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Servitization Practices: A Co-Creation Taxonomy

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17.1 Introduction

Servitization increasingly constitutes a strategic imperative for product firms, involving not just the introduction of value-added services and solutions to the core offering but also a reconsideration of the company's

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product-centric mindset, to actively involve customers in service processes (Kowalkowski & Ulaga, 2017). As companies climb the “value ladder,” relationships typically become more long term in nature, and active customer participation in service deployment increases (Storbacka, 2011; Tuli, Kohli, & Bharadwaj, 2007). However, increased customer engagement also typically heightens uncertainty for the supplier (Larsson & Bowen, 1989), and it may be that customers lack the ambition or competence to play more active roles. Knowing how to harness the potential benefits of engaging customers in various service activities—as well as when not to involve them further—is therefore a vital question for any servitization initiative. In overseeing servitization, managers must consider different modes of customer engagement, ranging from passive to active (Chang & Taylor, 2016; Edvardsson, Tronvoll, & Gruber, 2011), and determine how to make the most of these relationships to ensure the firm’s success.

Historically, research on servitization has tended to be one dimensional, addressing the managerial aspects of the firm’s *own* (supplier-focused) servitization process (Luoto, Brax, & Kohtamäki, 2017), without considering the customer’s transition to increased service reliance. But servitization entails increased awareness of co-creation (Kowalkowski & Ulaga, 2017), so both supplier and customer perspectives and practices are central to the process. This chapter accordingly explores both supplier and customer resource involvement and proposes a service co-creation framework that can support decision makers as they attempt to manage different forms of customer engagement behavior throughout the servitization process. The framework is grounded in the different roles a supplier may take and the various resource deployment issues that reflect the desired degree of customer and supplier involvement in the value-creation process.

17.2 Orientation of Servitization: SSP or SSC

Servitization processes differ in character, such that there are several ways a firm may approach servitization. A general distinction often has been drawn between two service types: those supporting the supplier’s prod-

ucts (SSP) and those supporting customer processes (SSC). The former includes product support services such as basic maintenance and preventive services. This traditional approach to servitization is product centric and typically requires less in-depth knowledge of the customer's process because it relies on the supplier's knowledge of its own product. In contrast, SSC is geared toward supporting the customer's processes (Mathieu, 2001). From the supplier's perspective, it entails providing spare parts and routine maintenance, and managing the customer's evolving requirements (Tuli et al., 2007). For example, a component supplier might function as an expert about the customer's operating processes through process optimization and operations monitoring, thereby leveraging its knowledge of component use to improve the customer's own processes associated with using that component (Ulaga & Reinartz, 2011).

17.3 Servitization from Customers' Perspective

Because servitization is essentially a co-creation endeavor in collaboration with customers, it is not enough to consider only the supplier's internal processes or its inputs to the customer's processes. It also is necessary to address what happens on the customer's side, especially because servitization commonly induces changes in customer behavior. The potential for customer involvement in the development of *new* services has long been recognized (e.g., Alam, 2006), but the customer's role in service deployment is rarely discussed. For example, a fleet management service that controls and manages a fleet of equipment relies on the customer's ability to manage the system on a day-to-day basis. In many cases, the customer has a more visible role in this type of servitized context because the focus is inherently on customer usage. But when service deployment involves outsourcing, the customer actually becomes *less* involved. To realize the benefits of such outsourcing though, the actors involved must work more closely together, implying more interaction. As a good example of this, when they outsource the management of their networks to vendors such as Ericsson and Huawei, telecommunications operators no longer participate actively in network management operations. Yet these managed

service contracts typically require closer relationships and increased trust between parties to address longer-term strategic issues, ensure incentive alignment, and, when needed, install an “open books” process (Kowalkowski & Ulaga, 2017).

17.3.1 Passive Customers

In many cases, service deployment entails some kind of *reciprocal* involvement of resources; managing joint resources is therefore a key issue (Grönroos & Voima, 2013). However, the customer may not be inclined to play a more active or proactive role; for example, more remote customers who rely on telematics-based solutions are likely more passive and rely on autonomous monitoring and data transmission and analysis, managed by the service provider.

