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### Explaining servitization failure and deservitization: A knowledge-based perspective

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#### 1. Introduction

## ABSTRACT

The literature on servitization suggests that manufacturers benefit from moving towards solution provision and closer integration with customers. Yet, empirical evidence indicates two notable deviations from this accepted wisdom: servitization failure and deservitization. This conceptual article seeks to explain these observed deviations by developing a knowledge-based perspective on servitization. Drawing on literature on knowledge-based theory, organizational search, organizational learning, and organizational capabilities, the article analyses the interorganizational structure of production between the solution provider and its customer. Reconceptualizing the integrated solution offering as a bundle of knowledge components, a coherent theoretical framework is developed for understanding servitization. This framework provides insight into the antecedents and consequences of servitization and offers multiple explanations for servitization failure and deservitization. The knowledge-based perspective also points towards several new avenues for future research on servitization. © 2016 Elsevier Inc. All rights reserved.

Research on servitization suggests that combining product and service businesses can give competitive advantage in capital goods markets (Anderson & Narus, 1995; Wise & Baumgartner, 1999). Extant research suggests that the transition to solutions, integrated combinations of products and services, provide strategic benefits to manufacturing firms, including improved customer satisfaction, higher profitability and more stable revenue streams (Mathieu, 2001; Oliva & Kallenberg, 2003; Vandermerwe & Rada, 1988).

However, despite some encouraging success stories of firms transitioning from a product manufacturer to a solution provider, such as the transformation of IBM (Gerstner, 2004), and extensive research on the topic (Gebauer, Ren, Valtakoski, & Reynoso, 2012; Lightfoot, Baines, & Smart, 2013), our understanding of servitization is still limited. In particular, two contradictory empirical observations can be noted. First, even though the literature largely advocates the transition towards services, many firms struggle to achieve the suggested benefits, leading to widely documented *servitization failure* (Benedettini, Neely, & Swink, 2015; Brax, 2005; Gebauer, Fleisch, & Friedli, 2005). Second, contrary to the common suggestion of moving towards increasing integration with customer operations (Mathieu, 2001; Oliva & Kallenberg, 2003), many firms also choose *deservitization*—reducing or abandoning service elements in their offering (Gebauer, 2015).

The purpose of this conceptual article is to provide a theoretical explanation for these two empirically observed features of servitization. foundation for thorough analysis (Gebauer et al., 2012). Therefore, I put forward the *knowledge-based view of the firm* as an integrative theoretical perspective to facilitate the analysis and explanation of servitization failure and deservitization. The relevance of knowledge as a theoretical perspective is increasing, given the rising knowledge intensity of organizations (Alvesson, 1995), and the critical role of innovation for modern firms (Kim & Mauborgne, 1997). This perspective considers knowledge to be a key resource of firms, and suggests that firms exist to enable the coordination and integration of the knowledge of individuals (Grant, 1996a). It has been previously used in the industrial marketing context, for example, to explain value co-creation (Aarikka-Stenroos & Jaakkola, 2012) and innovation performance (Chen, Lin, & Chang, 2009).

However, the extant literature lacks the necessary coherent theoretical

Due to the broad scope of servitization, covering all facets of the phenomenon is not feasible in a single article. Therefore, this article focuses on the interaction between the manufacturer and the customer and, more specifically, the interorganizational structure of production (cf. Araujo & Spring, 2006). Although the knowledge-based view of the firm provides only a partial explanation of this interaction (cf. Jacobides & Winter, 2005), this analysis still yields important new theoretical into servitization.

This paper contributes to the literature on servitization in four ways. First, as recently called for by Kowalkowski et al. (2015), it provides a theoretical explanation for servitization failure and deservitization. Second, the developed theoretical framework is a step towards a coherent and systematic theoretical grounding for servitization. Given the breadth of research based on the knowledge-based perspective, the developed framework provides an integrative platform for future research on the phenomenon. Third, in line with Tuli, Kohli, and Bharadwaj

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(2007), this paper highlights the importance of the customer perspective and understanding servitization as a dyadic phenomenon. Fourth, by incorporating organizational search and learning, the developed theoretical framework helps to understand the dynamics of servitization over time.

The paper is structured as follows. First, I briefly review relevant literature on servitization, including an overview of proposed theoretical perspectives. Next, knowledge-based theory is introduced and used to develop a knowledge-based conceptualization of integrated solutions, followed by an analysis of the implications of this conceptualization on servitization. Finally, I discuss the conclusions from the developed theoretical framework on servitization failure and deservitization, and how it relates to extant research on servitization.

### 2. Prior literature

Research on servitization studies the transition of manufacturing firms from product-centric business towards providing comprehensive integrated solutions that consist of both products and services (Oliva & Kallenberg, 2003; Vandermerwe & Rada, 1988). The products included in these solutions include both tangible products such as heavy industrial machinery, and intangible products, such as software systems (Hobday, 1998). The included services range from simple maintenance (Jackson & Cooper, 1988) to knowledge-intensive services (Martinez-Fernandez, 2010), and comprehensive system life-cycle solutions (Tuli et al., 2007).

As Davies (2004) suggest, the combination of products and services must be successfully integrated to form a valuable solution to the customer. Therefore, following Sawhney (2006), *solution* is defined as "an integrated combination of products and services customized for a set of customers that allows customers to achieve better outcomes than the sum of the individual components of the solution." Alternatively, the expression "integrated solution" is used to emphasize the importance of integration for servitization. At its core, servitization involves two main actors: a *customer* firm that seeks to improve its operations and performance through procuring a solution (Tuli et al., 2007) and a *solution provider*—typically a manufacturing firm—that develops and delivers the solution.

