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What service transition?

Rethinking established assumptions about manufacturers' service-led growth strategies

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Research highlights

- We challenge the established service transition assumption
- We identify 3 service growth trajectories: becoming an availability provider; a performance provider; and an industrializer
- Firms should generally downsize and standardize solutions, thus being able to offer them to a greater number of customers
- Firms concurrently hold a number of system supplier roles rather than transferring from one role to another
- We present a strong platform for further examination of theoretical and managerial implications of the study

Abstract

Both academics and practitioners emphasize the importance for product firms of implementing service-led growth strategies. The service transition concept is well established, namely a unidirectional repositioning along a product-service continuum—from basic, product-oriented services towards more customized, process-oriented ones—ultimately leading to the provision of solutions. We challenge this service transition assumption and develop alternative ones regarding how product firms should pursue service-led growth. Using ‘problematization methodology’, and drawing on findings from thirteen system suppliers, we identify three service-led growth trajectories: (1) becoming an availability provider, which is the focus of most transition literature; (2) becoming a performance provider, which resembles project-based sales and implies an even greater differentiation of what customers are offered; and, (3) becoming an ‘industrializer’, which is about standardizing previously customized solutions to promote repeatability and scalability. Based on our critical inquiry, we develop two alternative assumptions: (a) firms need to constantly balance business expansion and standardization activities; and (b) manage the co-existence of different system supplier roles. Finally, we consider the implications for implementing service-led growth strategies of the alternative assumptions.

Keywords: Service transition, solutions, manufacturing companies, service strategy, service infusion, problematization methodology

1. Introduction

If a key account customer expresses new needs, customization is always a possibility. What is challenging is to “industrialize” and offer extensive service to other non-key account customers; that is, to most of our customers. —Senior Executive, system supplier

Throughout the last few decades, a growing number of researchers have explored why and how system suppliers and other product firms implement service-led growth strategies, expanding and customizing their service offerings. Consequently, through an expanding body of literature, our understanding of the challenges and opportunities these firms face has increased, and progress has been made in terms of formulating definitions and creating useful frameworks. However, as indicated in the above quote, many firms are struggling with both strategic and operational choices, and there remains much to learn to best practices for implementation and effective customer interfaces (Parvinen & Möller, 2013).

Interestingly, both academia and practice emphasize the importance of and difficulties associated with *transitioning* from a so-called product business to a service business (Fang et al., 2008; Gebauer et al., 2005; Harmon and Laird, 2012; Kessler & Stephan, 2010; Matthyssens & Vandembemt, 2010; Raddats & Easingwood, 2010; Ulaga & Loveland, 2014), product-service system business (Baines et al., 2009; Dahmani et al., 2014; Martinez et al., 2010), hybrid offering business (Ulaga & Reinartz, 2011), or solution business (Evanschitzky et al., 2011; Ferreira et al., 2013; Paiola et al., 2013). Essentially, the service transition concept, as established in Oliva and Kallenberg’s (2003) path-defining study, assumes that firms undertake a unidirectional repositioning along a product-service continuum: from basic, product-oriented services towards more customized, process-oriented ones, ultimately leading to the provision of solutions. As a result of this assumption, the further firms move along the transition continuum, (a) the greater relative importance of services increase and the less the relative importance of tangible products, and (b) the customer relationships become long-term and more intimate.

Although most studies adopt the transition process as an underlying theoretical assumption, it seems that few firms actually make a complete downstream transition in practice (Storbacka et al., 2013). Kowalkowski et al. (2012) point out that service-led growth and expansion is multifaceted and does not necessarily imply a unidirectional development towards the provision of more extensive services. Furthermore, Windahl and Lakemond (2010, p. 1289)

argue that “firms experiment concurrently with a number of offerings. Basic and advanced service agreements and integrated solutions co-exist along with the sale of tangible goods.” In fact, since many of the studied firms are system suppliers¹, they are used to combining products and services, and generally have close and long-term relationships with their key customers.

Consequently, in this paper, we “problematize“ the service transition concept (i.e., a unidirectional, advancement from less to more advanced services along a product-service continuum) and its operational importance for system suppliers. We argue that the concept may be simplistic, possibly leading to both erroneous theoretical and managerial implications. Our objective is to challenge the established assumption underlying the service transition concept and re-conceptualize how system suppliers focus on service-led growth strategies. We use Alvesson and Sandberg’s (2011) ‘problematization methodology’ for our assumption-challenging investigation and show that system suppliers seek growth, also through other service strategies.

Drawing on a growing body of literature, as well as on five independent research projects with thirteen system suppliers, we identify three distinct service growth trajectories, including both the expansion and standardization of service offerings to become: (1) an availability provider; (2) a performance provider; and, (3) an ‘industrializer’. Based on these findings, we develop and evaluate two alternative assumptions, showing that the various service activities are more multifaceted than previous research suggests. Firms need to balance business expansion and standardization activities, and they concurrently perform a number of roles, rather than switching serially from one role to another.

In the remainder of this article, we first review the existing literature. We then present the research process and methodology, and propose our alternative assumptions. Finally, we discuss both the theoretical and managerial implications, concluding with limitations and avenues for future research.

2. Literature review

In this section, we identify and discuss the relevant literature (B2B services and solutions) as well as the broader context (system suppliers). We show that the service transition concept is especially prevalent in the more recent literature, whereas the earlier literature on system

¹ We define system suppliers as manufacturers providing large-scale, complex systems to industrial customers (Helander and Möller, 2008); hence, not referring to so-called system

suppliers generally provides a somewhat more multifaceted discussion (although it does not study growth trajectories explicitly).

2.1 From products to solutions: the underlying 'service transition' assumption

The implementation of service-led growth strategies has become an important research topic; scholars and practitioners from various disciplines and industries argue that firms need to navigate the transition from products to solutions through service development. That is, transitioning proceeds from less to more advanced services and ultimately solutions, along a product-service continuum. Empirically, this shift is frequently referred to as "service infusion" (Kowalkowski et al., 2012; Ostrom et al., 2010) or as "servitization" (Vandermerwe & Rada, 1988; Visnjic Kastalli & Van Looy, 2013). Theoretically, marketing scholars emphasize the need for a 'service' perspective for all firms, arguing that service rather than goods (should) form the basis of economic exchange (Grönroos, 2011; Gummesson, 1994; Normann, 2001; Vargo & Lusch, 2004).

