

A Primer: Six Sigma, Lean, and “Lean Six” for Service Organizations

There exists an alphabet-soup mix of quality approaches (TQM, ISO 9000, Six Sigma, SQC, QA, PDCA, etc.) that can be applied to optimizing manufacturing and services processes. Two major approaches, Lean and Six Sigma, have dominated the quality field in past years, along with a newer hybrid approach: “Lean Six.” In this paper we provide a primer on both of these established approaches and the emerging Lean Six framework that is especially well suited to optimizing processes and services provided by facility management organizations.

History of Quality Approaches

The roots of both Lean and Six Sigma reach back several decades to a time when there were great pressures to increase the quality and speed of manufacturing. Originally developed by Toyota in the 1980s, Lean improves quality and reduces production time and cost. Six Sigma—pioneered by Motorola in the 1980s—is a set of tools that use statistical analysis to identify and eliminate defects.

Pros and Cons of the Approaches

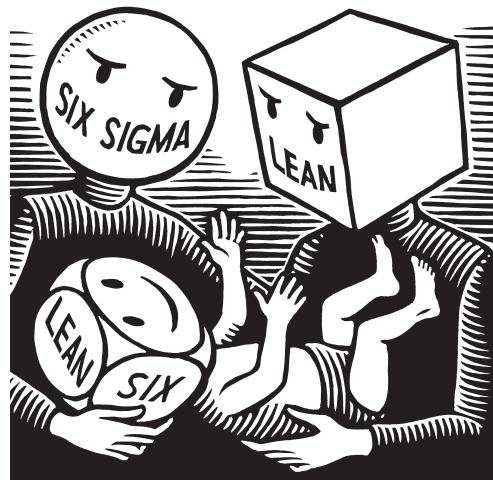
Each camp has its proponents. Lean enthusiasts argue that Six Sigma pays little attention to anything related to process speed and work flow. Six Sigma supporters point out that Lean fails to address key concepts like customer needs and process variation. Both sides are right. But these arguments are often used to advocate choosing one approach over the other instead of pointing out the more logical conclusion that we need to combine the two. In fact, General Electric was one of the first companies to blend the two approaches and is credited for popularizing the mix.

Major features of Six Sigma

- ▶ **Customer focus.** Recognize opportunities and eliminate problems as defined by customers.
- ▶ **Process variability is evil.** Recognizes that reducing process variation improves ability to deliver reliable high quality services.
- ▶ **Show me the numbers.** Requires data-driven decisions and uses a powerful problem solving framework.
- ▶ **Measure it.** Uses a comprehensive set of quality measurement tools.
- ▶ **Sustainable approach.** Provides ongoing benefits when made a part of corporate culture through black belt and green belt training programs.

Major Features of Lean

- ▶ **“Hands-on” approach.** A quick problem solving orientation through Kaizen (small projects or activities designed to improve efficiency) and other events that involve employees.
- ▶ **Process speed.** Focuses on maximizing the speed of processes.
- ▶ **Process analysis.** Provides useful process analysis tools.
- ▶ **Eliminate non-useful activities.** Centers on separating “value-added” from “non-value-added” activities within a process and eliminating the latter and the cost associated with them.
- ▶ **Eliminate complexity.** Provides a way of quantifying and eliminating the cost of process complexity.



What is Lean Six?

Lean Six is a business improvement methodology that merges the **Six Sigma focus on customer requirements and measurement** with the **Lean emphasis on process speed and reduction of complexity**. It maximizes value by achieving the fastest rate of improvement in customer satisfaction, process speed, quality and cost. Some of the characteristics of the combined approaches:

- ▶ Lean cannot bring a process under statistical control but Six-Sigma can.
- ▶ Six Sigma alone cannot dramatically improve process speed or costs but Lean can.
- ▶ Both approaches enable the cost of complexity to be reduced.

Benefits of Lean Six Sigma

- ▶ Dramatically reduce the cost of delivery of internal services.
- ▶ Improve service delivery time.
- ▶ Expand capacity without adding staff.

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