Improving SME Competitiveness Through Lean: Value Creation and Appropriation Perspective

Erdogan Gulyaz, Jack A.A. van der Veen, Venu Venugopal and Sam Solaimani
Nyenrode Lean Institute, Center for Marketing & SCM,
Nyenrode Business Universiteit, The Netherlands
<e.gulyaz@nyenrode.nl>

Abstract
Lean focuses on creating value while reducing waste. Although frequently overlooked, capturing value is equally important especially for resource-starved SMEs. Drawing on a multidisciplinary literature review of ‘customer value’ and ‘mechanisms of value creation and capture’, this paper aims to develop an integrated framework for Lean value management within SMEs.

Keywords: Lean, SMEs, Customer value

Introduction
SMEs face increasingly dynamic and complex environments: more demanding customers, fragmented markets, global competition, post-recession slow economic growth, emerging new technologies, just to name a few. Based on an SME literature review and subsequent analytical investigation, two major barriers inhibiting SME competitiveness can be identified: (1) resource poverty (time, people, money, skills/knowledge) as an endogenous barrier; and (2) environmental dynamism (high variation in sectoral output and employment, high rate of innovation) as an exogenous barrier. Those challenges coupled with narrow customer base and limited bargaining power within their supply chain, make SMEs more vulnerable to environmental forces compared to their larger counterparts. In such a dynamic environment, many SMEs might seek advantage by creating superior customer value.

Within the concepts of Lean there is a strong focus on process improvement for maximizing customer value (Womack and Jones, 1996). From a value management perspective, however, there seem to be two oversights within the Lean literature. First, ‘value’ in the Lean literature is frequently viewed as an easily identifiable, stable and predictable concept. However such assumptions contradict with the rich marketing research on customer value (Piercy and Morgan, 1997). Second, as Lewis (2000) concludes based on empirical evidence, Lean production alone cannot bring competitive advantage if the firm is unable to appropriate the value that it created. Similarly, many scholars argue that the firms’ value creation (VC) capabilities alone cannot bring advantage if not coupled with the proper value appropriation (VA) mechanisms such as setting the right price, designing the right business model, protecting the novelty and exercising bargaining power (e.g., Teece, 1986, Saloner et al., 2001, Chesbrough and Rosenbloom, 2002).

This paper has two objectives. First, it aims to integrate the diverse and rich views on customer value from different research streams in a coherent way in order to broaden the concept
of customer value within the Lean research. Second, it discusses how Lean thinking may act as a catalyst to enhance both VC and VA mechanisms, especially in the SME context. The literature on applying VC and VA perspective as a frame of reference on Lean management, to the best of our knowledge, so far was non-existent. Since customer value (and as it turns out, VC and VA) are fundamental to the Lean adagio of “create value and remove waste”. A three-way interface between Marketing-Lean management-Resource Based View can therefore be helpful to deepen the understanding of ‘value’.

Following the recommendations of Tranfield et al. (2003) and the literature review taxonomy of Cooper (1988), a systematic literature review was conducted to study the underlying dimensions/mechanisms of ‘customer value’. There is a myriad of literature on customer value due its interdisciplinary nature. Following the Cooper (1988) “exhaustive review with selective citations” coverage scenario, this paper uses Google scholar citations and/or ABS journal ranking to select the studies that have broader impact. The keyword search, screening, snowballing and filtering yielded in total 35 papers for the full review.

The remainder of the paper is organized as follows. Firstly, the multifaceted nature of customer value is elaborated on, after which, it is discussed how Lean can enhance VC by using the lenses of a so-called value exchange model. Subsequently, VA mechanisms that SMEs can focus when applying Lean are discussed, which is followed by a proposed integrated Lean VC-VA framework. Finally, the paper is closed with some conclusions and pointers for further research.

What is value? - Literature Review & Analysis

Although being discussed extensively, at a broad level, the concept of customer value (CV) remains one of the most overused and misused concepts in the management literature (Leszinski and Marn, 1997). Frequently, hammering on ‘adding more value’ or introducing ‘extras’, are not driven by the real needs of customers and at best can offer only a short-term solutions (Ravald and Grönroos, 1996). Hence, gaining an accurate, in-depth understanding of customer value is imperative. There are many competing and/or recurring CV definitions, conceptualizations and typologies in the marketing literature. One of the most cited CV definitions is provided by Zeithaml (1988): "customer perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given". Over the years marketing researchers kept exploring various aspects of value.