In general, the literature argues that service transition takes place in different dimensions, often formulating two-dimensional frameworks (Ferreira et al., 2013; Mathieu, 2001; Matthyssens & Vandenbempt, 2008; 2010; Oliva & Kallenberg, 2003; Penttinen & Palmer, 2007; Raddats & Easingwood, 2010; Ulaga & Reinartz, 2011). We have identified three prevalent and interrelated transition dimensions: (1) from product towards process-oriented services (Antioco et al., 2008; Eggert et al., 2014; Mathieu, 2001; Oliva & Kallenberg, 2003; Raddats & Easingwood, 2010; Ulaga & Reinartz, 2011; Windahl & Lakemond, 2010); (2) from standardized towards customized services (Lightfoot & Gebauer, 2011; Matthyssens & Vandenbempt, 2010; Penttinen & Palmer, 2007); and (3) from transactional towards relational services (Oliva & Kallenberg 2003; Penttinen & Palmer, 2007). Regardless of terminology and academic discipline, empirical studies as well as more conceptual papers, generally adopt the service transition as an underlying—explicit or implicit—assumption.

The recommendations for implementation that are linked to these transition dimensions are typically described as gradual (Ulaga & Reinartz, 2011) and sequential, due to the complexity associated with distinct parallel changes (Oliva & Kallenberg, 2003; Penttinen & Palmer, 2007). The transition from a transactional to a relational nature of the customer-provider relationship encourages a gradual implementation of increasingly proactive, flexible, customized, and long-term relationships with customers and partners (Brax & Jonsson, 2008; Matthyssens & Vandenbempt, 2010). The transition from product to process-oriented

offerings highlights the need to gradually move towards more complex offerings, add service components, and change the earning logic from discrete to continuous cash flows (Raddats & Easingwood, 2010; Ulaga & Reinartz, 2011; Storbacka et al., 2013). With a more complex and extensive offering, the coordination costs and operational risks typically increase (Nordin et al., 2011), but if the firm can manage these factors, there is an economic incentive to extend the total offering. When (and if) the firms achieve a complete transition in all dimensions, they are generally regarded as offering solutions rather than merely providing some basic and advanced services.

While some of the early solutions literature draws on system selling and the industrial marketing literature, many of the more recent studies (on system suppliers) fail to acknowledge and develop these earlier contextual and conceptual contributions (Davies et al., 2007; Nordin & Kowalkowski, 2010). A notable exception is Helander and Möller (2007), who argue that scholars need to integrate the discussion on relationships and networks with that on systems selling and service marketing. They differentiate between three system-supplier roles which they link to the strategic position of the firm and to customer strategies: (1) equipment supplier; (2) availability provider²; and (3) performance provider, a distinction which corresponds to Windahl and Lakemond's (2010) categories of offerings (maintenance, operational, and performance offerings), Tukker's (2004) categories of system models (product-oriented, use-oriented, and result-oriented), and Kindström and Kowalkowski's (2014) categories of revenue models (input-based, availability-based, and performance-based).

An equipment supplier provides services that are directly related to its equipment (i.e., product-oriented services). This role responds to a customer strategy that remains fairly independent of suppliers (Helander & Möller, 2007). The firm focuses on product sales, and services are provided to maintain and support the product business. The services are product-oriented, transactional, standardized, and input-based (a promise to perform a deed (Ulaga & Reinartz, 2011)).

Availability providers can offer service activities throughout the system lifecycle and they use services to differentiate themselves from competitors, a role which corresponds to a customer strategy aiming at sharing capability development with the suppliers (Helander & Möller,

² Due to the ambiguity surrounding the concept of solutions (Nordin & Kowalkowski, 2010), we refer to the 'solution provider' role as 'availability provider', which we regard as clearer.

2007). The offering is use-oriented, relational, customized, and output-based (such as a promise to achieve availability). Availability providers no longer draw only on internal components and knowledge; rather, they integrate internally and externally supplied components, services and knowledge (Davies, et al., 2007; Helander & Möller, 2008). Hence, they pursue what Davies (2004) refers to as high-value systems integration.

Finally, if customers rely mostly on supplier expertise and capability development, suppliers can extend their activities even further in the direction of system co-development, process management, and continuous optimization, and hence assume the role of performance provider. Such providers have a profound knowledge of customers' present and future needs. It offers services for managing and operating customer processes (Helander & Möller, 2007). Often, the customers pay only for actual, achieved results and value-in-use (i.e., performance).

Even though Helander and Möller (2008, p. 248) state that “a supplier often has various roles depending on their set of customers” and that “these roles can be dynamic”, they do not explicitly discuss the implications of these dynamics. Rather, they focus on how suppliers can expand their traditional role of being an equipment supplier towards becoming a solution provider (i.e., much in line with the service transition concept). As explained below, it is necessary to go ‘back to the roots’ in order to break free of the transition assumption.

2.2 Back to the roots: systems selling and industrial marketing

In line with Davies et al. (2007), we argue that service-led growth strategies can be traced back to the early literature on so-called ‘systems selling’. Mattson (1973, p. 108) defined systems selling as “a combination of products and services, a fulfillment of a more extended customer need than is the case in product selling” (p. 108); and, Hannaford (1976) referred to systems selling as product-service combinations designed to perform “a complete function for a buyer”³. However, as discussed below, even though the earlier definitions closely approach the latter ones discussed previously, the emphasis was on understanding the importance of *balancing* the need to standardize separate components with the development of tailor-made systems, rather than on the importance of *transitioning* from one type of business to the other.

³ There are also examples of systems/solutions that go back even further in time, such as Michelin's tire solutions from the 1920s (Renault et al., 2010) or IBM's fast-growing rental solutions in the 1930s (McNeil, 1944). Schmenner (2009) even argues that such service infusion has antecedents extending back 150 years.

