

VALUE CO-CREATION AS PRECONDITION FOR THE DEVELOPMENT OF A SERVICE BUSINESS MODEL CANVAS

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ABSTRACT. Environmental changes such as increasing competitive pressure and rising customer power force companies to rethink their way of doing business and to implement a service-oriented business logic. As a result, companies more and more aim at offering solutions instead of selling products in order to meet customer demands more effectively. This transition from a goods-oriented to a service-oriented logic depicts a fundamental change in the mental model underlying the business. Therefore, a redesign of a company's business model is necessary. This paper analyzes the influence of a product-service transition on the business model canvas against the background of service-dominant logic. The paper analyzes how a service-dominant business logic affects the design of the nine building blocks of the business model canvas. Special emphasis is given to the aspect of value co-creation and the need to integrate customers as key partners in value creation processes. The result of this conceptual paper is a set of propositions that may serve as a basis for future empirical research.

Keywords: *business model canvas, service-dominant logic, value co-creation, customer integration*

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1. Introduction

Companies recently face the challenge to cope with a business environment that is in a constant flux; global competition is increasing,

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product life cycles are becoming shorter and customer needs are changing frequently (Teece, 2010; Gummesson, 2007). Especially the rise of new information and communication technology (ICT) puts further pressure on companies to adapt their strategies to the changing business environment. On the one hand, ICT has a major impact on manufacturing processes and product innovation (Osterwalder and Pigneur, 2004). On the other hand, ICT also strongly influence customer behaviour (Prahalad and Ramaswamy, 2004). Nowadays, suppliers as well as customers benefit from a widespread access to information and enhanced communication abilities. However, ICT developments especially support a shift of power from suppliers to customers as they contribute to making product and service offerings more transparent and comparable (Teece, 2010; Kucuk and Krishnamurthy, 2007). Customers more and more claim voice related to product- and especially service-design (Chesbrough and Spohrer, 2006). Furthermore, they do not hesitate to share and discuss their experiences with products and services with others within widespread customer communities. Therefore, markets increasingly develop into forums where customers actively participate in value creation processes (Prahalad and Ramaswamy, 2004; 2002).

Offering standardized goods on the mass market is no longer a suitable option for many suppliers as customers increasingly seek customized solutions (Jaakkola and Hakanen, 2013; Moeller, 2008). As a consequence, even traditional manufacturing companies more and more follow recommendations of management literature to move downstream toward the customer (Wise and Baumgartner, 1999). In order to escape the menace of commoditization and to meet customer demand more effectively, they extend their product portfolios by adding services to their core product offerings (Neu and Brown, 2006; Gebauer et al., 2005; Oliva and Kallenberg, 2003). In doing so, companies are forced to adjust their basic business logic as not only the tangible product itself, but to a growing extent also unbundled service offerings that are tailored to customer needs considerably contribute to revenues and following profitability of a company (Osterwalder and Pigneur, 2010). Hence, a company has to develop a more customer-centric mindset to be able to deliver solutions to its customers (Kowalkowski, 2010; Galbraith, 2002; Ramirez, 1999). In this context, Vargo and Lusch (2008a; 2004) argue that companies need to overcome the old, mainly goods-dominant business logic (GDL) (Mill, 1929; Say, 1821) and to replace it by a service-dominant

logic (SDL) (see also Vargo and Morgan, 2005). According to SDL, value is no longer created solely by the supplier. In contrast, an integration of the customer into the value creation process and thus a joint creation of value is a necessary precondition that enables companies to meet customer demands (Grönroos, 2011; Vargo and Lusch, 2008a; 2004).

In addition to redefining value propositions and value delivery processes, a company moving towards a service-oriented business logic has to think about how to capture value from their new offerings (Teece, 2010). Otherwise, companies risk being trapped in the so called service paradox (Gebauer et al., 2005). The service paradox is characterized by an increase of costs companies have to spend for additional service offerings that is not accompanied by corresponding higher revenues. As a consequence, a company's whole value creation network has to be analyzed (Ng et al., 2012). This means that companies changing their business logic need to consider not only value creation during production processes within their own value chain, but also the value that is realized during the consumption process of the customer (Grönroos, 2008; Vargo and Lusch, 2004). To consider internal as well as external value creation processes, the business model is a suitable unit of analysis. Business models not only explain internal activities of the focal company, but also mirror activities performed by suppliers and customers (Zott et al., 2011). Following, companies need to adjust their business models to new market conditions and to the transformed business logic to be able to exploit the potential of services successfully. Nevertheless, it is difficult for companies do deal with this need for change as business models are quite fuzzy constructs and literature does up to now not provide a common understanding of business models and its basic elements (Zott et al., 2011).

