



Extending Lean Framework Beyond Conventional Boundaries:

Exploring Value Creation and
Appropriation in SMEs and Services

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Services**

Thesis

with regard to the doctorate/PhD degree

at Nyenrode Business Universiteit

on authority of the Rector Magnificus, Prof.dr. M. Džoljić

in accordance with the Doctorate Committee.

The public defense takes place on July 13, 2017

in the afternoon at exactly 16:00 o'clock.

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Dissertation Nyenrode Business Universiteit
Breukelen, The Netherlands

Cover Design: Proefschriftmaken.nl & Erdoğan Gülyaz
Printed by: Proefschriftmaken.nl

ISBN 978-90-8980-100-5

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Summary

Over the last decades, Lean management, with its guiding principle of ‘creating value by reducing waste’, has drawn considerable attention from scholars and practitioners alike. More and more (large and small) organizations across a wide range of sectors have been trying to gain a competitive edge by using Lean principles. However, research shows that most companies fail to reap the expected rewards from their Lean efforts. One possible cause for this is the strong emphasis on improving internal processes combined with a limited market orientation that many firms seem to adopt when using Lean. However, in today’s highly dynamic and competitive business environment, where the boundaries within the value chain become increasingly blurred and customer needs are harder to pin down, organizations arguably need to do more than merely improve their internal processes to increase efficiency. Additionally, and increasingly, they need to understand what their customers truly value, and explore value creation and appropriation possibilities beyond their organizational boundaries.

Lean management has its roots in high-volume manufacturing environment. In this PhD thesis, it is investigated how organizations that operate beyond the conventional boundaries of Lean, such as SMEs and service organizations, can create and capture value through Lean. This research uses ‘customer value’, ‘value creation’ and ‘value appropriation’ as the main theoretical concepts to study how Lean can influence competitiveness. Despite the growing interest in these concepts within the Marketing and Strategy research disciplines and their conceptual link to competitive advantage, little is known about them in the Lean discourse. The aim of this research is to help reduce this gap.

This research begins by focusing (Chapters 2, 3 and 4) on SMEs and examines the influence of Lean on competitiveness, theoretically and then empirically in two distinct SME contexts: professional services (more specifically, legal services) and manufacturing (more specifically, high variety/low volume manufacturing). For the remaining part of the research (Chapters 5 and 6), the main focus has been on the concepts of ‘customer value’ and ‘value creation and appropriation’. As such, this

research consists of three main parts: *exploring* Lean and competitiveness in an SME context (*Part I*), *deepening* the understanding of customer value in Lean (*Part II*) and *broadening* the perspective on value creation and appropriation in Lean (*Part III*).

Part I (exploring) consists of three chapters (Chapter 2, 3 and 4). SMEs, with their specific characteristics, including a lack of economies of scale, a high level of customization, a fluid organizational culture, an entrepreneurial orientation and a more informal approach to management practices, provide a fertile empirical context in which to develop new insights about the applicability of Lean beyond conventional boundaries, and, as such, extend the knowledge base of Lean.

Chapter 2 provides a comprehensive picture of the SME context by highlighting their characteristics and presents a theoretical discussion of how those characteristics may influence the adoption of Lean. The analysis reveals that Lean can indeed increase the competitiveness of SMEs by addressing their three major weaknesses (resource poverty, cash flow and low profitability), albeit with some reservations. While the three weaknesses serve as strong motivators for adopting Lean, weaknesses associated with managerial practices, such as limited strategy development, short-termism and an informal approach to operations management, may make it hard to fully benefit from the adoption of Lean. In other words, the managerial practices that are fundamental in Lean philosophy, such as adopting a long-term orientation and structured approach to problem solving, also appear to be frequently lacking in SMEs. Intrigued by these theoretical insights, in Chapters 3 and 4, it is examined empirically how Lean can influence SME competitiveness.