In terms of standardization, Mattson (1973) emphasized that even though the system design should be adjusted to the individual customers, it does not include the supply of unique, tailor-made systems to each customer. Rather, the components should be standardized to some extent and could also be marketed separately. In contrast, Hannaford (1976, p.140) emphasized the importance of customization and a pure systems selling approach, providing “total packages of product and service solutions to customer problems”. In order to succeed, it was important to understand that the roles of both the supplier and customer would change significantly. Page and Siemplenski (1983) picked up the seemingly dormant thread of systems selling and discussed so-called product systems and systems marketing, hence emphasizing the importance of both standardization (Mattson, 1973) and customization (Hannaford, 1976). They argued that, in principle, the components of a system should also be marketed separately and both the components of the system, as well as the system itself should be standardized. Page and Siemplenski (1983, p. 89) also related systems marketing to developments within general marketing, arguing that product firms “are turning to the marketing of systems to satisfy the more extended and complex needs of their customers”. Even though they did not expand this discussion further, it is closely related to more recent debates (Cova & Salle, 2008; Windahl & Lakemond, 2006; 2010), linking solutions to the service marketing discourse of the Nordic School of Marketing and the emphasis on long-term relationships (Grönroos, 2011; Gummesson, 1994; Normann, 2001), and a service-dominant view on value (Vargo & Lusch, 2004). Arguably, system selling now extends beyond solving customers' operational problems to include more strategic forms of marketing, based on so-called ‘solution selling’ (Davies et al., 2007; Helander & Möller, 2008).

3. Research method

In the following section, we describe how we use Alvesson and Sandberg’s (2011) ‘problematization’ methodology’ to (a) identify and challenge the established assumption surrounding the service transition concept. We consider the assumption that product firms undertake a unidirectional repositioning along a product-service continuum, from basic, product-oriented services towards more customized, process-oriented ones, ultimately leading to the provision of solutions—and (b) develop two alternative assumptions. The aim of problematization methodology is “to come up with novel research questions through a *dialectical interrogation* of one’s own familiar position, other stances, and the domain in literature targeted for assumption challenging” (Alvesson & Sandberg, 2011, p. 252). Hence, by applying this method, we challenge not only other, but also our previous theoretical

positions on this matter. A synthesizing process focused on interpretation and reflection (Alvesson & Sköldbberg, 2005) provides the basis of our problematization process.

In order to problematize through a dialectical interrogation, we follow Alvesson and Sandberg's (2011) six methodological principles: (1) identifying a domain of literature; (2) identifying and articulating assumptions underlying this domain; (3) evaluating them; (4) developing an alternative assumption ground; (5) considering it in relation to its audience; and (6) evaluating the alternative assumption ground. While, for the sake of clarity, the principles of problematization are presented sequentially, the actual process is more iterative than linear. Our problematization process is summarized in Table 1.

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We addressed the first principle— identifying a domain of literature—through the in-depth reading of key texts on service-led growth strategies in product firms. As suggested by Alvesson and Sandberg (2011), we initially focused on an *exemplar* (Kuhn, 1970) that plays a key role in the domain. These domains are socially constructed, “broad categories of study within which specific constructs, theories, and/or procedures can be articulated” (MacInnis, 2011, p. 142). Given the significance of Oliva and Kallenberg's (2003) qualitative study of eleven manufacturers, it was identified as *the* ‘path-defining study’ of the service transition process, which plays a key role in the domain of service-led growth strategies in product firms. It is the most widely cited and arguably most influential study on the topic across various academic disciplines. Next, as recommended by Alvesson and Sandberg (2011), we identified and reviewed later work that drew on this path-defining study in order to investigate whether the service transition concept is still relevant.⁴ The sub-disciplines of B2B and service marketing were covered in particular, although we recognize that the service transition phenomenon has also received increasing attention in disciplines such as

⁴ To locate the relevant literature, we searched the Scopus database for the appropriate papers in academic journals. Furthermore, we continuously read articles on service-led growth, even those published before Oliva & Kallenberg's (2003) service transition study was published, which means that we already had a comprehensive understanding of academic research on the topic and how it has evolved. We have also taken active part in (and scrutinized) the academic debate on service-led growth over the years, for example by presenting and publishing extensively on the topic since 2001.

engineering management and operations management, where the shift is described as one from products to product-service systems (PSS) (Baines et al., 2009; Tukker, 2004). This occurs at the interfaces of diverse sub-disciplines of management, and also in the practitioner-oriented business strategy literature, which advises firms to ‘move downstream’ into services (Wise & Baumgartner, 1999) and ‘transform itself into a service business’ (Cohen et al., 2006).

The second principle— identifying and articulating an assumption underlying this domain— was addressed by transforming what we interpreted as ‘truths’ or facts into an *in-house assumption*. Such an assumption exists within a particular school of thought in the sense that it is shared and accepted as unproblematic by its advocates. Regardless of methodology and academic (sub) discipline, the literature on service-led growth strategies assumes that product firms undertake a service transition, that is, a unidirectional, strategic repositioning from less to more advanced services along a product-service continuum. By questioning the validity of the service transition concept, we thus challenge the in-house assumption. Such a challenge can be a key part in the process of developing new theory (Alvesson & Sandberg, 2011).

The third principle—evaluate the articulated assumption—was addressed by a synthesizing research process (similar to that performed by Kindström and Kowalkowski (2014) and Storbacka *et al.* (2013)). We drew on data collected from five research projects conducted during the period 2001 to 2012, which we merged into emerging themes, structured by a focus on service-led growth strategies. The research projects involved a total of thirteen multinational system suppliers from various industries. In our studies, they are manufacturers representing industries such as aviation, commercial vehicles, compressors, fluid handling and separation, industrial gas, industrial machinery, information security, material handling, mining equipment, packaging systems, roll bearings, and telecommunications. Each firm ranks among the leading global players in its industry (the company names have been changed to ensure confidentiality). Altogether, the study relies on more than 170 interviews and 90 workshops with multiple participants from one or several firms, including customer firms. The interviews generally lasted between 60 and 120 minutes each, and the workshops and focus group sessions approximately two to five hours. The participants had significant

work experience and represented different hierarchical levels and organizational functions. Table 2 summarizes the sample characteristics and specific aim of each company study⁵.

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In the cross-case analyses, certain patterns emerged related to service transition processes. This cross-case analysis reflected individual case analyses of the participating firms. To minimize bias, we performed the individual analyses before collaboratively merging them. Inaccuracies and discrepancies were discussed, and although there were differences between the cases, we identified three consistent service-growth trajectories with certain distinct characteristics.

