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The role of leadership in implementing lean manufacturing

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Abstract

It is widely accepted that for the successful implementation of lean manufacturing, the senior management commitment is of great importance. However, the lean journey is usually a long one, and eventually management commitment creeps. Furthermore, the involvement of employees in daily improvements is also critical for the success of implementation. Lean leadership can be considered as a way of sustaining and improving the employee performance in lean production systems. In the present study, a thorough literature review is presented focusing in reviewing the principles of lean leadership and the practices that can lead in improving the employee performance. Furthermore, the characteristics and qualities of lean leader are discussed.

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1. Introduction

Lean over the years has become a “buzz” word. Started with lean manufacturing in the late 80s (rebranding the Toyota Production System) [1], and nowadays the term “Lean” can be found almost everywhere, just to offer some examples: lean services, lean entrepreneurship, lean software development, lean product development, lean accounting, lean startups and the list goes on and on. The underlying concept though is the same; maximize the customer value with minimum waste, i.e. “manufacturing / delivering more with less”.

Although, the term “lean” is widely understood nowadays, implementing lean still poses a number of challenges. The successful *lean transformation*, as described the process of a company moving from an old way of thinking to lean thinking by lean experts and practitioners, relies in a big number of factors. The identification and ranking of these critical success factors have been the focus of a big number of studies. Salonitis and Tsinopoulos [2] based on an extensive review of the available literature, identified several key success factors, including: “Organisational culture and ownership”, “Developing organisational readiness”, “Management

commitment and capability”, “Providing adequate resources to support change”, “External support from consultants in the first instance”, “Effective communication and engagement”, “Strategic approach to improvements”, “Teamwork and joined-up whole systems thinking”, and “Timing to set realistic timescales for change and to make effective use of commitments and enthusiasm for change”. Zargun and Al-Ashhab [3], in a similar study, identified 27 critical success factors that they classified into four groups, namely “Strategy and Objectives”, “Leadership and Management”, “Human resources” and “External factors”.

The commitment of senior management in the lean transformation is underlined in almost all studies. Dombrowski and Mielke [4] highlighted the leadership as a cornerstone for engaging employees in continuous improvement initiatives, something that they consider a critical factor for introducing a lean production system.

In the present paper, the focus is on the role of high level management in the successful implementation of lean manufacturing. The work is based on a systematic literature review and a number of interviews conducted in various manufacturing companies in the UK.

2. The lean paradigm

Lean manufacturing is about eliminating waste (the non-value-added components in any process) and satisfy customers. Waste identification and elimination is central to lean manufacturing philosophy. Through lean, manufacturing can be achieved by using less human effort in the factory, less space, less financial resources and less material for producing the same product [1]. To achieve this, five lean principles have been proposed by Jones and Womack [5], namely “value”, “value stream”, “flow”, “pull” and “perfection”.

In order to achieve lean, a number of tools and practices have been developed. These can be presented graphically in the “house of lean” (fig. 1). The implications of the house of lean, is that there is logical sequence that needs to be followed for implementing lean. Therefore, the “foundations” need to be set before the lean “house” can be build. The starting point is stabilizing the performance of the production system, and for doing so, a number of tools can be used, such as 5S, SOPs etc. Afterwards, the focus can be in “building” the walls, and so on. The lean tools and processes can be also classified per their focus. Fig. 2 presents such a classification of the tools as suggested by Salonitis and Tsinopoulos [2].

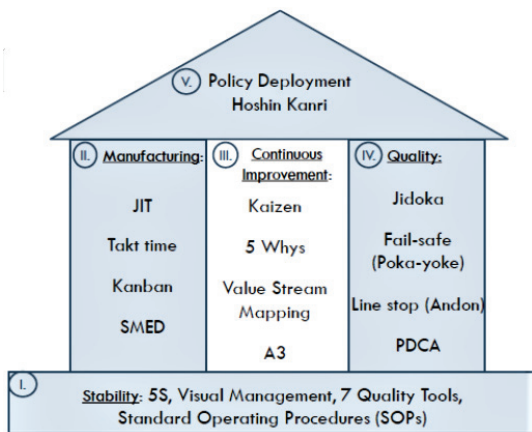


Fig. 1: House of lean (adapted by [5])

However, it needs to be highlighted that the lean transformation is about the whole organization, and not only production. All individual departments and their operations within the organization are to be optimized in a coordinated way. This coordination is the responsibility of the senior management.

3. Critical success factors for lean manufacturing

As indicated in the introduction, the success of introduction lean manufacturing relies on several factors. Hamid [6] identified eight internal organizational factors and two external factors. The internal factors include “top management”, “training and education”, “thinking development”, “employees”, “working culture”, “communication”, “resources” and “business planning”. The external factors include “customer focus” and “government intervention”.

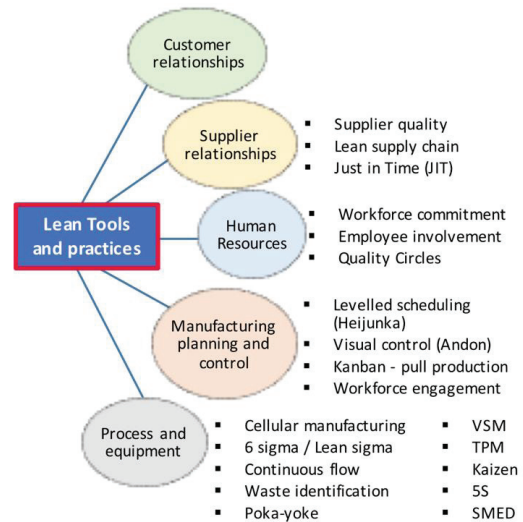


Fig. 2: Lean manufacturing tools and practices [2]

“Top management” factor is key in almost all studies, regardless of whether the study was focused on small and medium enterprises (SMEs) or big organizations, or whether the study was focused in specific countries (example in studies [2], [3], [4], [7], [8]).

In order to capture the importance of lean management in manufacturing companies within the UK (a country whose companies are considered quite mature in lean implementation), and also identify if there are any key differences between large and SMEs a number of interviews were conducted with production managers.

4. Importance of top management for lean introduction

Senior management commitment has been widely considered as a vital factor. The senior management commitment could be demonstrated in the form of developing clear vision ensuring sufficient financial resources, and providing strategic leadership. Although the transformation into lean is often desirable to be driven from the shop-floor, it is important that senior management lead the journey in its first stages. found empirical evidence that management commitment and support affected negatively and positively the efforts of implementing lean initiatives. 75 companies were contacted, with 48 accepting for a short telephone semi-structured interview (64% response rate). The interviews took place in December 2016. The companies participating represents several sectors including automotive, aerospace, defense, consumer goods etc. Out of the 48 companies 20 of them (ca 42%) are SMEs, allowing for such a comparison to take place. The interviews were focused on the critical success factors for lean manufacturing, the lean tolls and techniques diffusion and their understanding by companies and the barriers that the companies face when trying to increase their maturity. In the present study, the results on the critical success factors as well as the barriers related to the senior management will be reported, in order to highlight the importance of the top management commitment.

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