Servitization is suggested to yield strategic benefits to manufacturing firms, including more stable revenue streams, higher profitability, and improved customer satisfaction (Anderson & Narus, 1995; Vandermerwe & Rada, 1988; Wise & Baumgartner, 1999). The literature commonly suggests that to maximize these benefits, manufacturers should move gradually from pure product business to solution business (Mathieu, 2001; Oliva & Kallenberg, 2003; Vandermerwe & Rada, 1988). In marketing terms, manufacturers are suggested to progress from tactical marketing, such as services as a part of product marketing mix (Kyi, 1987) to relationship marketing (Homburg & Garbe, 1999) and finally towards strategic integration and value co-creation with customers (Grönroos, 2011a; Vargo & Lusch, 2008). This transition requires firms to change their organizational structure (Neu & Brown, 2005; Oliva & Kallenberg, 2003), organizational culture (Gebauer, Edvardsson, & Bjurklo, 2010a), and customer relationships (Edvardsson, Holmlund, & Strandvik, 2008; Penttinen & Palmer, 2007).

In summary, extant literature suggests that manufacturers should move towards increasingly intensive collaboration with their customers. Yet, empirical findings challenge this "accepted wisdom" of servitization in two ways. First, evidence indicates that many firms find the transition difficult to implement, and thus fail in servitization (Benedettini et al., 2015; Brax, 2005; Gebauer et al., 2005). Second, evidence suggests that few firms follow a clear transition path (Kowalkowski et al., 2015), and that firms may in fact follow a reverse servitization path from solutions towards transactional services (Finne, Brax, & Holmström, 2013). Some firms have also chosen *deservitization* and reduced the role of services in their business (cf. Gebauer & Kowalkowski, 2012).

### 2.1. Servitization failure

Research on servitization has for long reported instances of servitization failure (Brax, 2005; Gebauer et al., 2005). Servitization failure means that a firm does not succeed in developing a profitable service business to complement an existing product business. Although this service paradox has continued to appear in empirical studies, mainstream research has continued to nearly unanimously advocate the benefits of servitization. Much of the extant research on servitization has focused on identifying success factors for servitization and successful paths in transition from product to solution business (Mathieu, 2001; Oliva & Kallenberg, 2003; Penttinen & Palmer, 2007; Vandermerwe & Rada, 1988). Success factors explored in extant literature include changes to offering (Mathieu, 2001; Oliva & Kallenberg, 2003), firm capabilities (Ceci & Masini, 2011; Storbacka, 2011), changes in customer relationships (Penttinen & Palmer, 2007; Tuli et al., 2007), organizational structure (Galbraith, 2002; Gebauer & Kowalkowski, 2012; Oliva, Gebauer, & Brann, 2012), and the fit between service strategies and competitive environment (Gebauer, 2008; Gebauer, Edvardsson, Gustafsson, & Witell, 2010b). However, except for Benedettini et al. (2015), who analyze servitization failure in terms of environmental and internal risk, little research exists on the antecedents of servitization failure.

Moreover, extant evidence suggest that the financial impact of servitization—the outcome of successful servitization—is still poorly understood (Gebauer et al., 2012). What evidence exists is vague (Eggert, Hogreve, Ulaga, & Muenkhoff, 2014; Neely, 2009), shows nonlinear relationship between servitization and financial performance (Fang, Palmatier, & Steenkamp, 2008; Suarez, Cusumano, & Kahl, 2013; Visnjic Kastalli & Van Looy, 2013), and is contingent on environmental and organizational factors (Ceci & Masini, 2011; Gebauer, 2008; Gebauer et al., 2010b; Neu & Brown, 2005). In conclusion, evidence suggests that servitization failure is not only possible, but also likely in many cases.

### 2.2. Deservitization

The "accepted wisdom" suggests that servitization proceeds linearly from a pure product business towards solution business and increasing integration with customers (Mathieu, 2001; Oliva & Kallenberg, 2003; Penttinen & Palmer, 2007; Vandermerwe & Rada, 1988). Yet, empirical evidence suggests that this view of servitization is incomplete. Contrasting evidence indicates the possibility of deservitization: firms reducing the role of services in their business, or completely abandoning the service business.

Empirical research on deservitization is relatively scarce in comparison to research on servitization success and failure, Two types of evidence exist. First, some studies suggest that firms move back on the product-service continuum or abandon service business (Gebauer & Kowalkowski, 2012; Kowalkowski et al., 2015). Second, other studies describe reverse servitization: firms choose to first move into customer-oriented services requiring customer intimacy and only later build less intensive product-oriented service business (Cusumano, Kahl, & Suarez, 2015; Finne et al., 2013).

### 2.3. Solution provider-customer dyad

Although extant research has widely explored the success factors of servitization, important gaps persist in our understanding of the antecedents of servitization. First, Tuli et al. (2007) argue that research on servitization has been overwhelmingly dominated by the solution provider's perspective. By contrast, customers' motives to engage in collaboration and purchase solutions remain largely unexplored. Yet, as suggested by the service-dominant logic, servitization should be built around the customer's value creation processes (Vargo & Lusch, 2004, 2008).

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