Similarly, customers who lack time, money, or incentives may exhibit lower levels of engagement in service deployment (van Doorn et al., 2010). Without access to these resources, a customer may prefer to remain passive and rely solely on the service provider’s capabilities. Such a preference implies a low level of human-to-human interaction, but relatively high levels of technology-mediated interaction still might take place across the systems. For example, remote control of machinery or equipment is commonly regarded as a provider-dominated service with a passive customer, but self-service requires the customer to be more active.

17.3.2 Active Customers

In some cases, strong drivers lead the customer to engage heavily in service deployment, integrating its internal skills, labor, and time to learn about and develop the offering and to achieve the best outcomes, in terms of the customer’s own processes (Forkmann, Ramos, Henneberg, & Naudé, 2017). This motivation is especially relevant for advanced, integrated solutions that are interactively designed (Evanschitzky, Wangenheim, & Woisetschläger, 2011; Nordin & Kowalkowski, 2010). The customer’s willingness to adapt its internal routines and processes to the service supplier is a central determinant of service effectiveness (Tuli

et al., 2007), as are the customer's abilities to provide relevant operational information (Tuli et al., 2007), to offer feedback, and to use self-service options. Even in situations in which an active (i.e., highly engaged) customer is beneficial, increased engagement can have negative consequences if the customer's and supplier's goals are misaligned (van Doorn et al., 2010) and create runaway costs or unplanned customization efforts. It thus follows that service deployment requires varying levels of customer engagement, ranging from a passive installed base to active customer processes, according to the servitization strategy being used.

17.4 The 4C Framework (Constructor, Caretaker, Cicerone, Consultant): A Typology for Value Co-Creation in Servitization

This section elaborates and discusses the different roles a servitized firm can adopt, depending on its approach to servitization (product- or customer based) and the customer's service deployment role (passive/active). This 4C framework includes roles for Constructors, Caretakers, Cicerones, and Consultants; it provides a tool to facilitate managers' decision making. In Table 17.1, we provide examples and critical capabilities for success for each relational mode.

17.4.1 Caretaker

If a supplier's main business relates to capital-intensive products, and customer engagement in service deployment is low because of a lack of knowledge and experience, a *caretaker* role may be most appropriate. In such cases, the supplier is comfortable with the business and knows what to do because the services (e.g., maintenance, spare parts, and upgrades) are closely related to its own installed base. The customer is willing to allow a knowledgeable party take care of its problems or manage the equipment in question. For example, in the trucking industry, many

Table 17.1 The 4C framework: relational modes played by servitized firms

	Product-based servitization: Restoring or improving product functionality	Customer-based servitization: Focused on customer activities and processes
Passive customer (low degree of engagement in service deployment)	<p>Caretaker Taking care of a specific activity for the customer to simplify the customer's life</p> <p><i>Servitization in practice:</i> Remote monitoring of machinery and control over the performance of the installed base</p> <p><i>Critical capabilities</i></p> <ul style="list-style-type: none"> • Standardizing to gain efficiency and an ability to scale up and "productify" services. Implies finding a generalizable service deployment approach in installations and interactions with customers. • Modularizing to enable internal standardization while maintaining external customization possibilities for the customer to choose among pre-defined modules. 	<p>Constructor Designing a function for the customer, using both products and services, to solve a real problem</p> <p><i>Servitization in practice:</i> Preventive maintenance to support the customer's overall production process</p> <p><i>Critical capabilities</i></p> <ul style="list-style-type: none"> • Measuring key indicators of performance to follow up on improvements to customer's process. • Learning from machine data to provide the right feedback and analytical support for the customer. Implies not only learning about data but making judgments about what data are relevant for each customer's problems.
Active customer (high degree of engagement in service deployment)	<p>Cicerone Guiding the customer through an unknown landscape to acquire new knowledge through a high degree of engagement.</p> <p><i>Servitization in practice:</i> Customer training and development of employee skills (e.g., new technical competence for machine operations)</p> <p><i>Critical capabilities</i></p> <ul style="list-style-type: none"> • Instructing the customer through training, practical courses, and workshops to improve machine performance and worker skills. Instructing implies a pedagogic ability to find the customer's level of knowledge and adapt the training accordingly. • Engaging the customer to stimulate self-learning behavior. Includes emphasizing importance (improved safety, improved quality) and economic benefits. 	<p>Consultant Discuss and analyze a specific problem in collaboration with the customer to find customer-specific solutions</p> <p><i>Servitization in practice:</i> Consultative guidance and long-term business development (e.g., providing research and development services to support customers)</p> <p><i>Critical capabilities</i></p> <ul style="list-style-type: none"> • Orchestrating resources and skills from several actors find partial solutions among different actors in the network surrounding the firm. Includes communication skills and ways of sharing information. • Collaborating with customer to build a trusting environment in which ideas and solutions can be exchanged and discussed.