The purpose of this paper is to employ a SDL perspective on the transition process from a goods-focused to a service-focused business model. To date researchers very often only describe specific service-focused business models (e.g. Johnson et al., 2008; Wise and Baumgartner, 1999). However, only a few studies explicitly discuss the transition to a service business model with a particular focus on value co-creation and customer integration (e.g. Frankenberger et al., 2013; Storbacka et al., 2013; Kindström, 2010, Nenonen and Storbacka, 2010). In addition, these studies rather focus on specific aspects of service business models, but do not integrate business model concepts and SDL in a systematic way. Furthermore, it is necessary to address the influence of

a product-service transition on particular elements of a business model. Understanding the elements that are relevant for a specific business logic and analyzing their relationships is essential for companies to identify the right measures to implement the new business model (Osterwalder and Pigneur, 2004). Therefore, this paper aims at analyzing the necessary changes related to the transition from a product-oriented to a service-oriented business model. The basic research questions are: *Which elements of traditional holistic goods-dominant business models have to be changed in which way to upgrade these business models to service business models? How should a service-oriented business model be designed to facilitate customer integration and value co-creation?*

This paper contributes to business model literature and SDL literature by integrating the core elements of SDL into the business model canvas originally developed by Osterwalder and Pigneur (2010). In doing so, the paper provides a framework for the analysis of the effects of a growing service orientation on the way how companies do business. Furthermore, the paper gives first insights how to redesign business model building blocks to match the requirements of a service-oriented business logic.

2. Theoretical Background

Before discussing the need to integrate service aspects into business models in detail, a clarification of basic concepts and a brief explanation of the conceptual framework of this paper are necessary. Therefore, this chapter provides insights into SDL and gives information on the basic understanding of business models employed in this paper.

Service-dominant Logic

More and more manufacturing companies follow the suggestion given by management literature to shift the focus from producing goods towards providing solutions by integrating services in their offerings (Gebauer, 2008; Oliva and Kallenberg, 2003, Wise and Baumgartner, 1999). One benefit for companies refocusing on service activities is rooted in the fact that it is highly difficult to imitate intangible aspects of services. Furthermore, adding services to core products can be seen as a differentiation strategy which aims at attracting new customers and enhancing retention of the existing customer base (Matthysen and

Vandenbempt, 2008; Bruhn and Georgi, 2006). Additionally, the recent progress in ICT allows for an increasing customer participation in value creation processes as customization of products becomes faster and cheaper (Prahalad and Ramaswamy, 2002). As a consequence, the traditional distinction between tangible goods and intangible services becomes more and more blurred (Gummesson, 2007; Grönroos, 2006; Lovelock and Gummesson, 2004). Consequentially, companies need to develop new ways of value creation by continuously redesigning their relationships with customers and other business partners (Normann and Ramirez, 1993).

In this paper, the concept of SDL introduced by Vargo and Lusch (2004) is employed to overcome the somewhat outdated differentiation between products and services. Furthermore, SDL allows for looking at the transition of companies from being a producer to becoming a service provider from a new perspective. In contrast to the old GDL, SDL does not differentiate between tangible and intangible outputs, but defines service (singular) as *'...the application of specialized competences [...] through deeds, processes, and performances for the benefit of another entity or the entity itself.'* (Vargo and Lusch, 2004: 2). This definition reflects the necessity to employ a completely new way of doing business to be able to successfully implement service-oriented strategies (Vargo and Lusch, 2008b). While GDL focuses on the production output, SDL regards service as the fundamental base of exchange with goods merely being a distribution mechanism for service provision (Vargo and Lusch, 2008a; 2004)

Basically, the concept of SDL rests on ten foundational premises (Vargo and Lusch, 2008a; 2006), which can be consolidated into three core elements that enhance the general understanding of service explained above. First of all, the concept of *value-in-context* replaces the old GDL concept of value-in-exchange (Vargo et al., 2010; Vargo, 2009). This means that companies cannot deliver value, but only offer value propositions which are evaluated exclusively by the beneficiary (the customer). Hence, companies need to understand the value of the customers' experience in using an offering instead of evaluating value according to the production process (Prahalad and Ramaswamy, 2004; Vargo and Lusch, 2004). In this context, SDL emphasizes the importance of collaborative processes resulting in a joint creation of value. The customer is no longer an exogenous variable, but integrated in a company's value creation process (Vargo and Lusch, 2008b). In turn, the company also

interacts with the customer's value creation system. Therefore, companies' and customers' service systems form a network by multilaterally contributing to the value creation process resulting in at least temporal cooperation (Grönroos, 2011; Lusch et al., 2010; Maglio et al., 2009). As a consequence, value is always co-created and bound to the context of the network in which it arises.

This *network perspective* is the second core element of SDL and supersedes the old GDL-related concept of the value chain. Against this background, a value network is defined as '*...a spontaneously sensing and responding spatial and temporal structure of largely loosely coupled value proposing social and economic actors interacting through institutions and technology, to: (1) co-produce service offerings, (2) exchange service offerings, and (3) co-create value...*' (Lusch et al., 2010: 20). Again, this sense and respond logic highlights the need to integrate the customer base and its resources into the value creation process (Lusch and Webster, 2011). On the one hand, a deep understanding of customer needs is required from a company in order to develop adequate value propositions (Payne et al., 2008). On the other hand, integrating a customer's own network base can also extend the addressable knowledge base of accompany considerably (Prahalad and Ramaswamy, 2000).

The last main element is the specific *resource perspective* adopted by SDL. In this context, two types of resources have to be distinguished: operand (mainly tangible) resources and operant resources, meaning resources which produce an effect upon other resources. Operant resources are considered primary and superior to operand resources as they are usually dynamic and infinite (Vargo and Lusch, 2004; Constantin and Lusch, 1994). Therefore, they are more adaptive and less imitable than operand resources. Especially in dynamic environments adaptability, agility and constant learning are essential for companies to meet complex customer needs (Lusch et al., 2010). In this context, empowered customers are participating actively in value creation processes and thus become a new source of operant resources. Companies can benefit from the contribution of their customers if they are able to embrace the knowledge and skills customers possess and support customers' willingness to share experiences and to learn from the company (Prahalad and Ramaswamy, 2000).