Commonalities among the definitions in the selected literature point four key aspects of CV: (1) it is subjective and individual; (2) it has multiple dimensions/abstraction levels (from tangible to intangible attributes); (3) it is experiential, hence longitudinal; and (4) it is dynamic and situational. Due to the space limitation, providing a full list and analysis of all selected 35 papers is beyond the scope of this paper, but they are available upon request.

Integrating the diverse and rich views on customer value from the selected literature, below a so-called customer value matrix (CVM) is proposed (see Figure 1), which is based on two leading concepts:

(i) Net value perspective: the value, as perceived by the customer, is the difference between the perceived benefits (tangible and intangible) and the perceived sacrifice (monetary and non-monetary), (cf., (Zeithaml, 1988, Ravald and Grönroos, 1996, Bowman and Ambrosini, 2000, Eggert and Ulaga, 2002);

![Figure 1- Customer Value Matrix (CVM)](image)

In the various rows (i.e. value perspectives) of the CVM, the following dimensions can be observed:

- **Symbolic value** relates to the beliefs about the product/service and the firm (brand value) as well as relational feelings towards the firm, such as the level of trust. Clearly, the symbolic value satisfies the more psychological needs of customer and is less tangible;
- **Utility value** is about the functionality of product/service (product service attributes) as well as how the product/service is delivered (operational attributes). While the first one focuses on the features of the product/service, the second one generally focuses on the firm’s operational capabilities such as quality, speed, reliability, flexibility, et cetera. As such the utility value is ‘tangible’ and satisfies the more practical needs of the customer;
- **Total cost of ownership**: has two components, namely:
  (i) **Monetary sacrifice** which is the monetary cost incurred by the customer from the start of the search and selection process until the disposal of the product/service (e.g., request for quotation, acquisition price, transaction cost, maintenance cost and disposal cost); and
  (ii) **Non-monetary sacrifice** which include (undesirable) time and effort to acquire and use the product/service (e.g., searching for the desired product in the shop, time spent in queues and having difficulty in using the product).

A customer’s product/service experience passes through three basic phases that, collectively, provide the full picture of the customer experience cycle (Woodall, 2003). These three phases are presented by the columns of the CVM (i.e. the longitudinal perspectives):

- **Pre-purchase**: the customer’s preconceptions about the value whenever the customer contemplates purchase (Woodall, 2003), which might be driven by the brand, the relationship, earlier purchase experience, word of mouth, etc.;
• **Exchange**: customer’s experience during the transaction, which might be influenced by many factors such as the convenience and safety of the transaction environment, friendliness of sales personnel, delivery performance (speed and reliability), etc.

• **Use**: the customer’s experience with the product/service during consumption, including ease of use, effectiveness of product features, maintenance, disposal, etc.

In Kim and Mauborgne (2000) a similar model, the *buyer utility map*, has been proposed to help managers to create new product ideas thinking through the buyer’s experience cycle. Note that the CVD model differs from the buyer utility map in two ways: Firstly the CVD doesn’t only consider utility value but also symbolic and sacrifice value and secondly it also considers pre-purchase experience.

The CVM presented above can be used by SME managers to identify the full range of value propositions by outlining both in positive side (benefits) and negatives side (sacrifices). The key notion here is that the more number of cells are unlocked, the deeper insights can be gained from this analysis. Considering the subjective and dynamic aspect of CV, SME managers should develop CVM for each customer/customer segment and periodically monitor and revise the CVM.

**How is value created? - Value Exchange Perspective**

After the various sources for possible customer value are distinguished by the CVM as discussed in the previous section, the next step would be to actually creating that value. For organizations, VC can be framed as combining the acquired use values or resources (e.g., raw materials from suppliers, machines, buildings) and transforming them through the actions of organizational members to a greater level of perceived value for customers (Bowman and Ambrosini, 2000). A company can outperform rivals only if it can establish a sustainable difference by delivering greater value to customers or comparable value at a lower cost, or doing both (Porter, 1996). Simply put, a firm creates superior customer value when it increases the perceived benefits and/or reduces the customer’s perceived sacrifice better than its competitors.