haulers prefer not to deal with repairs, maintenance, upgrades, or spare parts, so truck manufacturers can offer to take care of all these activities, leaving the customer to concentrate on its core business of transportation. The supplier's main task is to facilitate and support the customer's operational environment, rather than taking it over.

To ensure success in this relational setting, the supplier needs to standardize its service operations to a significant extent, so that it can offer generalizable, competitive services for many customers with different needs. This demand implies standardizing operating platforms, technology, and customer interactions. One way to maintain this level of customization is to modularize the service offering and allow the customer to choose pre-defined service modules. With standardized back-office modules and options for customers to choose among the modules, cost efficiency should increase, along with greater protection from low-cost competition by third-party suppliers. For example, in a highly competitive environment, an industrial robot producer decided to allow its customers to choose among pre-defined service modules (e.g., technical support, remote backup, and spare parts delivery) to balance its customization and operational efficiency.

17.4.2 Constructor

If a customer is less inclined to commit its own resources (labor, knowledge), the supplier can engage more actively with the customer's process by adopting the role of a *constructor*. This expert designs and plans some part (or several interrelated parts) of the customer's operational processes by deploying products and services. It is common among manufacturers of less expensive products (e.g., components as inputs for customer processes) that possess deep use knowledge. For example, the bearing manufacturer SKF works within customer processes, providing products (e.g., bearings, lubrication, and mechatronics) as inputs. For SKF, ball bearings are not just products; they are the "brains of the rotating machinery," transmitting real-life operating data to boost performance, reduce mission-critical downtime, and prevent accidents (Kowalkowski & Ulaga, 2017). With its advanced services and deep usage knowledge, SKF

acts as an architect that sets up specific customer systems for different operational environments—for example, improved turbine efficiency in a wind energy park or more durable machinery for members of the shipping industry.

To comprehend the possibilities of such relational settings, the supplier must develop deep skills for systematically measuring and learning from information about the customer's situation and internal processes. Data are generated exponentially, so the provider must be prepared to learn how to collect, interpret, and analyze them effectively. Accordingly, it also must be able to follow up and imagine improvements to the customer's process, if it is to retain its credibility as an expert. For example, if a customer does not know how to manage data gathered from online machinery, the provider must motivate the customer to provide relevant data before it can make learning-based improvements for this customer.

The main risk in such relational settings is that the provider lacks the necessary competences to manage customer operations. For that reason, it is important to specify the limits of responsibility in advance, to minimize any risk of underestimating operational difficulties (and costs). There also is a risk of competition from other professional service organizations in the augmented product market (Salonen, 2011), such that success may depend on building strategic alliances with other actors in the network that can support the focal firm's service provision.

17.4.3 Cicerone

When services mainly are provided to an installed base and the customer actively contributes its own resources and labor to the deployment process, the supplier takes on a *cicerone* role. Acting more as a guide, this supplier instructs the customer, which then becomes increasingly able to manage the situations alone. Typical examples include customer training and product simulation, adapted to the customer's existing level of knowledge and specific needs.

To fully develop this role, the supplier must have the skills needed to instruct and engage with the customer. *Instructing* means having the right team to train customer representatives, possessing the required level of

knowledge, and adapting the training accordingly. *Engaging* is equally important; servitization of this kind builds on the active participation of the customer. One successful example is Volvo Construction Equipment (VCE). In addition to its machines, VCE sells telematics-based services and hosts training to help customers increase their productivity through improved employee driving skills, which reduce both machinery breakdown rates and fuel consumption. It requires engaging the customer as an active participant in service deployment; without such engagement, the effect of such training may be very short term. Beyond the operational level, engagement must occur at the cognitive level to build more stable relationships (Brodie, Hollebeek, Juric, & Ilic, 2011). For example, the customer might log in to a system to gain a complete overview of its entire fleet (machinery status, spare parts library, planned maintenance) and interact with the service provider.