To date, SDL only provides some insights into how the customer's service system should be integrated so that companies can

benefit from this new network configuration. Lusch et al. (2010) argue that the different members of value networks are linked by three major elements: (1) their competences, which are used to provide service for the other actors; (2) their collaborative relationships, which are based on rather non-coercive, informal governance mechanisms; and (3) information shared through common standards and protocols. However, the literature on SDL does not provide satisfying information on how the co-creation process exactly works. The development of value propositions is explained as a learning process based on market-related sources of information such as financial metrics (Lusch et al., 2010; Lusch et al., 2008). This market-based learning mechanism does not consider the need to integrate the customers' network into the value network to jointly create value. Further research is needed in order to deepen the understanding on activities and structures which enable value co-creation processes. Moreover, since the concept of SDL is not entirely theoretically founded and has not reached the state of a paradigm yet, a deeper analysis of the core elements is essential. Additionally, the concept is criticized because of its limited managerial implications (Achrol and Kotler, 2006; Ballantyne and Varey, 2006). Therefore, a more practice-oriented perspective on the process of value co-creation has to be taken into account. Nevertheless, research on service business model development can be strengthened by SDL's particular definition of service and its insights on value creation networks. Vice versa, illustrating the customer integration aspect within the business model can also support the development of SDL by clarifying the co-creation mechanisms.

Basics of Business Models

Since the mid-1990s, practitioners as well as researchers increasingly place emphasis on the concept of business models. Especially in times of increasing competition and severe pressure on profit margins, innovating the business model becomes a less time-consuming and less expensive alternative to product or process innovations (Amit and Zott, 2012; Chesbrough, 2010; Teece, 2010; Margretta, 2002). The product-service transition can be seen as a trigger of business model innovation. For example, Wise and Baumgartner (1999) identify four basic business model types that describe how companies integrate service offerings in their product portfolios.

However, they do not explain the underlying processes of business model innovations in general, nor do they draw on the business model as a unit of analysis in particular.

Despite of the growing attention on business models in scientific research in the past 20 years, there is still a lack of definitional clarity (Zott et al., 2011). In general, business models can be understood as a blueprint of economic actions of companies (Osterwalder et al., 2005). They describe mechanisms to create, deliver and capture value (e.g. Osterwalder and Pigneur, 2010; Teece, 2010; Chesbrough, 2007; Afuah and Tucci, 2001). However, recent research increasingly emphasizes the value creation aspect of business models. Moreover, network relations and collaborative value creation processes are considered in particular, even though the traditional perspective of value creation through the focal company does still prevail (Zott et al., 2011). In the context of this paper, business models are defined according to Osterwalder (2004: 15) as *'...a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.'*

Similar to other researchers (e.g. Teece, 2010; Amit and Zott, 2001; Chesbrough and Rosenbaum, 2000; Timmers, 1998), Osterwalder (2004) conceptualizes a meta-model that includes specific business model elements (see also Osterwalder and Pigneur, 2010; 2004). However, the advantage of Osterwalder's (2004) understanding of the business model concept is that its definition already applies a network perspective on value creation. The main elements of Osterwalder's (2004) conceptualization – the so called four main pillars – are (1) product (or product innovation), (2) customer interface, (3) infrastructure management and (4) financials. Thus, these pillars describe a company's offerings, its target group, the way how the business operates and the profit a company aims to achieve. In order to make the business model work, the four pillars need to be aligned with external forces such as competition, environmental change or customer demand (Osterwalder and Pigneur, 2004). Another point in favor of this model is that the four pillars of the business model are further decomposed into nine business model building blocks: value proposition, customer relationships, customer segments, channels, key

partners, key activities, key resources as well as cost and revenue structure (for a detailed description see table 1).

Table1.*Business model building blocks*

Business model pillar	Business model building block	Description
<i>Product</i>	Value proposition	Describes the bundle of products and services that create value for a specific customer segment
	Customer relationships	Describes the types of relationships a company establishes with specific customer segments
<i>Customer interface</i>	Customer segments	Defines the different groups of people or organizations an enterprise aims to reach and serve
	Channels	Describes how a company communicates with and reaches its customer segments to deliver value propositions
<i>Infrastructure management</i>	Key partners	Describes the network of suppliers and partners that make the business model work
	Key activities	Describes the most important things a company must do to make a business model work
	Key resources	Describes the most important assets required to make a business model work
<i>Financial aspects</i>	Cost structure	Describes all costs incurred to operate a business model
	Revenue structure	Represents the cash a company generates from each customer segment

Source: Own illustration adapted from Osterwalder and Pigneur, 2010; Osterwalder et al., 2005.

This detailed fragmentation of the meta-model allows for an in-depth description of a company's business model. This, in turn, helps managers to generate a common understanding of the model and to identify the most important drivers of their business model (Osterwalder and Pigneur, 2004). Most important, the single building blocks are not independent. They are interconnected and dependent on each other (see figure 1) (Osterwalder and Pigneur, 2004; Osterwalder, 2004). Changing one element leads inevitably to the necessity of adjusting other elements. Furthermore, By illustrating and mapping all building blocks and their interrelations, changes in the business model can be easily illustrated which makes the evolution of new strategic alternatives apparent (Osterwalder and Pigneur, 2010; 2004).