Elaborating on existing value exchange models (e.g., Brandenburger and Stuart, 1996, Khalifa, 2004) and applying Lean perspectives, below a so-called *Lean value exchange model* is proposed for demonstrating how (net) total value can be increased (see Figure 2). Three key economic actors in the value exchange model are: (1) all the resource suppliers, including material, labor (employees) and capital suppliers; (2) the focus firm; and (3) the customers of the firm.

*Total (gross) value* is the value created within the supply chain through exchange among these three entities. More precisely, total value is equal to customer perceived benefits minus the opportunity cost of all resource suppliers. Here the term opportunity cost should be interpreted as the cost incurred by the suppliers in a relative way, i.e. it is the loss of potential gain from engaging in other alternatives since it was decided to deliver the products or service to the firm. In Figure 2, total value is indicated by the right most bar.

*Net total value* is defined as the total value left after subtracting the sacrifices of any of the three supply chain entities, which do not benefit another entity. In Figure 2, the net total value is indicated by the non-shaded areas in the right most bar. Note that net total value consists of three parts, namely customer surplus, producer surplus and supplier surplus. Obviously, from the Lean perspective, the wastes in the value system (indicated by the shaded areas in the right most bar) are the targets for elimination.
In essence, there are five Lean levers to create net total value (the numbers below are indicated in Figure 2):

1. *Increase perceived benefits*: Looking from the product development perspective, Lean emphasizes front loading in R&D process to thoroughly explore alternative customer solutions and avoid premature convergence on the wrong ones (Liker and Morgan, 2006). Providing exactly what the customer wants, and when and where it’s wanted (not more, not less) (Womack and Jones, 2005), is the traditional Lean approach towards reducing overproduction and creating the exact needed value, specifically the ‘utility value’ in the CVM. The main assumption of this approach is that what the customer wants can be identified by the firm (or by the customer who then tells the firm). As argued above, SMEs need more customer-oriented processes and tools such as the CVM to capture the full spectrum of customer value.

2. *Reduce perceived non-monetary sacrifice*: Understanding the ‘full customer journey’ can reduce undesired customer time and hassle. Drawing a ‘lean consumption map’ as proposed by Womack and Jones (2005) can help SMEs to visualize the entire journey of customer and identify the non-monetary sacrifices of the customer.

3. *Reduce perceived consumption cost*: Reduce repair and unnecessary maintenance cost through effective quality management.

4. *Reduce waste in processes*: Continuously identify and reduce waste in all the three categories: ‘muda’ (non-value adding activities), ‘muri’ (overburden), and ‘mura’ (unevenness).

5. *Reduce opportunity cost*: Enhance the (multi-purpose) use of resources, thereby increase process flow and productivity, which can result in lower unit cost.

While the points 3, 4 and 5 are frequently covered in the Lean manufacturing literature, point 2 emerged relatively new within the Lean service literature, which focuses on the customer’s
consumption (Womack and Jones, 2005). Furthermore, some aspects of the point 1 are discussed in the Lean product development literature. Note that any improvement attempt on the points 1-4 can result in a cost increase (which is indicated by ‘c’ in the right most bar in Figure 2). Clearly, this would only lead to increased (net) total value when the additional perceived benefits outweigh the additional (opportunity) cost.

Upon reviewing the above list, two important observations emerge, which SMEs can leverage. First, it turns out that reducing unnecessary activities/waste can be an effective approach to creating a higher net total value, see points 2-4. Hence, instead of adding new product features that may not be driven by actual customer needs, SMEs should continuously search for new problems/wastes (as Lean suggests) within the entire total value creation process. Second, creating total net value requires a joint supply chain effort; it only works when the firm considers CV as only one part of the total net value created in the three-entity supply chain.