Chapter 3 presents the exploratory case research involving legal service SMEs. Identifying the main pressure points that those SMEs face, the study reveals that ‘fee pressure’, combined with ‘a need for quick delivery’, makes Lean more relevant than ever in legal services. Although reducing costs and increasing speed can logically help legal service SMEs improve their competitiveness, such operational advantages may not be considered as order-winners in the long run. Emerging technologies, which are generally speaking adopted by large firms, will expectedly commoditize many legal services and deliver them cheaper and faster. Therefore, as revealed in

the case study research, smaller legal service firms have to find new ways to serve their customers better. This ‘new thinking’, as one of the law firms stated, requires a more in-depth understanding of the needs and processes of their customers, beyond low cost and fast delivery.

Chapter 4 presents the second case study research, which involves manufacturing SMEs that have already adopted Lean. The study empirically identifies the three categories of contingencies that affect the adoption of Lean by SMEs: operational context, environmental constraints and the intrinsic motivations of the Owner/Managing Director (OMD). Based on those contingencies, this study derives three propositions, which lead to three different explanations of how Lean can improve SME competitiveness. In light of the two patterns of Lean adoption in SMEs that emerged (namely ‘inward focus’ and ‘short-term orientation’), it is concluded in Chapter 4 that SMEs view value creation in Lean predominantly from a process improvement perspective, involving operational efforts like shortening lead-time and increasing productivity. However, in today’s highly interconnected world, SMEs would be better off seeing the value creation process as a phenomenon that does not hinge on the firm’s internal processes, but that encompasses the interactions in their value network. Such a value network view brings the concept of value appropriation into the spotlight, which thus far has not been discussed explicitly in the Lean discourse.

The findings from *Part I* are reflected on, as a whole, in the so-called **Intermezzo**. It is concluded that the relationship between the adoption of Lean and SME competitiveness is moderated by various factors, such as management practices (Chapter 2), customer value understanding (Chapter 3) and developing a holistic view on value creation (Chapter 4). These findings have triggered a research interest in advancing existing knowledge in two areas within the Lean discourse, which have, so far, remained implicit and conceptually underdeveloped: (1) the concept of customer value, known as Quality Cost Delivery (QCD) in Lean, and (2) the understanding of value creation and value appropriation, which, in Lean, has been conceptually linked to waste reduction in a value stream. These two areas are further investigated in *Part II* and *Part III* from a multidisciplinary research perspective.

Part II (deepening), which only consists of **Chapter 5**, discusses the main limitations regarding the concept of ‘customer value’ in the Lean discourse. While the generic understanding of customer value (QCD) can be a reasonable assumption in some mature industries with high-volume manufacturing (e.g. the automotive supplier sector), some scholars point out that it is a ‘dangerous’ assumption in most other contingencies. Considering the increasingly sophisticated customer needs in today’s fast-moving world and the conceptual developments in customer value research, e.g. service-dominant logic and value-in use, such a QCD perspective is too limited, especially for the organizations that operate beyond large-volume manufacturing environments (including SMEs and professional service firms, as indicated in Chapters 3 and 4). To address this conceptual gap in the Lean framework, this study proposes a new model, the so-called Customer Value Matrix (CVM). The CVM model integrates and extends existing theoretical customer value conceptualizations and provides a more fine-grained, and at the same time more holistic, view of customer value. The CVM model and the accompanying method of use, together called the CVM instrument, are built and evaluated iteratively by following a Design Science Research approach.

More specifically, it is demonstrated in Chapter 5 that the CVM instrument offers various benefits to firms wanting to realize a competitive advantage by deepening their understanding of customer value. Although the starting point for the research was the Lean framework, the CVM itself is not necessarily specific to Lean but covers a broader area, namely the intersection between Operations and Marketing. Developing a deeper understanding of customer value should be viewed as a first step towards value creation. The next steps involve value creation and appropriation, which are examined in *Part III*.