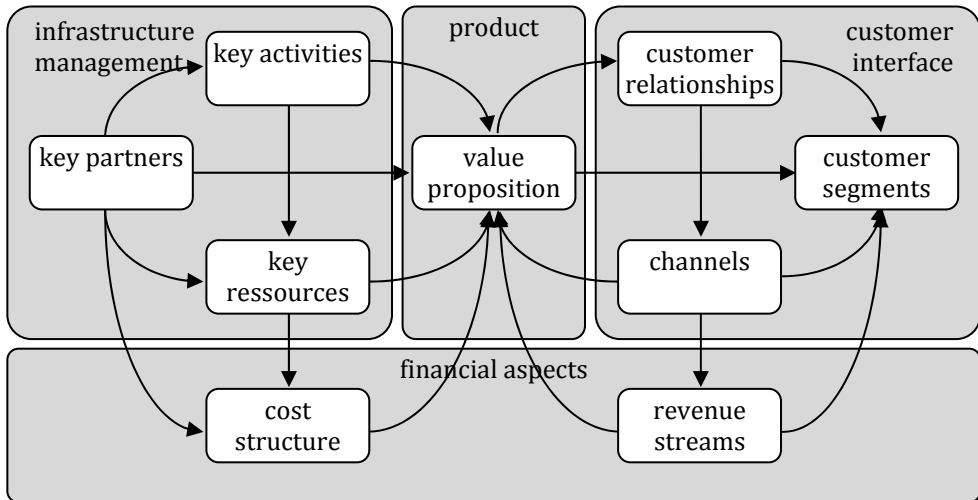


Figure 1. Business model building blocks and their interrelationships

Source: Own illustration based on Osterwalder and Pigneur, 2010; 2004.

The original meta-model (Osterwalder, 2004; Osterwalder and Pigneur, 2004) was developed with a particular focus on e-businesses. However, Osterwalder and Pigneur (2010) updated the model later on in cooperation with over 400 practitioners. The goal was to create a meta-model – the so called business model canvas – that allows managers to *'think through the business model'* (Osterwalder and Pigneur, 2010: 15). Furthermore, the business model canvas was applied and tested in a multitude of different companies and various industries. Thus, another main advantage of the business model canvas is that it can generally be adapted to match diverse business settings (Osterwalder and Pigneur, 2010).

The need to improve a business model is on the one hand a coercive reaction to changes in a company's business environment. On the other hand, managers can use a structured approach to proactively redesign specific business model building blocks. In this context, the reinvention of specific business model elements to deliver value in a new way (Lindgardt et al., 2009), or more general, the transition from an old business model to a new one (Osterwalder et al., 2005), is referred to as business model innovation. By analyzing the necessity to change the above mentioned business model building blocks according to SDL, such a structured approach to business model innovation can be pursued. To implement SDL these building blocks need to be aligned with the

core elements of SDL. In doing so, necessary changes in the business model triggered by an increasing service-orientation of a company can be identified and analyzed in detail.

Although the meta-model by Osterwalder and Pigneur (2010; 2004) has various advantages compared to alternative business model concepts, its development was mainly influenced by a rather goods-dominant thinking disregarding the need to co-create value with customers. Taking a closer look at the description of the single components, it has to be mentioned that not only the wording (e.g. deliver value to customers instead of creating value with customers) but also the basic understanding of exchange mechanisms (e.g. the role of partnerships in value chains instead of the integration of various service systems to one value network) is highly related to GDL. At first glance, some concepts within the customer relationship block of the more recently developed business model canvas (Osterwalder and Pigneur, 2010) could be related to SDL. For example they discuss co-creation or the utilization of customer communities as an element within the customer relationship block. However, a closer examination shows that co-creation is rather described as a type of customer-company interaction or a part of customer relationship management, which suggests that the general underlying logic does not fully match SDL thinking.

Role of Value Co-creation in Business Models

The transition from a product-oriented to a service-oriented business logic requires a holistic change in the mental model underlying the whole business. As a consequence, even meta-models of the business model concept need to be adapted to adhere to the basic tenets of SDL. Against this background, it is necessary to examine adjustments that have to be made to the meta-model before analyzing the influence of SDL – and especially the aspect of value co-creation – on the business model building blocks and their interrelations.

Integrating Service-dominant Logic into the Business Model Canvas

A shift in the dominant logic of a company (Prahalad and Bettis, 1995) goes along with a need for considerable changes within the whole company (Grönroos, 2006). Especially the transition from a

product- to a service-oriented business logic causes considerable managerial challenges (Oliva and Kallenberg, 2003). First of all, service business models tend to be more complex compared to mainly goods-focused business models as the traditional product focus is developed into a process focus of value co-creation (Lusch et al., 2010). In this context, companies actively need to facilitate the joint creation of value (Grönroos, 2011) by establishing an infrastructure which allows for customer integration in value creation processes (Vargo et al., 2008). Second, companies need to develop specific competences to adjust the customer interface adequately in order to recognize and fulfil changing customer needs (Karpen et al., 2012; Lusch et al., 2007). Third, customer relationships have to be redefined to live up to the network perspective of SDL. Summing up, managing the value creation network is vital to organizational survival of service-oriented companies. Even from a GDL perspective, the integration of the customer as an external factor into the service process has always been an essential prerequisite of service provision (Bruhn and Georgi, 2006). SDL intensifies the importance of the customer relationship as it forces a company to jointly create value with its customers. Therefore, transaction relationships need to be replaced by newly developed value creation partnerships (Lusch et al., 2010). This paradigm shift of the business logic results in the need to change the company's activity system – the business model – fundamentally (Ng et al., 2012).

