



Lean, take two! Reflections from the second attempt at lean implementation

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Abstract It's not easy being lean. And for many companies, getting lean right the first time does not always happen. *Lean* is a management philosophy focused on identifying and eliminating waste throughout a product's entire value stream, extending not only within the organization but also along the company's supply chain network. Lean promises significant benefits in terms of waste reduction, and increased organizational and supply chain communication and integration. Implementing lean, however, and achieving the levels of organizational commitment, employee autonomy, and information transparency needed to ensure its success is a daunting task. This article describes in detail two lean implementation projects within the same company: a global manufacturer of food processing machines and equipment. The first project was a failure, while the second is viewed as a success. Examining these projects in detail, the major criteria and conditions that led to either lean failure or lean success are identified. Based on these conditions, we highlight a number of lessons learned, all of which may help other organizations ensure the success of their own lean implementation and improvement efforts.

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1. It's not easy being lean

Given recent increases in global competition, scarce resources, and fluctuating economies, it is not surprising that lean production has become critical to the long-term survival of today's manufacturing organizations. *Lean* is a management philosophy

focused on identifying and eliminating waste throughout a product's entire value stream, extending not only within the organization but also along the company's supply chain network. Lean is achieved through a set of mutually reinforcing practices, including just-in-time (JIT), total quality management (TQM), total productive maintenance (TPM), continuous improvement, design for manufacturing and assembly (DFMA), supplier management, and effective human resource management (de Treville & Antonakis, 2006; Narasimhan, Swink, & Kim, 2006; Shah & Ward, 2003, 2007).

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Despite the significant benefits lean offers in terms of waste reduction and increased organizational and supply chain communication and integration, implementing lean and achieving the levels of organizational commitment, employee autonomy, and information transparency needed to ensure its success is a daunting task. Not every company will be successful in its first attempt to get lean. The research featured herein presents lessons learned from two lean implementation projects within a leading European manufacturer of food processing equipment. The first project, attempted in 1997, was a failure. The second project, launched in 2006, is currently viewed to be a success as measured in terms of management commitment, employee autonomy, information transparency, cultural fit, short-term performance improvement, and long-term sustainability of lean efforts.

To identify the criteria and conditions that led to lean failure and lean success (respectively), as well as the lessons learned, detailed interviews were conducted with 20 members of the company representing a wide variety of functional areas and hierarchical levels, ranging from shop floor employees to senior management. This article provides insight to managers regarding what may lead to a successful (and, also, an unsuccessful) lean outcome, as well as which practices and activities to consider (or stay clear of) to ensure the success of their own lean efforts.

2. What is lean?

When examining studies addressing lean, it is important to distinguish between those considering lean from a philosophical perspective related to guiding principles or overarching goals, and those analyzing the concept from a practical perspective as a set of management practices, tools, or techniques that can be observed directly (Shah & Ward, 2007). Lean from a practical or operational perspective involves implementing a set of shop floor tools and techniques aimed at reducing waste within the plant and along the supply chain (de Treville & Antonakis, 2006; Hopp & Spearman, 2004; Liker, 2004; Narasimhan et al., 2006; Shah & Ward, 2003, 2007). Such tools and techniques include, for example, setup time reduction, kaizen (i.e., continuous improvement), six-sigma quality, visual displays (e.g., 5S), kanban, just-in-time supply systems, and preventative maintenance (Shah & Ward, 2003; White & Prybutok, 2001). Lean as a philosophy, however, considers the interrelationship and synergistic effect of these practices in order to improve overall levels of productivity and product

quality, waste reduction outside of traditional manufacturing (e.g., R&D, accounting), integration and interaction across functional departments, and improved work force autonomy. As articulated by Liker (2004, p. 7):

To be a lean manufacturer requires a way of thinking that focuses on making the product flow through value adding processes without interruption (one piece flow), a “pull” system that cascades back from customer demand by replenishing only what the next operation takes away at short intervals, and a culture to improve.

Similarly, Shah and Ward (2007, p. 791) define lean production as “an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimizing supplier, customer, and internal variability.”

The large volume of lean research literature, combined with its international adoption across a multitude of industries, testifies that this production system—originally developed by Taiichi Ohno for the Japanese auto industry—has proven its value far beyond its original geographic region and industrial sector. Given that lean is a multi-faceted concept and requires organizations to exert considerable effort along several dimensions simultaneously, it is not surprising that successfully implementing lean is a complex task. Based on the extant literature (e.g., Achanga, Shehab, Roy, & Nelder, 2006; de Treville & Antonakis, 2006; Liker & Meier, 2006; Shah & Ward, 2003, 2007), we consider lean success to occur if a company achieves the major strategic components of lean (management commitment, employee autonomy, information transparency, and cultural fit), successfully implements a number of practices to support the operational and tactical aspects of lean (e.g., JIT, one-piece work flows, continuous improvement, training programs), and provides evidence of performance improvements and sustainability of the lean program in the long-term. The research presented herein traces the challenges and accomplishments that a large, global organization faced on its journey to achieving a vibrant and sustained lean program, so to better understand the conditions that may lead to such success.

3. Machinery Inc.

To identify lean success criteria, as well as lessons learned which should be considered by other companies, this research explores two lean implementation projects within one large, global organization. The company chosen for analysis, hereafter referred to as

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