We combined this critical examination with abductive interference (Locke, 2010, Peirce, 1994), in order to address the fourth principle—develop alternative assumptions. Arguably, in using the ‘logic of what could be’ (Peirce, 1994), abduction is “the only mode of inference that can truly give rise to surprises” (Bertilsson, 2004, p. 377). To stimulate critical reflection and awareness (Alvesson & Sköldbberg, 2005), we further addressed the fourth principle by consulting relevant alternative literature and using it creatively. In our case, we selected literature on systems selling, a domain that goes back to the 1970s (Hannaford, 1974; Mattsson, 1973)—long before the service transition concept was established—and particularly relevant given that most firms in service transition studies are multinational system suppliers.

Finally, in writing this paper, we address the fifth and sixth principles respectively, considering the assumption in relation to its audience, and evaluating alternative assumptions. As Alvesson and Sandberg (2011) point out, the ‘audience’ is not typically a unitary group. In our case, there are multiple audiences; within academia, the main ones identified are scholars at business schools and institutes of technology, whereas the ‘layperson audience’ primarily consists of managers in manufacturing firms in various positions related to the service business. Despite coming from different research disciplines and traditions, in this case, the

⁵ Detailed methodologies of the individual research projects and company information have been reported in several previously published studies. Thus, we do not discuss them in detail in this paper.

two main academic audiences share an interest in the same empirical phenomenon. Related to the sixth principle, the ultimate indicator of whether the problematization is going to be successful is the experience of “this is interesting” (Alvesson & Sandberg, 2011). Despite the importance of rigor and empirical support, which we have strived to obtain in order to achieve credibility, the ability to generate interest among the targeted audiences is pivotal for knowledge dissemination. Our reconceptualization has received positive response among scholars at academic conferences and with the experienced managers with whom we have discussed these issues. As we discuss in the following sections of the paper, our alternative assumption ground accepts some and denies some assumptions made by the audiences, which, according to Alvesson and Sandberg (2011), is an ideal situation for researchers and thus for achieving the objective of this study.

4. Findings: the service transition revisited

In this section, we use the three generic role descriptions of system suppliers developed by Helander and Möller (2007) to categorize and problematize our case companies. We identify three distinct service growth trajectories and explore enablers and barriers for each trajectory.

As in the case of Helander and Möller’s (2007) study, we observe that suppliers concurrently have multiple roles and service strategies. Rather than outsourcing manufacturing activities to a large extent, system suppliers build on their core product-based resources and capabilities to propel service-led growth (Davies, 2004; Ulaga & Reinartz, 2011). Our analysis shows that many suppliers expand rather than transition into new roles. That is, an equipment provider often remains an equipment supplier, even though it could become an availability provider and/or a performance provider as well. All thirteen firms perform the roles of both equipment provider and availability provider, and ten are also performance providers. Additionally, rather than making a complete transition, many suppliers ‘increasingly work towards becoming more of a certain role’. Furthermore, some of our firms clearly focus on standardization as well as customization challenges (in line with earlier systems selling literature). Consequently, we discuss the following three trajectories next: becoming (1) an availability provider; (2) a performance provider; and (3) an ‘industrializer’. Table 3 depicts the associated drivers, enablers, and barriers of each trajectory.

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4.1 Trajectory 1: becoming an availability provider

Much of the service transition literature focuses on this trajectory. Equipment providers expand from basic to more advanced services to eventually become availability providers. Our analysis of thirteen system suppliers shows that this is where many service activities are taking place. Suppliers in our study strived to further develop their service business, based on their existing service capabilities, in order to increase customer loyalty and business growth, and to secure more stable revenue streams. As shown in Table 3, examples of the key enablers along this service growth trajectory include separate service units utilizing automation opportunities, top management attention, and customer maturity, whereas internal resistance, lack of overview and coordination, product-centric sales force, and reliance on unsuitable third parties are some of the main barriers. Additionally, the ability to charge for services that were previously provided for free (i.e., “free-to-fee” transition) often becomes an issue.

For many firms, an important first step in this trajectory is the bundling of products and services previously sold separately. These bundled offerings focus still predominately on input-based value propositions (Kindström & Kowalkowski, 2014; Ulaga & Reinartz, 2011). A common example of this bundling is the growing shares of more extensive service level agreements, which constitute various product-oriented service elements, such as maintenance, repair and overhaul services. Similarly, suppliers increasingly offer process-oriented services such as training and process analysis. Firms often do not move beyond these bundled offerings, except for very few larger contracts and solutions. In fact, even though the original intention of suppliers was to become availability providers, some ‘get stuck’ selling mostly the lower levels of the various service agreements, and become availability providers only to a limited number of their customers (usually the most sophisticated and demanding ones).

Bus Inc. is a good example of a system supplier that has increasingly become an availability provider. The initial key motivators for this firm were customer demand for new types of service offerings and decreasing margins on the equipment sales. Although still mainly product oriented, the firm developed services (e.g., service level agreements, financing services, and rental contracts) with longer time horizons, requiring deeper customer relationships. Spurred by the development of sensor technologies, which enabled the real-time information capture of product usage, the firm also started to offer services focusing on the customer processes and asset efficiency (e.g., fleet management services, driver training, and

fuel management services). Nevertheless, Bus Inc. faced a number of challenges, the prominent being changing the product-oriented culture, which prevailed not only in the firm, but also throughout the dealer network. Internally, the lack of a supporting structure, including roles and processes geared for services and service development, was an initial hurdle and the incentive system, for example, was inappropriate. To address this problem, the firm defined a new development process unique for services, which turned out to be an enabler for new service initiatives (ranging from basic services to operational solutions) and also for internal buy-in. Other enablers included clearly stated strategic goals and mission statements for the service business and the establishment of service-specific roles such as senior service managers and service process owners.