Many business model conceptualizations already indicate an interplay between company-internal structures and processes with external network partners and customers (e.g. Osterwalder and Pigneur, 2010; 2004; Morris, et al., 2005; Chesbrough and Rosenblohm, 2002). Furthermore, researchers often emphasize a customer-centric perspective on business models or even address value co-creation (Frankenberger et al., 2013). Additionally, open business models focus on external resources in order to facilitate value creation processes (e.g. Chesbrough, 2007; 2006). However, when speaking about customer centricity scholars usually refer to strategies such as customer orientation or relationship management which were developed based on GDL (Vargo and Lusch, 2008b). Open business models on the other hand usually focus on opening research and development or intellectual property management to external contributors and do not include long-term partnerships in any other ways (Frankenberger et al., 2013). Hence, instead of a one-sided

perspective (supplier focus or customer focus), a balanced centrality including all members of the value network has to be considered in the business model conceptualization (Gummesson, 2008).

As discussed before, the business model canvas (Osterwalder and Pigneur, 2010) does not explicitly illustrate value co-creation processes according to SDL. One way to further emphasize the co-creation aspect within the business model would be to change the product related block of value proposition to a process related aspect of value co-creation. However, altering the meta-models building blocks is not helpful. First, changing one building block would result in changes of all other building blocks. Nevertheless, the customer interface would still be inadequate in regard to the core elements of SDL, as customer segments would still be regarded as 'targets' instead of partners for value co-creation. In order to fulfill SDL related requirements, a more explicit integration of customers is strongly needed. Second, from a company's perspective the focus on value propositions is still important. Even though companies are – according to SDL – not able to create value by themselves, they need to make value propositions in order to initiate value co-creation processes with their customers.

Following, these value propositions are exclusively evaluated by the customer (Vargo and Lusch 2008a, 2004). As a consequence value is jointly created by all actors within the value networks through exchange of resources and knowledge. These networks are viewed as open systems which allow for constant learning and adaption to a changing environment (Lusch et al., 2010). Osterwalder and Pigneur's (2004) meta-model does not account for such close relationships between the focal company and the customer, nor does the business model canvas (Osterwalder and Pigneur, 2010) do so. To date, feedback from the customer base to the company is only indicated by the link between the revenue flows and the value proposition block. In general, this consideration is in line with the learning mechanism via financial metrics proposed by Lusch et al. (2008). However, as stated before, a more direct transfer of information and knowledge is necessary to successfully implement a service-dominant business logic. To facilitate resource transfers from customers to the focal company, it is necessary to perceive customers not only as 'targets', but as key partners. According to Osterwalder and Pigneur (2010; 2004), key partners can be used to acquire particular resources. By linking the customer segments to the

key partners building block and thus creating an indirect feedback loop from the value proposition block back to the infrastructure management pillar, it is possible to include the co-creation aspect into the model while still focusing on the company perspective of value proposition (see figure 2).

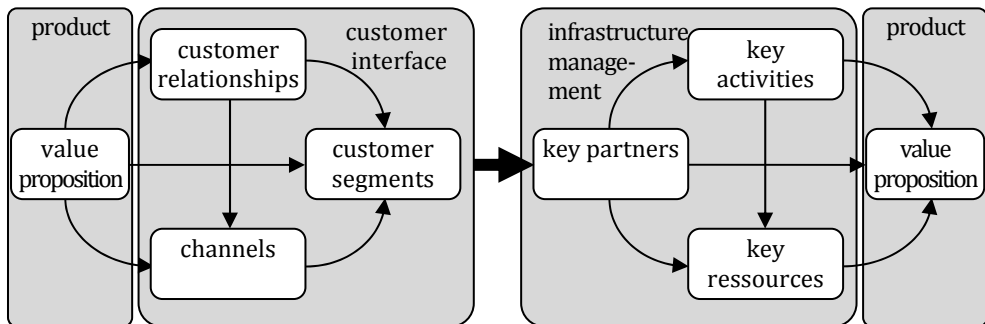


Figure 2. Interrelationship between customer interface and infrastructure management

Source: Own illustration.

3. Development of Research Propositions

Proactively changing a business model requires a structured approach. Mapping and linking the underlying processes and elements by using a meta-model and changing each one of them is a suitable course of action (Scott-Kemmis, 2012; Osterwalder, 2004). Taking a look at the meta-model, the transition from a goods-oriented to a service-oriented focus might influence each single business model building block and companies changing their business models toward service-oriented solutions need to make changes in multiple dimensions as various business model elements are interrelated and interdependent (Storbacka et al., 2013).

