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COMBINING LEAN, SIX SIGMA, AND SCOR TO DRIVE PRODUCTIVITY

A WHITE PAPER



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Durable Business Counsel

Combining Lean, Six Sigma, and SCOR: How to Select the Right Improvement Projects for Bigger P&L Savings

By Endurance America

As many organizations struggle to gain new revenue and productivity goals, executives often sponsor improvement projects based on complex requirements that take years of human resource and technology investment to carry out. Typically, this constrains companies from completing other less visible, but maybe more critical, strategic improvements.

The common, ad hoc approach to project identification and selection relies on intuition from C-level executives and narrowly focused ideas for savings from departmental employees. They may be based on specific pain being felt at the moment, marketing requirements or a personal belief system. The key question is: Are the selected projects based on facts or feelings?

Process-based organizations today use the SCOR (Supply Chain Operations Reference) Model, Lean Principles, and Six Sigma in various forms to define and complete improvement projects. All three methods have strengths and weaknesses; by combining the best aspects of each, companies can garner benefits ten-fold of what might be gained using any one individually. By converging the methodologies, these companies:

- Optimize process, policy, organization, and systems;
- Achieve speed in the value chain by eliminating waste;
- Achieve continuous improvement through the reduction of variation.

SCOR: Prioritizing the portfolio

Now in its eighth revision after its 2005 release by the Supply Chain Council, SCOR is a cross-industry model designed to analyze the supply chain and identify improvement opportunities in both material flow and work and information flow. The SCOR model defines a supply chain as "the integrated processes of plan, source, make, deliver and return, spanning your supplier's suppliers to your customer's customers, aligned with operational strategy, material, and work and information flows."

The SCOR model is applied in three phases, starting at a high level (usually the enterprise or supply chain) and progressing down to material flow and work and information flow activities. The final result of completing the three phases of a SCOR project is a prioritized portfolio of projects that vary from strategic to tactical initiatives in the short term (< 1 year) or longer term (2-5 years). When properly conducted, a SCOR project should yield opportunities ranging from 3% to 5% of sales or higher.

Once SCOR is applied to develop the portfolio of supply chain improvement initiatives, Lean and Six Sigma can be effectively employed to carry out the improvement projects.

Lean: Eliminating waste

Lean principles, evolved from Taiichi Ohno and the Toyota Production System, focus on reducing cycle time and increasing process speed. The goal of Lean is to eliminate wasted, non-value-added steps or time traps from a business process. Lean is proven to help reorganize work areas, reduce work-in-process, and speed flow through the entire process. Successful Lean initiatives yield lower inventory cost, higher productivity and flexibility, and faster response time to the customer.

Six Sigma: Reducing defects/variability

Six Sigma is a statistical quality goal that represents the achievement of a quality level equal to no more than 3.4 defects per million opportunities. For most companies, this is a significant if not radical improvement in quality.

But Six Sigma is more. It also focuses on reducing defects and variability within a formalized project management structure. In fact, the management structure for executing and managing projects is a real strength of the Six Sigma approach. When applied properly, Six Sigma can help an organization achieve significant improvements in quality, defect reduction, and ultimately, lower cost. Six Sigma is not only useful for manufacturing, but any operation where an opportunity exists for error, including order entry, customer service, sales, HR, etc.

Lean Sigma: Achieving improvement

By combining Lean and Six Sigma, often referred to as Lean Sigma, it is possible to achieve highly effective improvements in a company's operations. There are, however, limitations with this approach.

First, the project selection process is not well defined. It does not require the company to methodically select, rank, and assign projects, but usually relies on more subjective methods. Projects may or may not be aligned with the corporate business strategy and goals.

Second, Lean Sigma efforts tend to be aligned by organizational functions, or silos, rather than by supply chains. This approach can result in departmental improvements, but falls short in achieving end-to-end supply chain improvements.

Since Lean Sigma depends primarily on brainstorming for project ideas, it can be difficult to sustain long-term momentum once the initial wave of projects is complete. Brainstorming will identify the most obvious issues, but efforts eventually run out of steam.

SCOR, Lean, and Six Sigma: Exploiting the Strengths

SCOR's strength in organizations is focusing results on how the SCOR card, or corporate measurement systems, are affected. While not designed to deploy efficient processes, SCOR will help outline the effective projects to help achieve the desired results.

Method	Strength	Limitation
Lean	Elimination of waste in material, work, and information flows	Few tools for refocusing Lean efforts on strategic and operational process priorities
Six Sigma	Reduction or elimination of variability of either operational or transactional areas	No specific methodology for aligning strategic and operational priorities with project selection and execution
SCOR	Development of a strategically based project portfolio with ROI analysis	Little capability to execute or deliver the calculated values in service

The strength of Six Sigma and Lean is producing results. There are no better methodologies to gain efficiency and construct valuable processes because these disciplines, by their nature, look down at finite areas, cells, or processes to improve. They can't look upward at organizational goals and select the best project on which to work. The projects are typically chosen based on executive directive.

The effectiveness of this convergence is achieved by using the inherent strengths of the three disciplines to balance the limitations of the others.

Project Roadmap: Using All Three Methods

A SCOR project begins by getting management up to speed on SCOR's three phases while developing a SCOR sponsor and design team. Next, project scope is determined based on one or multiple supply chains taking the company's strategic and tactical needs into consideration.

Phase 1: The design team develops a SCORcard that compares the company's performance metrics to a list of key competitors. This phase is crucial because it answers two important questions: "How is competitiveness defined for the business?" and "What are the performance gaps between our company and the competition?"

Phase 2: A detailed analysis of material flow identifies improvement opportunities that will help close competitive gaps.

Phase 3: The efficiency of major transaction types is evaluated through work and information flow analysis. Transactions usually include, for example, purchase orders, sales orders, work orders, and planning events.

The outcome is a portfolio of improvement opportunities that feeds experienced Lean and Six Sigma-based implementation teams.

In conclusion, using SCOR as a complement to Lean Six Sigma offers several advantages:

- It aligns improvement efforts with the supply chain, not organizations.
- It provides a comprehensive analysis of the supply chain, focusing on the customer as the endpoint.
- It enables the selection of projects that will have the most impact on achieving strategic objectives and improving the P&L.