4.2 Trajectory 2: becoming a performance provider

Being a highly integrated system supplier and/or availability provider provides a platform (in terms of competences and infrastructure) for offering even more advanced solutions which solve strategically important customer-specific problems (Storbacka, 2011). These offerings might be situation-specific and resemble project-based sales (Kujala et al., 2010), and are therefore not offered to most customers as part of the standard portfolio. As Azimont, Cova, and Salle (1998) argue, system suppliers may evolve beyond solving customers' operational problems to a more strategic form of marketing which addresses long-term objectives. Although the difference between availability and performance provider may seem rather subtle at first sight, compensation becomes linked to the customers' value-in-use and business objectives to an even greater extent than before. Our analysis showed that a promise to achieve performance adds complexity and risk to the system supplier and the overall system, despite potentially increased returns.

Consistent with Matthyssens and Vandenbempt (2008), a higher degree of both technical application integration and business process integration facilitate the role of performance provider. Key drivers of a trajectory of increasingly becoming a performance provider are linked to customer demand (e.g., flexibility and knowledge gaps) as well as means of differentiating, building strategic partnerships with customers, and achieving lock-in effects (although the two last drivers may be partially incompatible). Interestingly, in some of our cases, the drivers for increasingly becoming a performance provider derived from high technical integration potential on the equipment/system supply side, for example through automation opportunities, rather than from high-level business process integration (i.e., an

availability provider role). Thus, performance and availability offerings (as well as the growth trajectories) may be independent of one another.

In addition to managing integration challenges, other key barriers include identifying and managing increased operational and financial risks, and integrating and coordinating third-party components and competence. In order to overcome these barriers, firms need risk mitigation capabilities, long-term relationships with strong commitment, trust, flexibility and a willingness to share both ‘gains and pains’, and to avoid excessive unplanned customization. Due to the barriers and limited perceived benefits, three firms in our study have not pursued this trajectory on a broad scale. One example of such a firm is Forklift Inc., which frequently explores new types of offerings and revenue models, such as a performance solution for a sawmill customer, for which truck drivers are included in the contract (but never in the standard solutions) and payments are linked to output produced (i.e., timber). However, managers perceive that, overall, risks are too high and there are no evident additional benefits, compared to availability-based solutions and revenue models. Materials handling is generally not a core activity of the firms’ key customers, which means that it might be difficult to find commonalities between the performance of Forklift Inc. and the customers’ production processes, such as the “pay-by-ton” contract with the sawmill customer.

On the other hand, Mining Inc. is an example of a firm providing performance-based solutions on a larger scale. Departing from availability-based service level agreements, and enabled by its technical application integration, expert service capabilities and process knowledge, the firm has developed performance-based solutions, such as “pay-by-ton” contracts with production improvement responsibility, in close cooperation with a few large mining customers. For these customers, uptime and productivity are more important parameters than operating costs. In these cases, the interests and incentives of both parties are strongly aligned, and Mining Inc. has personnel permanently on site to provide such services as maintenance planning, shutdown supervision, personnel training, and inventory management.

4.3 Trajectory 3: becoming an ‘industrializer’

While an expansion from basic to more advanced solutions was evident in our firms, a number of cases also revealed standardization challenges and opportunities. This service growth trajectory is very different from service expansion since it departs from the

customized, operational solutions that many of the system suppliers have been offering for a long time, in some cases for several decades (such as availability-based agreements and end-to-end responsibility).⁶ Examples include long-term service agreements and equipment rental, as well as operations management. There is often inherent potential to utilize elements of such process-oriented services and solutions, which are usually offered to large key account customers. Firms can capitalize on the knowledge and experience gathered in these more complex, resource-demanding and relationship-intensive offerings, by downsizing them and standardizing various elements, thus being able to offer them to more customers. In line with Storbacka and Pennanen (2014, p. 14), who argue that “industrialization means standardization and ‘productizing’ the solutions in order to create the prerequisites for repeatability and scalability”, we refer to this trajectory as ‘becoming an industrializer’.

Some of the key drivers of these standardization activities are economies of scale, utilization of in-house knowledge and resources, and the ability to address a larger customer base (i.e., market growth). Furthermore, the process is a means of offsetting the higher operational and strategic risks associated with operational solutions, and of sharing development costs with other customers. Enablers include long-term service experience, profound knowledge of customers, product and process data, feedback loops and learning from existing solutions and lead customers, and modularization competence. However, if these enablers are lacking they may constitute major hurdles, together with a lack of internal resources, managerial attention, efficient field service organization, and capabilities for systematically standardizing, formalizing, and scaling up customer and market-specific offerings. As the quote in the introduction of the paper shows, this form of industrialization is challenging. Although several of the case firms have attempted to pursue this trajectory, only a few have been successful.

This trajectory from customized to standardized offerings consistently reflects Storbacka’s (2011) concept of industrialization, and is consistent with Gallouj and Weinstein’s (1997) view of service innovation processes. In many cases, new services and solutions are developed ad hoc, and in close cooperation with customers (e.g., new, customized offerings), rather than in a planned fashion. Potentially, elements of such offerings can later be standardized and formalized, making it possible to offer them also to other customers as well (Gallouj & Weinstein, 1997; Kowalkowski et al., 2012). System suppliers may use this

⁶ In accordance with the systems selling literature, many of the suppliers have been offering operational solutions since the 1960-1970s, albeit to a limited number of customers back then.

approach, which goes beyond what Davies and Brady (2000) call economies of repetition, to extend their service business to less advanced services, thereby addressing the needs of a larger customer base. From a business process perspective, this means an increased emphasis on the ability to commercialize parts of more complex offerings, which includes not only industrialization and standardization competences, but also take-to-market and scale-up competences.

As discussed, this trajectory is seldom a straightforward path for system suppliers. Several of the firms we analyzed have made the effort, with limited or no success (cf. Gebauer et al., 2005). One of these is Aviation Inc. Although its sub-system suppliers such as Rolls Royce, General Electric, and Panasonic successfully pursued service-led growth (50% of the revenue comes from services), Aviation Inc. itself has so far failed to offer services (only 4% of the revenue comes from services). Aviation Inc. does have some fleet and maintenance solutions for large customers, but was unable to industrialize these services and downscale them to the many small and medium-sized flight operators. Consequently, the component suppliers filled this gap by rapidly extending their service businesses. The main competitor, on the other hand, was better able to industrialize its services (15% of the revenue now comes from services). Both system suppliers are now competing for the future service market, which extends beyond the aircraft fleet and looks more into larger aviation systems such as logistics solutions, and even towers and airports.