Value proposition. A value proposition includes quantitative (e.g. price) as well as qualitative elements (e.g. customer experience) (Osterwalder and Pigneur, 2010). The definition of a particular value proposition of service-oriented company as well as transition paths from a goods orientation to a service orientation will vary depending on the company's context-specific strategy (Storbacka et al., 2013). However, to implement SDL accordingly, companies need to understand that value propositions based on SDL are rather value-supporting processes. Not only the exchange of goods and service is of importance, but also the

exchange of information and other operant resources (Lusch et al., 2010). Furthermore, customer-company interactions are necessary to enable customers to create value-in-context in their everyday practice (Grönroos, 2008). Additionally, companies need to be aware of the fact that they serve as performance providers or problem solvers and therefore have to develop a deep understanding of a customer's needs (Storbacka et al., 2013). This is not only true in B2B aspects, where intense relationships between supplier and customer can be observed frequently (Ballantyne, 2004). A stronger focus on customers' experiences with products and services during the usage process is also increasingly relevant in B2C aspects (Prahalad and Ramaswamy, 2004).

Proposition 1a: Implementing SDL enhances the service focus and reduces the product focus of the value proposition.

Proposition 1b: Companies implementing SDL are more interested in the value created by customers during the usage process of an offering than companies that remain in a goods-dominant business logic.

Key activities. Similar to the value propositions block, the key activities a company performs not only depend on the service focus, but also on general factors such as market strategy or industry focus. However, companies focusing on service-oriented solutions will rather follow the 'value shop' concept to organize their value creation activities (Osterwalder and Pigneur, 2004). This means that they will focus on detecting and fulfilling customers' needs and thus on problem discovery and problem solving activities (Osterwalder and Pigneur, 2010; 2004). The main business focus shifts from being a producer to being a provider (Storbacka et al., 2013). To implement SDL, companies need to support the value creation processes of their customer and thus, serve as value facilitators. As a consequence, they need to create opportunities to develop interactions with customers (Grönroos, 2008) in order to engage in an active dialog (Prahalad and Ramaswamy, 2000).

Proposition 2a: Implementing SDL changes the role of a company from being a producer of offerings to being a provider of offerings.

Proposition 2b: Implementing SDL enhances the need for interaction with customers.

Key resources. The definition of service according to SDL refers to the process of using one's resources for the benefit of another entity. In this context, all economic actors are resource integrators (Vargo and Lusch, 2008a; 2004). The concept of value-in-context implies that customers not only integrate resources supplied by the company in their value creation process, but also consider resources at their own disposal or sourced from other partners (Lusch and Webster, 2011). The whole value network aims at co-creating valuable solutions to mutually improve all network partners' well-being (Vargo and Lusch, 2011). In this context, a special emphasis has to be placed on operant resources such as knowledge and skills. Moreover, special capabilities are necessary to develop adequate value propositions (Osterwalder and Pigneur, 2004) as well as to actively manage the value co-creation process (Karpen et al., 2012). To develop and use such operant resources effectively, learning mechanisms and knowledge transfer from customers to the company (and vice-versa) are of importance (Madhavaram and Hunt, 2008). Companies need to relate knowledge management activities to value co-creation processes instead of relying on information technology-enabled processes (Payne et al., 2008). Therefore, the ability to learn directly from the customer base and from other network partners becomes more important (Lusch et al., 2010). Furthermore, as the product-service transition is a rather stepwise approach (Storbacka et al., 2013) companies utilize experimentation trial-and-error learning to change elements of their business models (Chesbrough, 2010; Sosna et al., 2010).

Proposition 3a: Companies implementing SDL develop specific interaction capabilities facilitating the co-creation of value.

Proposition 3b: Designing value propositions is related to a feedback learning mechanism based on operant resources provided by the customer base.

Customer segments. Implementing SDL also has an influence on considerations regarding customer segmentation. However, traditional criteria for customer segmentation such as requirements regarding different distribution channels, prices, offerings, types of relationships as well as the varying profitability of different customers (Osterwalder and Pigneur, 2010) are still relevant. Furthermore, a company's decision whether to serve, for example, the mass market or to follow a niche

market strategy might not be influenced by the product-service transition at all. SDL is not only applicable to niche market strategies or B2B settings, in which close relationships are established with a manageable amount of customers. In contrast, SDL argues that strategies from B2B settings can be translated to B2C settings (Vargo and Lusch, 2011; 2008b). Customers are an essential source of operant resources – in all different settings (e.g. Lusch et al., 2010; Prahalad and Ramaswamy, 2000). Of course, different customers have a different willingness to participate in co-creation processes (Yi and Gong, 2013; Rosenbaum and Massiah, 2007) as well as different skills, which also determine the perceived value for a customer (Prahalad and Ramaswamy, 2000). As a consequence, for service-oriented companies the type of relationship will be the most important segmentation criteria. On the one hand, companies need to manage customer diversity and facilitate value co-creation for customers with a different degree of sophistication (Prahalad and Ramaswamy, 2000). On the other hand, the integration of specific customers in order to gain access to operant resources is regarded as a strategic choice (Lusch and Webster, 2011). Hence, companies should focus on integrating key customers, who value a company's service propositions and are willing to provide operant resources in return.

Proposition 4: Companies implementing SDL segment key customers based on their willingness and ability to share information.

