Guest editorial

Lean-based business models

To understand business dynamics, companies shape their business model. There are various business models embodied as frameworks that help in the journey of the organizational transformation to lean management. Lean management is an approach with principles, methods and tools that facilitate business improvement in all processes within and between organizations.

Through a lean transformation process, companies can achieve high levels of business performance. Thus, there is still an interest in how to assess the success of lean transformation and which measurement instruments should be applied. The baseline for a lean management and how this is defined through a framework or a roadmap needs to be better structured. Lean management has become a transversal theme crossing all types of companies. Also, lean can be combined or linked with other approaches. Companies should understand, during an implementation, what is the right work to do, in the right way with the right capabilities to generate value.

This special issue includes seven papers in different areas in which lean currently operates. Several research methodologies and contexts, as well as different industrial sector (e.g. automotive or health care), are objects of study. A short review of the papers, emphasizing its major contribution, is presented in the following paragraphs.

The first paper, "Shop floor management system in the context of smart manufacturing: a case study," introduces a novel study in the area of smart manufacturing. It characterizes the shop floor management system considering smart technologies and digital shop floor features. The study was applied in one multinational company from the automotive sector where the lean methods and tools are considered. The paper is one of the first contributions which characterize the shop floor management system on smart manufacturing.

"Analysis of lean manufacturing strategy using system dynamics modelling of a business model," the second selection, describes a system dynamics methodology based on the company's business model canvas perspective. The simulation was set and analyzed the impact of lean manufacturing on business performance. This originality approach integrates the perspective of the nine building blocks of the business model canvas into the system dynamics to analyze the impact of lean implementation.

The third paper, "A Continuous Improvement Assessment Tool, considering Lean, Safety and Ergonomics," develops an assessment tool to evaluate lean implementation combined with ergonomics and safety condition in a workstation or production line. Through a case study in a metallurgical company, the tool was validated. This paper will be of major interest to practitioners, as it makes the interaction between the three approaches: lean, ergonomics and safety – important subjects for all type of companies.

"A lean manufacturing road map using fuzzy-DEMATEL with case-based analysis," the fourth paper, presents a lean manufacturing roadmap. This study considered a structural approach, which integrates balanced scorecard, theory of constraints, fault tree analysis and fuzzy-DEMATEL method. The implementation of a lean improvement roadmap is developed in an Egyptian manufacturing company. The originality of this approach will support decision-makers to select the appropriate lean initiatives and how to prioritize them considering their interrelationship.

The fifth paper, "Effective After-sales Services through the Lean Servitization Canvas," developed a tool, the lean servitization canvas, to improve service operations in after-sales business. The originality of the tool is demonstrated through the application of the elements of the business model canvas with the combination of digital and physical streams. The authors validated the model through two case studies, where physical goods are produced or serviced. The study concludes that lean approach is a core element to succeed in after-sales services.

"Manufacturing sustainability assessment using a lean manufacturing tool: A case study in the Indonesian wooden furniture industry," the sixth selection, developed a manufacturing sustainability index based on lean and sustainability concepts. The purpose of this research was to present a methodology which applied Delphi method, sustainable-value stream mapping and AHP for defining the manufacturing sustainability index. This study provides a better understanding of the selection relative to specific indicators for environmental, economic and social aspects. Although the study developed around the furniture industry, this methodology may be replicated in another industrial sector.

The seventh paper, "Operating Room Effectiveness: a Lean Healthcare Performance Indicator," studies lean management in health care. This study proposed an adaptation of the overall equipment effectiveness for operating room of a hospital, defined as operating room effectiveness (ORE). The authors, based on data collected from a Brazilian hospital, developed a set of scenarios to explore the possible improvements in the process, showing the application of the ORE indicator. The originality of this approach was to propose perspectives to increase the system effectiveness in operating room.

The papers included in this special issue are representatives of the current research opportunities and challenges that academics, researchers and practitioners are facing with lean implementation. It is expected that this special issue provides motivations to work on those opportunities and challenges.

The Guest Editors want to thank the Editor-in-Chief of the *International Journal of Lean Six Sigma*, Prof. Jiju Antony, who gave the opportunity to guest-edit this special issue, and to Emerald's editorial and publishing team for their support. The Guest Editors also would like to thank the anonymous referees for their work, time and valuable contribution.

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