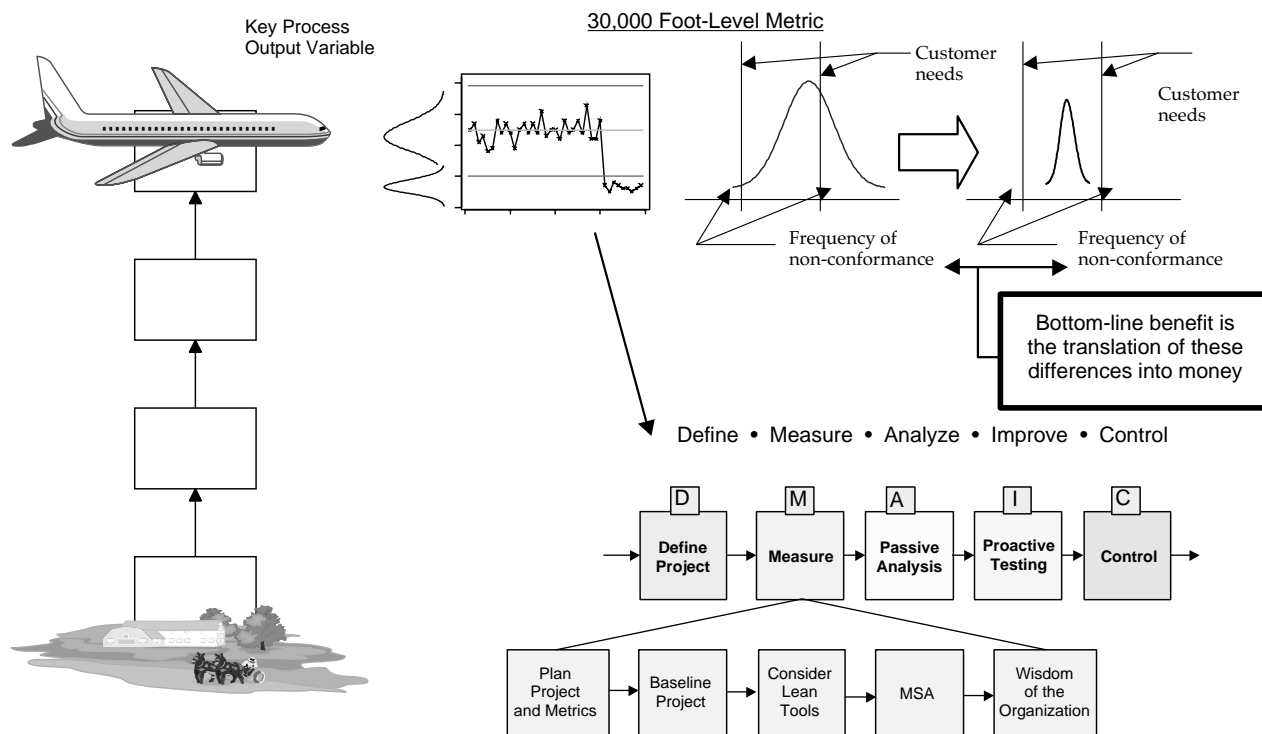
An *S⁴/IEE* business strategy helps organizations understand and improve the key drivers that affect the metrics and scorecards of their enterprise. Tracking the overall system at this level can be a stimulus to the creation of long-lasting change. For example, retribution by executive management for missing arbitrarily

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quarterly objectives can change to more timely questions about the status of *S⁴/IEE* projects that are addressing the improvement of key processes, which are aligned to the overall business metrics.

S⁴/IEE Project Execution

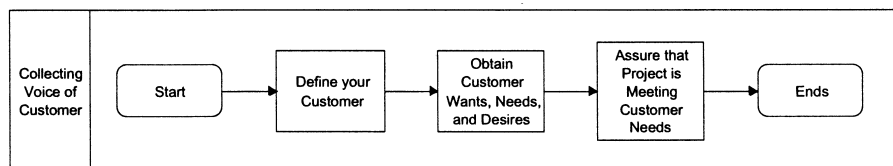
Figure 3 shows how projects within *S⁴/IEE* follow a 9-step Define-Measure-Analyze-Improve-Control (DMAIC) roadmap. Improvements to the process will then be demonstrated in the 30,000-foot-level metric. The financial impact from this change can then be determined.



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Figure 3. *S⁴/IEE* 30,000 Foot-Level project tracking and execution

Voice of the customer (VOC) issues need to be addressed both at the *satellite-level* and the *30,000-foot-level* project level. At the *satellite-level* we need to have a system that captures and tracks the true voice of the customer. This involves more than just sending out survey forms that people may or not answer. It involves the creation of a meaningful customer feedback process, which encourages activities that are aligned with the needs of both internal and external customers. The *S⁴/IEE* business execution strategy has the steps noted in Figure 4 within the VOC sub-process.

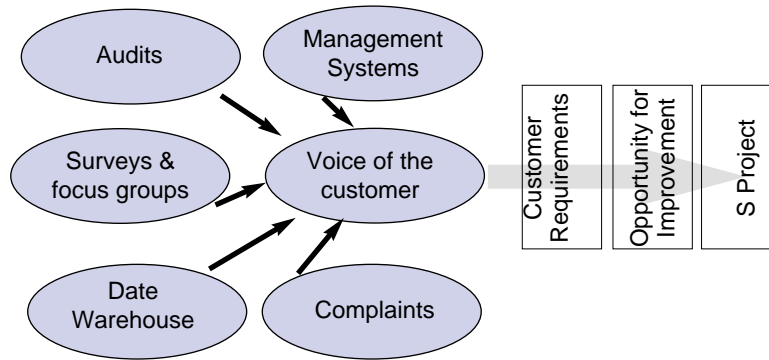


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Figure 4. Collecting Voice of the Customer

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After the customer is defined, their wants, needs, and desires need to be determined. This information can come from several sources, which can lead to the formulation of improvement projects, as illustrated in Figure 5.



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Figure 5. Alignment of VOC needs to S^4/IEE project selection

Creating an effective system to track the effectiveness of meeting customer needs at the *satellite-level* and *30,000-foot-level* is not easy. However, after this VOC system is established, systems can be created to help tracking and report these metrics along with other meaningful metrics that are aligned with the needs of the business enterprise as a whole.

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About the Author

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