Key partners. Osterwalder and Pigneur's (2004) meta-model directly links the building blocks 'key resources' and 'key partnerships'. Besides the optimization of operations and processes and the reduction of risk, the acquisition of specific resources is one major reason for companies to engage in partnerships. Against this background, Osterwalder and Pigneur (2010) distinguish between four types of relationships: strategic alliances, coopetition, joint ventures and buyer-supplier relationships to assure reliable supplies. By employing SDL, companies have to further consider the importance of operant resources provided by the customer such as market-related knowledge (Madhavaram and Hunt, 2008). Furthermore, to facilitate experiential learning and thus the constant improvement of value propositions, feedback loops with all stakeholders are necessary to acquire knowledge about customers' needs and to learn how to meet them. To

do so, a two-way information flow with customers as well as with all other stakeholders has to be established (Lusch and Webster, 2011). Hence, customers' service systems represent valuable key partners and need to be integrated with a company's existing partner network. Moreover, it can be assumed that value network partners are linked more closely and become more dependent upon each other (Frankenberger et al., 2013; Storbacka et al., 2013).

Proposition 5a: Companies implementing SDL integrate customers as well as other network partners to gain access to specific service capabilities.

Proposition 5b: Companies implementing SDL have closer relationships with their value network partners.

Customer relationships. As customers are integrated in a company's partner network, customer relationships play a major role in SDL business models. Value is (co-)created when customers interact with the resources and capabilities provided by a relationship with a supplier as well as by other actors within the value network (Vargo and Lusch, 2010; 2004; Lusch and Webster, 2011). While Osterwalder and Pigneur (2010) relate this building block to different types of relationships (e.g. direct, personal assistance vs. indirect relationships such as self service), in this paper the nature of the relationship is emphasized. According to SDL, relationships should be beneficial for all involved parties to be in line with the specific definition of service. Hence, companies need to establish a dialog of equals with their customers (Prahalad and Ramaswamy, 2000) and they need to ensure that the acquisition of resources through customer relations does not lead to a one-sided exploitation of the customer's knowledge base. Negative examples would be specific open innovation projects, where customers surrender their property rights without receiving value in return (Kozinets et al., 2008; Prahalad and Ramaswamy, 2004). Hence, customer-supplier relationships require multi-directional linkages, while each actor influences the value creation of the other (Grönroos, 2008). Instead of a rather hierarchical value chain perspective with companies 'targeting' customers in the market, SDL-based customer relationships become more heterarchic (Hedlund, 1986; 1993) resulting in collaborative relationships of all partners within the value network and in symmetrical exchange of information and other operant resources (Kowalkowski, 2010).

Proposition 6: Companies implementing SDL facilitate multi-directional value creation activities that enable customers to interact with other network partners on eye level.

Channels. Channels connect the value propositions of a company with the customer segment and reflect all possible interaction points between suppliers and customers (Osterwalder and Pigneur, 2004). Originally, the building block ‘channels’ is rather related to distribution channels and focuses on the delivery of value to customers. However, this paper goes further and interprets channels as interaction mechanisms, which not only allow for distributing goods and services to customers, but which facilitate the joint creation of value. To employ SDL successfully, companies need to establish such interaction channels actively and thus encourage the reciprocal exchange of information and other resources (Grönroos and Ravald, 2011).

Of course, this consideration is strongly linked to the customer relationship aspect of the model. Even though an integration of customers is a prerequisite of value co-creation, customer relationships do not necessarily need to be direct. To be able to manage the complex relationships within service business models, companies already heavily rely on ICT. This provides a virtual platform for a close integration of customers and suppliers into value creation networks (Tuunanen et al., 2010) which seems to be crucial for the success of the adjusted or newly developed business model. Moreover, technology is an enabler to liquefy information resources, meaning the separation of information from its physical form. Therefore, information can flow more easily from one entity to another. By using ICT-based channels the knowledge transfer from customers to the company can be facilitated. In turn, the company is able to constantly reconfigure its resources and thus to improve its ability to offer more adequate value proposition (Lusch et al., 2010).

Proposition 7a: ICT-based channels enhance the exchange of information and facilitate the co-creation of value.

Service delivery is also more and more supported by ICT (Belvedere et al., 2013). With advancements of ICT in the mass market, customer acceptance of digitized services increases even in the B2C market (Tuunanen et al., 2010). While technology-generated self-

service has usually decreased the personal interaction, today's ICT enables interpersonal exchanges similar to face-to-face contact (Breidbach et al., 2013) and allows for a more personalized communication at reasonable costs (Osterwalder and Pigneur, 2004). Therefore, developments in ICT change the characteristics of customer relationships and exchange mechanisms as it facilitates the coordination of diverse partners within the value network (Davis et al., 2011; Osterwalder and Pigneur, 2004). On the one hand, ICT changes the balance of market power in favor of customers due to enhanced information access, increased transparency and the ability to exchange information within large online-customer communities. Today, customers are even able to create value for themselves (e.g. C2C markets). Hence, empowered customers try to capitalize on their improved position by gaining a stronger influence on market exchange processes (Kucuc and Krishnamurthy, 2007; Prahalad and Ramaswamy, 2004; Steward and Pavlou, 2002). On the other hand, companies can stimulate the customers' willingness to participate in the value creation process and use the customer's contribution to their own benefit. By treating customers at an eye's level and rewarding them for their involvement, specific tasks can be transferred to the customer base. However, companies need to provide customers with specific tools or establish common standards to facilitate knowledge transfer and value co-creation (Briscoe et al., 2012; Lusch et al., 2010).