Gas Inc., on the other hand, is one of the most successful of our case companies. The firm supplies industrial gas solutions to key customers with large operations that are more sophisticated and demanding than most of its customers (primarily small and medium-sized firms). These solutions range from the continuous supply of gas through gas management, to total care of a customer's entire array of gas-related needs. By unbundling and recombining key elements of the offerings into standardized contracts (which can be complemented by supplementary services), the firm was able to 'productify' the advanced offerings and sell them to a larger, more heterogeneous customer base. Apart from the general external drivers tied to the environment (increased competition, product market saturation, and eroding margins), internal drivers were present, such as taking advantage of specialized in-house competences (that many customers lack). One challenge has been, for both the sales and the service organizations, to fully understand and visualize the value of these complex offerings as they are scaled down. Another continuous challenge is the need for coordination between the two organizational units (i.e., sales and service delivery) to ensure service quality and a

shared understanding of the service processes. Enablers for the trajectory were the training of relevant personnel, developing structured product sheets and demonstrating the indirect effects of service sales on product sales. Another important enabler is an in-house service organization from which Gas Inc. delivers all services through their own local organization. Similarly, establishing organizational units and roles dedicated to service development was pivotal to securing the competence to package the standardized offerings attractively.

5. Discussion

In this paper and throughout our problematization process, we have argued that the established assumption underlying the service transition concept—a unidirectional, strategic repositioning along a product-service continuum—is problematic. In other words, the service phenomenon has proven to be more multifaceted and multidirectional than the marketing literature frequently assumes (and also product-service system literature, which generally portrays service transition as a linear product-PSS continuum (Tukker, 2004)). More specifically, we identified three service growth trajectories in system suppliers: becoming (1) availability provider; (2) performance provider; and (3) ‘industrializer’. These trajectories and the three system supplier roles are depicted in Figure 1. We now explore these findings further, developing and discussing possible alternative assumptions and new implications for theory and practice.

---INSERT FIGURE 1 HERE---

5.1 *Alternative assumptions*

As previously discussed, rather than transitioning from products to services, firms *expand* their business through the addition of new, and the bundling of existing, services to their portfolio, infusing higher levels of service into their offerings. It is important to note that, even though the overall service expansion trend is evident (firms expand increasingly along Trajectory 1 and/or Trajectory 2), many firms, just like all of the system suppliers in our research projects, still supply equipment and basic, product-oriented services, parallel to more advanced, process-oriented ones. Furthermore, as Trajectory 3 indicates, service challenges and opportunities are linked to expanding from products towards services and solutions, *as well as* to standardizing, and scaling down previously customized offerings. That is, system

suppliers industrialize their solutions in order to make them attractive and feasible to deliver to a larger customer base. These customers are generally existing equipment customers that have not previously purchased such offerings, either because such offerings were too extensive for their needs or because they were not profitable to offer. Thus, in addition to experiencing the challenges and opportunities associated with expanding along ‘only’ one trajectory, many firms also struggle with balancing expansion and standardization activities.

Inherent in the service transition assumption is the notion that firms (should) increase their relational orientation and hence need to develop long-term and close relationships with customers (Oliva & Kallenberg 2003; Penttinen & Palmer 2007). However, most, if not all, system suppliers have had long-term relationships with their key customers for a very long time.⁷ Accordingly, while long-term relationships are nothing new for most of these system suppliers, it is clear that for the customers and the suppliers, an availability and/or performance provider role make the relationships strategically more important (including a more proactive, problem-solving approach). Consequently, system suppliers need to approach customers at a higher hierarchical level, and frequently with respect to multiple functions and levels. Nevertheless, there is generally a limit to the number of strategic collaborations a firm can viably establish with customers (Zolkiewski, 2004). This reflects the fact that a larger-scale system requires more wide-ranging and strategic customer relationships (and more extensive relationship investments). Thus, system suppliers have to decide on what relationships they should invest in from a strategic perspective. Such decisions would therefore also have implications for the relative emphasis of the different system supplier roles of the firm.

This paper shows that system suppliers generally perform several distinct roles simultaneously, rather than transitioning from one role to another on a product-service continuum. In our thirteen case firms, all play at least two of the three system supplier roles (several firms have held them for decades), and ten of them play all three. These findings support previous ones from Helander and Möller (2008) and Windahl and Lakemond (2010). Rather than following an incremental transition over time (from equipment provider to availability supplier, and ultimately performance provider), firms work concurrently with different roles and at the same time, depart from them to pursue different service growth trajectories requiring different competences and activities. Arguably, some of the difficulties

⁷ This has been acknowledged and emphasized by various schools of thought, such as the IMP Group, described in several cases by Håkansson and Snehota (1995).

experienced are not necessarily associated with the process of following a service growth trajectory, but rather with managing this ‘co-existence’ of different roles and business models (Markides & Charitou, 2004).

In summary, we suggest two interrelated, alternative assumptions: system suppliers need to (a) balance business expansion activities, leading to more complex service offerings, with the standardization activities leading to less complex (i.e., easier to repeat) service offerings; and consequently (b) manage the co-existence of different roles. The implications of these two alternative assumptions are discussed below.

5.2 Implications for theory and practice

Our two assumptions have implications for both theory and practice. It should be noted, however, that rather than rejecting, they complement previous studies. Arguably, the transition assumption both favors and increases our understanding of the opportunities and challenges related to activities along one specific service growth trajectory. For instance, the extant literature uses the concept of categories of service offerings and service strategies more or less interchangeably (Lightfoot & Gebauer, 2011; Matthyssens & Vandenbempt, 2010; Penttinen & Palmer, 2007; Raddats & Easingwood, 2010), and frequently assumes that firms offer one category of services at a time (e.g., product-based services, availability solutions, performance solutions) and pursue a specific service strategy (i.e., role) (cf. Raddats & Kowalkowski, 2014). In contrast, our assumptions emphasize the importance of considering strategies revolving around how the different roles can and should complement and leverage one another, and where to place the emphasis in terms of types of offering.