**How is value appropriated? - Three perspectives on VA**

Increasing total net value is necessary but not sufficient to achieve a competitive advantage. SMEs also need VA mechanisms to capture their portion of the created total net value. Mizik and Jacobson (2003) elucidate that VC influences the potential magnitude of the advantage whereas VA influences the amount of the advantage that can be captured and the length of time the advantage persists. Based on a case study of three automotive OEM suppliers, Lewis (2000) observed that smaller firms, even with strong Lean production performance, cannot appropriate the productivity savings when dominant players (OEMs) use their bargaining power, which suggests that benefits from Lean can easily flow to the powerful players. However, as illustrated with one case in the same study, a small firm can manage to appropriate value by building up its own bargaining power through enhancing its technical and production competences. These findings suggest that SMEs must carefully consider their VA regime before allocating their limited resources to be Lean.

This section discusses three key research streams on VA, each of which emphasizes different VA mechanisms:
(i) **Resource based view (RBV):** Within the RBV there are two leading concepts that explain which supply chain entities capture the value that is created, namely *competition* and *isolating mechanisms* (Lepak et al., 2007). The intensity of the competition can determine how the created value slips away from the originator to the competitors, suppliers and customers. Hence, firms are better off if they limit competition. This can be done by raising so-called isolating mechanisms, which prevent competitors to imitate the value-creating task of the firm (Lepak et al., 2007). According to RBV, *valuable, rare, inimitable* and *non-substitutable* resources (Barney, 1991) can serve as isolating mechanisms. These include the firm’s brand, copyrights, patents, unique technology, unique production capabilities, etc. Note that all such isolating mechanisms improve the ‘uniqueness’ of the firm’s resources and as such increase the ‘bargaining power’ of the firm. That way, the firm can increase its *share* (size of the slice) and depending on its ability to sustain/renew this advantage, it can maintain its share. Hence, two dimensions of VA emerge in this discussion: *share* and *duration*, which is in agreement with Mizik and Jacobson (2003)’s explanation of VA.
(ii) **Business model innovation perspective:** In order to capture value from innovation, firms need to find the right ‘architecture of revenue’, i.e. how a customer will pay, how much to charge and how the value will be appropriated among the supply chain players (Chesbrough and
Rosenbloom, 2002). Cataloging recent innovations in value capture, Michel (2014) proposes five avenues that firms can explore to increase VA, namely: changing the price-setting mechanism; changing the payer; changing the price carrier; changing the timing; and changing the segment. 

(iii) **Relational view:** The relational view extends the RBV by incorporating network resources and emphasizes the common benefits jointly generated in an exchange relationship (alliance/collaboration) that cannot be generated independently (Dyer and Singh, 1998). Building on this notion, Lavie (2006) identifies five VA factors determining the appropriation of the common benefits among the partners, namely: (1) relative absorptive capacity: absorptive capacity is defined as learning capability that measures a firm’s ability to understand new external knowledge, assimilate, and apply it to commercial ends (Cohen and Levinthal, 1990). The better the absorptive capacity of the focal firm relative to its partners, the higher the proportion of VA will be; (2) relative scale and scope of resources: a smaller scale and the focused scope of resources can provide an advantage to the firm when the resources are complementary and idiosyncratic, which has been discussed in RBV section above; (3) contractual agreement: a ‘favorable’ contract may provide an exclusive access to network resources and/or relatively large share of returns; (4) relative opportunistic behavior: as the contracts are generally incomplete, trust-building initiatives deter potential opportunistic behavior; and (5) relative bargaining power: the stronger the bargaining power of the focal firm relative to its partners, the higher the proportion of VA will be.

Among these three VA perspectives, this paper focuses on the relational view, which provides the most appropriate lenses to discuss capturing value from a Lean perspective. Recall that Lean includes a collaborative view on supply chain; for example the seminal work of Shah and Ward (2007) identifies ten factors representing Lean production, four of which are related to supplier and customer involvement (remaining six address issues internal to the firm). Obviously, the depth of relationship with suppliers and customers can go from basic forms such as sharing only production and sales data to more advanced forms such as partnerships and joint ventures. In order to focus the discussion, in this paper a more advanced form of collaboration with Lean is assumed.

**Towards an Integrated Framework: Lean VC-VA**

From a conceptual perspective, VC and VA in a collaborative relationship are two sides of the same coin (Wagner et al., 2010). While value creation is about making the value pie bigger, value appropriation is about claiming the slice of the pie, which is materialized by share and duration. Obviously, the best approach is to combine VC with VA; when the pie gets larger through VC, the VA mechanisms can assure that each supply chain player involved can get a larger share compared to the non-collaborative setting.