Proposition 7b: Empowered customers are willing to participate in ICT-based value creation as long as their participation enhances their own value-in-context.

Proposition 7c: To benefit from the use of ICT-based channels, companies establish common standards and instruct customers in using them.

Cost structure and revenue stream. The transition from a product- to a service-oriented business logic influences financial streams as offering services can provide a more stable source of revenues as extensive investments in tangible goods are usually more dependent on economic cycles (Oliva and Kallenberg, 2003; Wise and Baumgartner, 1999). For example, Rolls Royce changed its airline business from a goods-dominant logic to the provision of service when offering leasing contracts instead of selling engines (Ng et al., 2012). However, the

product-service transition does not necessarily result in service-dominant thinking (Kowalkowski, 2010). Not only lack of organizational arrangements supporting the transition but also cognitive limitations of managers increase the risk of being caught by the service paradox (Gebauer et al., 2005). As long as the customer remains an exogenous variable in the value creation process, companies still apply GDL even when offering intangible goods (Vargo and Lusch, 2008b; Lusch et al., 2007). Nevertheless, in the example of Rolls Royce the transition not only addresses more continuous revenue streams and a solution-oriented activity focus, but also the improvement of customer utility (offering leasing contracts to ensure the long-term efficiency of airplanes). The value proposition needs to fit the customer's capabilities and resources in order to achieve a high value-in-context (Ng et al., 2012). To achieve high revenues, companies need to change their mental model.

Proposition 8a: Companies implementing SDL are affected by an increase of costs.

Proposition 8b: Companies implementing SDL are able to realize an increase of revenues that is higher than the increase of costs.

4. Conclusion, Limitations and Outlook

This paper examines how a growing service-orientation affects the business model design in manufacturing companies. In this context, the business model canvas of Osterwalder and Pigneur (2010; 2004) serves as overall theoretical framework for this paper. Insights on how business models need to be redesigned can be derived from the concept of service-dominant logic (Vargo and Lusch, 2008a; 2004). By discussing three major aspects of SDL, value-in-context as well as SDL's specific network and resource perspectives, evidence is provided that the implementation of a service-oriented business logic substantially affects all nine business model building blocks of Osterwalder and Pigneur's (2010; 2004) business model conceptualization, regardless what kind of service offerings are involved in particular.

What clearly distinguishes SDL from GDL is that a reciprocal provision of service supersedes the provision of – either tangible or intangible – goods (Vargo and Lusch, 2008b) while the focus is shifted from exchange to interactions (Grönroos, 2006). Integrating and

supporting customers to facilitate their resource integration and value co-creation processes within the network is the main challenge for a truly service-dominant business model (Lusch and Webster, 2008). Especially the integration of the customer base in the value creation process plays a central role to effectively accomplish the transition towards a service-oriented business logic. As a consequence, adaptations of the meta-model by Osterwalder and Pigneur (2010; 2004) are necessary in order to display the role of the customer as a provider of operant resources in the business model. A direct link from the customer segments building block to the key partners block illustrates this interrelationship. Following, the propositions can be understood as an attempt to portray the influence of SDL on each single business model building block. Most notably, the propositions indicate that all nine business model building blocks are affected by an implementation of a service-oriented business logic. Of course an integration of customers in value creation processes is the most fundamental aspect of the new business model. Nevertheless, due to the interdependencies of building blocks changes in the customer interface pillar result in the need to adjust other building blocks as well.

This research provides only a first attempt to describe the development of service-oriented business models. However, due to its conceptual nature this paper may lack explanatory power. Especially the intensity of modifications in each single business model building block cannot be explained within this paper. It can be assumed that the design of a specific business model is also dependent on particular context-related circumstances. This aspect was not considered in this research. Moreover, this paper does not explain precisely how companies can establish service-oriented business models in practice. Hence, detailed research on specific means to configure business models especially in order to apply the new perspective on customer relations is still necessary. Nevertheless, newness and complexity of the research question gave reason for following a more exploratory research approach.

Several interesting and important implications for future research can be highlighted. Especially the need for further empirical research has to be pointed out. First of all, a more detailed analysis of specific influences of SDL on the business model elements in business practice is necessary. This could be achieved by qualitative research – for example in-depth interviews with managers that already

implemented service-dominant business models. Second, the question arises which service related capabilities need to be developed by companies which increase their service focus. Again, this can be answered by qualitative research. Nevertheless, besides focusing on a company perspective of service capabilities it could also be of interest to gain insights into the customers' point of view. Which expectations do customers have related to value propositions? Or, in other words, which service-related capabilities are demanded by customers? Furthermore, the customers' opinion may also be of relevance related to the co-creation aspect of SDL. Customer surveys could analyze the willingness of customers to participate in the co-creation of value. It might also be interesting to further examine customers' perspectives on value creation. What benefits can customers gain from value propositions? Is there a gap between the value-in-context intended by the service provider and the value-in context perceived by the customers? Either qualitative or quantitative research could be useful to answer these questions. The addressed topics for future research are only a few issues that emerge from our research. Both, SDL as well as research related to the concept of business models can be strengthened by an integrative approach. Hence, future research focusing the research topic addressed in this paper is highly appreciated.

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