Part III (broadening), which consists only of **Chapter 6**, examines how value is created and appropriated, first in a vertical value chain (also known as a supply chain) extending from resource suppliers to firms, through firms, to customers, and then in a value network, which includes, in addition to value chain actors, competitors and network partners. The aim is to broaden the perspective of value exchange in the Lean framework, i.e. from focusing primarily on a single stakeholder (customer) towards focusing equally on other key stakeholders (e.g., material

suppliers, employees), and from a primary emphasis on value creation towards a more balanced emphasis on the creation and appropriation of value. Combining the key insights from various research streams, including stakeholder theory, service-dominant logic and resource-based view, the study develops an integrated framework, the so-called Lean Value Management (LVM) framework, which explicates a broader range of value creation and appropriation mechanisms to be considered when seeking competitive advantage.

It has to be noted that, in a traditional Lean framework, value creation and appropriation are achieved together, e.g. reducing work-in-process inventory increases delivery speed (value created for customers) as well as reducing inventory cost (value appropriated by the firm). However, when the value exchange perspective is broadened from a traditional single-stakeholder (customer) perspective towards a multiple stakeholder perspective as is done in Part III, value appropriation efforts become as critical as value creation efforts when it comes to achieving competitive advantage. The LVM emphasizes two important points about value appropriation: (1) every value creation effort has to be considered in conjunction with value appropriation options; and (2) Lean organizations need to put deliberate and active efforts in appropriating value, beyond the conventional cost reduction logic. Part III also examines analytically how Lean organizations can achieve competitiveness by creating a bigger value pie than the conventional approach suggests and by realizing a sustainable profit at the same time.

Chapters 5 and 6 together aim to extend the Lean framework regarding the concept of ‘value creation’ beyond QCD and internal waste reduction, and provide a much broader landscape for organizations to explore value creation (and appropriation) opportunities in their value network.

Chapter 7 concludes the research by highlighting the research contributions and presenting the research limitations & future research directions. This chapter also brings together all the extensions discussed in Chapter 5 and 6, and presents the extended Lean framework, the aim of which is to provide a more contemporary and holistic view of Lean management that can be used in a wider variety of settings.

The main theoretical and managerial contributions of this PhD research are summarized below.

Main theoretical contributions

1. This study contributes to the contingency view in Lean research by providing a comprehensive overview of SME characteristics and their challenges, and contains a theoretical discussion of how Lean can address those challenges (Chapter 2).
2. Given the limited knowledge base involving the applicability of Lean in legal services, this study provides new insights by delineating the key challenges of legal service SMEs and by showing how Lean can address some of those challenges. As such, this study sheds light on an under-researched area in the Lean discourse (Chapter 3).
3. This research contributes to the Lean research by identifying three categories of contingencies influencing the adoption of Lean by SMEs (operational context, environmental constraints and OMD's intrinsic motivations), which lead to three propositions in Chapter 4. To understand how Lean can improve the competitiveness of SMEs, these contingencies have to be carefully examined. In other words, adopting a non-contingent approach may be one of the reasons why many organizations, including especially SMEs, fail to extract expected results from Lean and why SMEs adopt Lean to a lesser extent than large organizations (Chapter 4).
4. This study contributes to Lean theory by providing a deeper perspective of customer value, beyond QCD. By using a Design Science Research approach, this research uses rich customer value concepts from Marketing research to develop a customer value artifact that can address the limitations surrounding customer value understanding in the Lean discourse. Using build-evaluation iterations to generate new knowledge about capturing customer value effectively, the CVM design theory complements 'service-dominant logic' and 'Lean consumption' (Chapter 5).
5. Drawing on two emerging research streams (service-dominant logic and stakeholder perspective), this research has formulated four propositions in Chapter 6, which extend the Lean framework. The scope of waste has been broadened from

the traditional dyadic perspective (firm's activities towards its customers) towards a multiple stakeholder perspective. In this research, waste is redefined as "*actions of one stakeholder that do not create value for another stakeholder in the value chain*". Although the Lean enterprise concept broadens the scope of Lean from internal processes to end-to-end core processes, including suppliers, firm and customers, thus far, little formal work had been done in Lean research to elaborate value and waste concepts from a multiple-stakeholder perspective. Broadening the scope of value creation by using a value chain view and incorporating the value appropriation concept in the Lean framework, this research laid a theoretical foundation to advance the stakeholder view in the Lean discourse (Chapter 6).