A potential risk in this scenario is that the *cicerone* might be replaced by machine-to-machine learning at the expense of human-to-human interactions. Online customer training (machine-to-human interaction) is already available in many industries, but machine-to-machine interactions also are a reality in a growing number of situations and application areas, such as business systems and online interactions. An important topic of discussion for managers will be how to leverage this situation to enhance customer value creation. Offering scalable solutions with lower labor costs potentially reduces customer training to a mere commodity. The challenge then is to build relationships with customers and engage them in service deployment, even in situations with minimal human-to-human interactions.

17.4.4 Consultant

This final element in the typology relates to services directed toward customer processes and customers that actively seek to contribute their labor and skills to service deployment. The *consultant* service provider seeks solutions to unique problems, in collaboration with the customer. This effort may involve resources provided by both parties, and there are usually no standard services on which to rely.

This type of relational setting, where both the supplier and the customer are active, may have the greatest value potential; existing research suggests that engaged, committed customers are more likely to remain loyal (Morgan & Hunt, 1994). Typical services include consultative programs and business development activities, which require deep knowledge of the customer's activities and deep trust between the customer and the supplier. The customer usually is motivated to deploy its own resources in long-term projects to develop the business over time. For the supplier, it therefore is pertinent to be able to integrate customer and firm resources and their uses, as well as to develop collaborative skills. Such efforts might include building teams of operatives that can work together and involving management at different levels. Linde Industrial Gas is one example of service deployment involving an active service provider and an active customer. To achieve improved customer processes, Linde staff work closely with the customer's own operating staff (welding, metallurgy) to find new ways to improve the process through better resource usage.

In the consultant mode, a major risk relates to the responsibility for the outcome. The service provider may stray beyond its usual operating area and thereby lose control of its costs and service deployment. This relational setting therefore can be seen as a development beyond initial servitization strategies, such that the customer and the service provider gradually develop different ways to collaborate by discussing their limitations and barriers.

17.5 Discussion and Managerial Takeaways

Servitization implies different strategies for product-based businesses that can leverage various product-based services as proactive weapons in their search for new opportunities for customer-centric growth. The framework presented herein accounts for the varying levels of customer engagement in service deployment and offers guidance for managers that are servitizing their business, in terms of the key activities to pursue and the risks associated with different roles. In doing so, this chapter complements existing servitization frameworks and road maps geared toward managers (e.g., Baines & Lightfoot, 2013; Kowalkowski & Ulaga, 2017). To conclude, we also note how current market trends are influencing customer interactions.

A major industrial trend in recent decades is digitalization. Real-time monitoring and connected machinery create a deluge of data, but these raw data need to be processed and analyzed. In this regard, a key issue is finding ways to develop sound relationships and systems that can systematically gather data from distributed business processes, then integrate each actor's resources to plan, and predict service outcomes. It requires a system for collecting and analyzing data and modeling capabilities for decision making. For suppliers, digitalization offers a means to initiate servitization by illuminating customer processes and thereby learning about the customer.

Another technology-related issue pertains to different interaction patterns, beyond human-to-human. As autonomous technology reaches new levels, machine-to-machine interactions likely will become elemental aspects of value co-creation, even though machines lack human intentions or awareness of agency. For managers developing servitization strategies, the many new interaction links offered by such machine-based interactions represent an opportunity to strengthen traditional interaction patterns.

Servitization also means that as markets become more intertwined, the co-creation of value may take multiple forms. Managers must prepare for an environment in which active customers make it difficult to control the situation, and they must function as part of a value-creating network with blurred boundaries between actors. This shift affects the customer's ability to be active but also requires a broader analysis of the behavior of ecosystem actors in their service deployment, through their roles as *caretakers*, *constructors*, *cicerones*, or *consultants*. In turn, managerial practices must address both interactions with members active in the ecosystem and collaborations with other actors.

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