Collaboration with and engagement from suppliers and buyers can help resource starved SMEs enhance both their VC and VA simultaneously. Moreover, by bringing critical and scarce resources to the relationship, SMEs can be an attractive partner in the collaboration effort and be able to claim a larger slice of the bigger pie in the negotiations (Dyer et al., 2008). From Lean perspective, this might be achieved through, for instance, unmatched quality and speed. Although contractual agreements determine the distribution of the bigger pie, opportunistic behaviors may arise to capture more value, which presumably reduces relational satisfaction and chances of future collaborations. Such competitive nature of VA can be reduced through open communication and building relational trust (Wagner et al., 2010). Finally, taking advantage of the abundant learning opportunities in collaborative relations, SMEs can improve their absorptive capacity.
Combining the key points from the above discussion, this research suggests that there are three VA mechanisms that can help SMEs capture value in a collaborative relation:

1. **Uniqueness**: by bringing more valuable, rare, inimitable and non-substitutable resources to the collaborative effort than other parties do, SMEs can leverage their unique position to attract partners and negotiate better terms.

2. **Relationships**: doing one or more of the following three:
   - (i) Increasing customer retention by consistently creating superior value. For example, Reichheld (1994) reports that about 5% increase in customer retention (or 5% decrease in customer defection rate) leads to between 25-100% increase in profits and the results are consistent across various industries;
   - (ii) Accessing suppliers and network partners' complementary assets (e.g., distribution channels, technology, and equipment) by building and maintaining a relational trust;
   - (iii) Using employees to their fullest potential; empowering them to build strong relationship with suppliers and customers. This would result in employee satisfaction and retention, thereby reduce onboarding cost and improved productivity and flexibility, thereby reduce unit cost.

3. **Learning**: co-creating products/services with customers and suppliers, and relentlessly searching for new problems to solve; devoting greater resources (from top to bottom) in identifying, assimilating and applying external knowledge in collaboration. **Outcome**: improving current value offerings; creating new products and entering in new markets.

Combining the propositions from section 1, 2, and 3, an integrated Lean VC-VA framework for SMEs is proposed (see figure 3). The aforementioned two barriers inhibiting SME competitiveness, resource poverty and dynamic environments, can be addressed through Lean as follows. SMEs can engage internal resources as well as resources of customers and suppliers to jointly create superior customer value more efficiently and effectively. Such engagement combined with the learning environment enables SMEs to sense the changes in upstream and downstream, and to adapt the changing environment. The framework suggests that competitive advantage can be achieved through creating superior customer value and balancing various forms of VA mechanisms. Competitive advantage in turn results in superior financial performance, which can further improve processes and people skills in SMEs.

![Figure 3- Integrated Lean VC-VA Framework](image-url)
Conclusions

Although in a preliminary stage, from a theoretical perspective, this paper contributes to the limited body of knowledge on Lean and SMEs, and offers a new perspective on how Lean can help SMEs in creating a competitive advantage. Three models are proposed based on theories from multiple research streams including customer value, Lean, RBV and relational view.

From a practical perspective, the CVM can help SMEs broaden their view on customer value. The Lean value exchange model shows that waste reduction can actually enhance customer value when it is considered as a joint effort between the firm, its suppliers and it buyers. Taking this one step further, it is demonstrated through the Integrated Lean VC-VA framework that such joint efforts can indeed lead to VC and VA for the SME simultaneously which in turn would lead to a competitive advantage. Note that the proposed approach indeed is well suited for SMEs that are, by nature, more inclined to build personal supply chain relationships and engagement. It is also important to see that all perspectives of Lean (long term, systems view, process/waste focus, engagement and learning) are essential to implement the proposed VC and VA activities in SMEs.

There are several limitations to this research. Firstly, the proposed models in this paper are considered as new insights rather than end products. Secondly, a rigorous empirical validation is needed to thoroughly evaluate the proposed models. In this regard, plans are underway for a multiple case study research.

Bibliography