6. As always, the Lean framework continues to evolve. By incorporating service-dominant logic, multiple stakeholder view and several other value-related concepts from Marketing and Strategy disciplines, the Lean framework has been extended within this thesis on several dimensions. The extended framework proposes a new foundation of value creation and appropriation in Lean and aims to enable a wider variety of organizations to adopt Lean more strategically (Chapter 7).

Main managerial contributions

1. This study offers a process taxonomy for legal services, which can be viewed as a road map from where to start a Lean journey in law firms, i.e. starting with 'low hanging fruit' in the form of repetitive and internal processes (e.g. the billing process), and then moving on to more 'complicated' processes, such as litigation (Chapter 3).

2. The CVM instrument developed in this thesis can be added to the Lean toolkit to provide a more structured and holistic understanding of customer value. Through the use of CVM instrument, organizations may be able to review the customer's processes and encounters in a structured way, thereby creating new ideas on to improve their value offerings. Moreover, the regular use of CVM can help Lean organizations develop a more balanced customer and process focus (Chapter 5).

3. The LVM provides managers with a comprehensive view of value creation and appropriation mechanisms that can be leveraged to increase their competitiveness.

The LVM could help Lean organizations minimize trade-offs and look for synergy among stakeholder actions, which would lead to a greater net value increase in the value chain compared to the process-level and efficiency driven Lean implementations, in which trade-offs and synergies are not discussed explicitly (Chapter 6).

4. The extended Lean framework enables organizations to see a broader range of value gaps and leakages in their value creation and appropriation efforts, which will potentially reveal many value gaps to fill in and value leakages to prevent. The new framework can also focus Lean efforts, which generally hinge on internal processes, towards a more fruitful milieu, their value network (Chapter 7).

To conclude, in today's highly dynamic and competitive environment, organizations wanting to improve their competitiveness through Lean have to make a strategic leap from their internal processes to their value network and start approaching the creation and appropriation of value from a multi-stakeholder perspective. To that end, this thesis proposes several tools and frameworks, and starts a discussion about creating and appropriating value within the Lean discourse.

Extending Lean Framework Beyond Conventional Boundaries

Over the last decades, Lean management, with its roots in high-volume manufacturing environment, has drawn considerable attention from scholars and practitioners alike. More and more (large and small) organizations across a wide range of sectors have been trying to gain a competitive edge by using Lean principles. However, research shows that most companies fail to reap the expected rewards from their Lean efforts. One possible cause for this is the strong emphasis on improving internal processes combined with a limited market orientation that many firms seem to adopt when using Lean.

This research initially *explores* how Lean can influence competitiveness of SMEs and concludes that in today's highly dynamic business environment, organizations adopting Lean need to do more than merely reducing waste in their processes. Additionally, and increasingly, they need to develop a deep understanding of what their customers really value, explore value creation possibilities beyond their boundaries and take deliberate actions to appropriate the created value. Despite the growing research interest in the key concepts of competitiveness including 'customer value', 'value creation' and 'value appropriation' and their strong link to the Lean mantra -'creating value by reducing waste, little theoretical work has been undertaken in Lean research. Adopting an interdisciplinary approach, this research aims to address this conceptual gap. First, the concept of customer value in Lean is *deepened*, i.e. from a prescriptive view - customer value as quality, cost and delivery towards a descriptive view - customer value as an individualistic, holistic and relativistic experience. Second, the value exchange view in Lean is *broadened*, i.e. from focusing primarily on a single stakeholder (customer) towards focusing equally on other key stakeholders (e.g., suppliers, employees), and from a primary emphasis on value creation towards a more balanced emphasis on the creation and appropriation of value. As such, this research aims to extend the Lean framework.