Theoretically, this paper highlights the need to break free from the product-service continuum discourse. System suppliers (managing and developing different types of roles and offerings) do not fit into the conventional services and goods dichotomy, in which goods are seen as standardized and services as customized. In addition, parallels can be drawn with the debate between service expansion and service efficiency, which has prevailed among service scholars (Rust et al., 2002). We also identify a difference in focus between different disciplines. Whereas marketing scholars tend to focus more on market expansion, service-led growth, and customer relationships (Eggert et al., 2014; Kunz & Hogreve, 2011), operations management scholars focus more on the efficiency of service operations and processes (Chase & Apte, 2007; Johansson & Olhager, 2006). Arguably, our new assumptions demonstrate the need to merge these so-far separate discussions.

From an implementation point of view, our first assumption emphasizes the importance of *balancing expansion and standardization activities*, thus raising questions about how to prioritize resources and product- and service-related activities. Challenges are likely to be associated with identifying elements, not yet proved in a larger market, which can be scaled up, and to modularize these to an extent that enables a useful addition to and match with the existing portfolio. By doing so, system suppliers do not become less availability or performance providers. Rather, they expand their business scope by focusing on the service needs of a larger group of potential customers. Also, by focusing on standardizing various components of their solutions, expanding their service skills, and achieving economies of scale in their service operations, system suppliers might potentially become more cost-efficient in their roles as availability and performance providers. Hence, by taking advantage of the standardization-customization interplay inherent in the different roles, offerings can become more competitive and the delivery process more efficient. In line with Storbacka and Pennanen (2014), system suppliers supplying different types of solutions need to (a) thoroughly understand their customers' value creating processes (as also emphasized in literature dealing with the transition assumption) *and* (b) define and codify common processes, so that they can be replicated efficiently. Consequently, our first new assumption stresses the importance of so-called solution platforms, supporting availability and performance offerings, as well as less customized solutions. Hence, our first assumption highlights organizational challenges in which the integration (commonly emphasized in the solution literature) of production and delivery systems need to be balanced with the need to separate the two in practice.

Our second assumption emphasizes the importance of *managing the co-existence of different roles* and provides a more complex view of service-led growth activities, as well as of how to manage customer relationships. In terms of implementation challenges, this assumption stresses that firms need to decide strategically on expansion activities along Trajectories 1 and/or 2 and/or 3, rather than 'just' follow a service transition which takes the increased value creation for granted. Arguably, this will help managers recognize that even if they perceive their role as a performance provider as increasing the value-creation potential (compared to 'just' being an availability provider), it could in fact be associated with more risk but no increased revenues or higher margins. If the system scope remains the same (i.e., the same product and service elements are integrated and provided), the firm does not necessarily capture a larger share of the total customer spending. Even if the revenue model becomes

more aligned with customer value-in-use there is no guarantee that (1) more value is created and (2) that the firm captures a larger share of this value.

Our finding that system suppliers can become performance providers, with a starting point both in the role as equipment seller and as an availability provider highlights coordination and organizational challenges. For example, a clear division between so-called capital expenditure (capex) activities and operational expenditure (opex) activities characterizes several of our firms. A high level of business process integration on the opex side enables activities along the availability trajectory, whereas substantial technical integration on the capex side enables activities along the performance trajectory. In order to adapt a fully-fledged performance role (and/or availability role), a key organizational challenge for many of these firms is related to managing capex/opex integration (Storbacka et al., 2013). Furthermore, digitalization serves as a catalyst for all three trajectories and roles. Correctly implemented (a modular, scalable architecture, quality plans, automated back-office processes, etc.), it enables smart services (Schumann et al., 2012), and can facilitate sales, deployment, post-deployment, and scale-up activities and processes, and possibly also help coordinate the different roles. Hence, new technologies change the ways these firms can compete.

To conclude, this paper has taken an important step towards breaking away from established ‘product-service transition thinking’, thereby identifying potential opportunities for service-led growth. The approach can therefore help revise assumptions and mental models held by managers. As Strandvik et al. (2012) argue, mental models affect managerial priorities, decisions, and actions. By recognizing the multifaceted nature of service-led growth strategies, managers can identify alternative growth trajectories and market spaces that would not be evident through thinking only in terms of more linear transition patterns. These market opportunities include not only more extensive offerings, but also the development and commercialization of less complex services that can be sold to customers which had not bought such offerings. Rather than transitioning and changing market position, service-led growth and business development becomes a matter of balancing different parallel roles and strategically deciding where to place the emphasis and why.

6. Limitations and research directions

In heeding calls for more research on service-led growth strategies in product firms (Bitner & Brown, 2008; Evanschitzky et al., 2011; Jacob & Ulaga, 2008; Kunz & Hogueve, 2011; Ostrom et al., 2010), it is crucial not to uncritically accept the usual assumptions and blind

spots in the discipline and research and business communities but rather to continuously reassess them through vigilant, academic inquiry. Our alternative assumptions, which were developed through just such inquiry, facilitate for new explorations of an important domain, and the limitations of this paper offer fruitful avenues for further research. First, although our findings highlight multiple roles and different service growth trajectories of system suppliers, we do not address how to best manage an extensive services and solution portfolio, and how to pursue parallel service strategies which have different aims. For instance, both defending the product business (the equipment supplier role) and providing an overall solution, even at the expense of future equipment sales, should be given serious consideration. Given that system suppliers generally pursue service *expansion* rather than transition from products to services, this is a promising area for research.

Second, managers across firms expressed the need to utilize knowledge from customized solutions, such as availability contracts, when providing less sophisticated services. However, only in a few cases were such initiatives successful, and such systematic industrialization and ‘reverse service infusion’ remains an under-researched area. Future research might provide a more comprehensive view by integrating theories on organizational learning and human resource management.

Third, our study has highlighted service infusion initiatives, but prior studies have also identified various *service defusion* initiatives (Gebauer & Kowalkowski, 2012). This refers to cases of deservitization, where firms to various degrees, have turned away from in-house service provision (Cusumano et al., 2014; Finne et al., 2013). Future research should examine the conditions under which firms will undertake service infusion and service defusion initiatives. For example, it would be interesting to investigate under which circumstances deservitization is an espoused and active strategy of the firm rather than a consequence of failed service infusion initiatives.

