Lean Management is Not Lean Six Sigma[1]

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An important step in addressing Lean's identity crisis is explaining the difference between a Lean management system and a Lean Six Sigma program. The pervasive confusion over this difference may be a major obstacle to the advancement of Lean beyond manufacturing.

The Six Sigma program was originally developed at Motorola in the 1980s as a means for improving the reliability of complex electronic devices. The program was then popularized by Jack Welch in the 1990s when he adopted the program as the foundation for the corporate strategy of General Electric[2].

Six Sigma offers a broad range of tools and techniques for collecting, qualifying, and analyzing data. The program is built around highly skilled facilitators ("Black Belts[3]") who have extensive training and experience in managing projects that involve the use of sophisticated statistical methods. Since its introduction in the 1980s, large manufacturing companies such as General Electric and Motorola have reported billions of dollars in cost savings from the application of Six Sigma.

While Lean management and Six Sigma are similar in terms of their focus on improving the quality and productivity of work processes, they are actually quite different in a number of important ways. These differences are summarized in Table 1.

In terms of its overall approach, Six Sigma is data-driven. The method is built around general-purpose tools that are mostly statistical and analytical in nature. The most common means for sustaining a Six Sigma improvement is statistical process control in which key metrics are tracked over time in relation to upper and lower control limits.

This compares with Lean management, which is a people-driven approach. While Lean certainly incorporates data and may include selected Six Sigma tools, the Lean method is more visual in nature and is generally designed to leverage common sense rather than analytical ability. Lean improvements are primarily sustained through the use of broadly accessible visual controls that guide the work of engaged associates.

Six Sigma improvements are identified within projects that may extend for many weeks or months. These projects are led by Black Belts who have in-depth knowledge of statistical concepts and techniques. Six Sigma follows the philosophy of "Let's study it properly" where the objective of the project is to optimize the process being analyzed. A Six Sigma project requires a substantial level of investment and each project is normally justified based on its expected monetary effects.

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[1] Hinds, David (2017). *The Essence of Lean: A Superior System of Management*. New Worldview Press, Fort Lauderdale, Florida.

[2] Pande, Peter S., Neuman, Robert P. and Cavanagh, Roland R. (2000). *The Six Sigma Way: How GE, Motorola and Other Top Companies Are Honing Their Performance*. McGraw-Hill, New York, NY.

[3] American Society for Quality (2016). http://asq.org/cert/six-sigma-black-belt

Table 1. Six Sigma versus Lean

	Six Sigma	Lean Management
General approach	Data-driven	People-driven
Method	Statistical and analytical	Visual and common sense
Sustaining mechanism	Statistical process control	Employee engagement and visual control
Improvement leaders	Specialists / Black Belts	Frontline employees
Improvement philosophy	"Let's study it properly"	"Just do it"
Required resources	Significant investment in training and structure	Significant commitment but can be scaled down

In contrast, Lean improvements are sometimes developed and implemented by frontline supervisors and associates during events that last from three to five days. At other times, improvements are made as part of the regular daily work routine. Lean management requires significantly less training and is accessible to most employees, regardless of their educational background. The Lean philosophy is to be action-oriented in making small, incremental changes. While a Lean management system does require a significant commitment of time and attention, the direct financial investment required is usually much less than Six Sigma.

Over the last ten years or so, we have seen an increased use of the term "Lean Six Sigma," which typically refers to programs that involve some combination of Lean tools and Six Sigma tools. While combining tools in this way can be useful, the use of the term Lean Six Sigma contributes to the confusion surrounding Lean because it blurs the boundaries between Lean management and Six Sigma. It is common to see Lean and Six Sigma lumped together in business literature and discussions.

The confusion that surrounds Lean and Six Sigma can lead to incorrect conclusions and misinformed decision-making. For example, leaders of many small and medium-size companies may see the large investment and sophisticated techniques associated with Six Sigma and, believing that Six Sigma and Lean are basically the same thing, may choose not to pursue either program. These individuals do not realize that Lean management can be applied in a scaled-down fashion that is viable for even the smallest of organizations.

As another example, some concerns exist regarding the sustainability of improvements made in Six Sigma projects[4]. Unfortunately, many articles in the business literature make no distinction between Lean and Six Sigma. Thus, readers may be left with the mistaken impression that sustainability is a serious problem for both programs. In reality, sustainability is less of a problem in a Lean management system because of the powerful effects of Lean culture on employee engagement and buy-in.

[4] Chakravorty, Satya S. (2010). "Where process-improvement projects go wrong." *Wall Street Journal*, January 25, 2010.