Finally, the scope of the system varies extensively among our case firms, ranging from industrial gas supply and various sub-systems to extensive, integrated systems. Future research should provide further insights into the preconditions that different types of product firms face regarding service-led growth, analyzing not only the focal firm, but also the overall service network. It is clear that many of the challenges and opportunities are contextual, so that comparing differences between contexts warrants further investigation. To conclude, we

hope that our work will stimulate further critical reflection and research in this increasingly important research domain.

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Figures

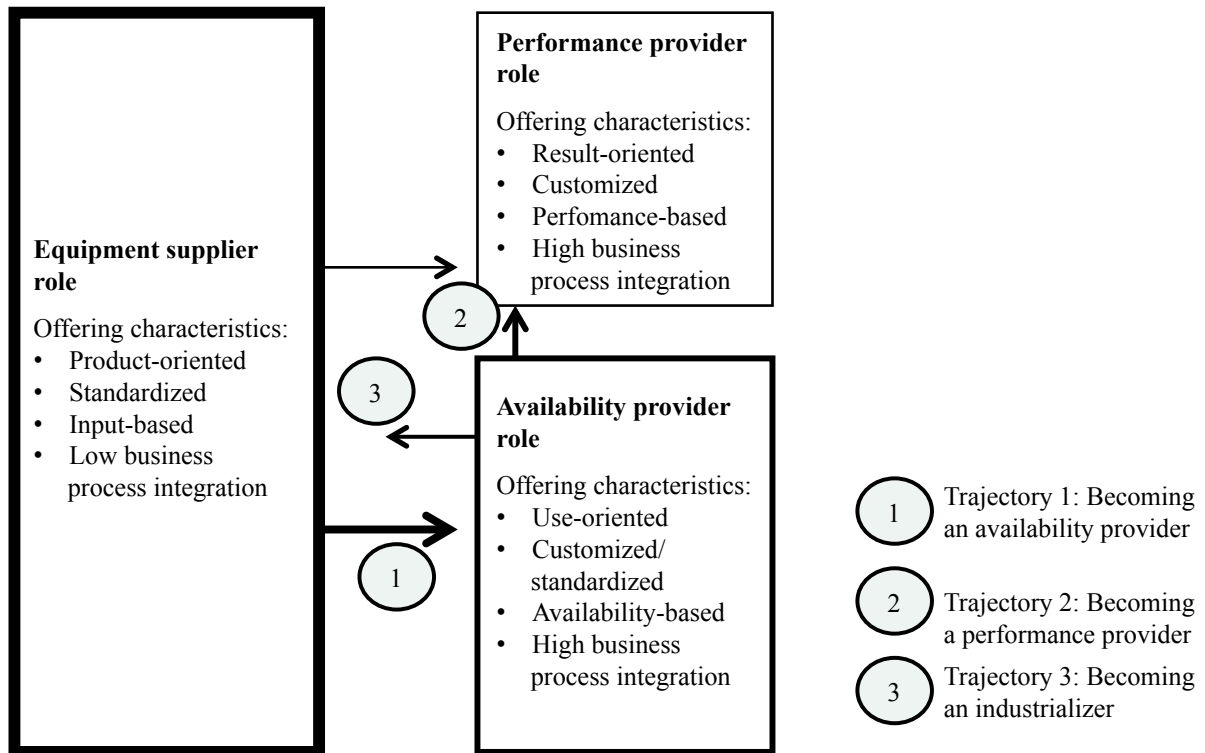


Figure 1. System supplier roles and service growth trajectories.

Note: The thickness of the arrows and boxes only indicate that certain trajectories and roles are more prevalent than others and do not show exact proportions.

Tables

Table 1. Research process based on Alvesson and Sandberg's (2011) problematization methodology.

Principles for identifying and challenging assumptions	Main techniques
<i>1. Identify literature domain:</i> What main bodies of literature and key texts make up the broader domain?	<ul style="list-style-type: none"> • In-depth reading of key texts on service-led growth strategies in product firms • Identification of a path-defining study
<i>2. Identify and articulate an assumption:</i> What major assumption underlies the literature within the identified domain?	<ul style="list-style-type: none"> • Transforming established 'truths' and facts into an in-house assumption about service transition • Challenging our own positions
<i>3. Evaluate the articulated assumption:</i> Is the identified assumption worth challenging?	<ul style="list-style-type: none"> • Pattern-matching and cross-case analysis of qualitative data • Individual and collaborative analyses • Combining critical examination with abductive interference
<i>4. Develop alternative assumptions:</i> What alternative assumptions can be developed?	<ul style="list-style-type: none"> • Consulting literature on systems selling • Combining critical examination with abductive interference
<i>5. Relate assumptions to audience:</i> What major audiences rely on the challenged assumptions?	<ul style="list-style-type: none"> • Reflect on the views held by target audiences • Writing of the paper
<i>6. Evaluate alternative assumptions:</i> Are the alternative assumptions likely to generate a theory that will be regarded as interesting and useful by the targeted audiences?	<ul style="list-style-type: none"> • Generate interest among audiences by accepting some and rejecting the common assumptions • Writing of the paper

Table 2. Sample characteristics.

Case firm	Interviews / workshops	Time period	Position of informants	Desired purpose(s)
Aviation Inc.	4 / 2	2006-2009	Management board	Understanding challenges in the transition from products to services
Bearing Inc.	8 / 3	2010-2013	Service managers, quality managers, sales managers, sales persons, service technicians	Understanding service deployment and service business development
Bus Inc.	6 / 4	2006-2009	Service managers, senior service directors	Understanding service business development in product firms
Compressor Inc.	2/2	2003-2004	Marketing manager, sales engineer	Understanding service business development, and focusing specifically on performance offerings and business model innovation
Forklift Inc.	26 / 4	2004-2009	Central and local service managers, senior service directors, managing directors, business development managers, rental managers	Understanding service business development in product firms, especially the strategic development process of service infusion
Gas Inc.	25 / 4	2001-2013	Marketing managers, sales managers, service managers, sales people, service technicians	Understanding service business development, service sales and visualization of value
Mining Inc.	10 / 4	2004-2009	Senior vice president, vice president strategic marketing, regional mining manager, service managers	Understanding service business development and multi-channel opportunities and challenges
Packaging Inc.	12 / 12	2001-2010	Management board, service managers	Understanding challenges in the transition from products to services, service innovation, and commercialization
Pump Inc.	28/ 17	2002-2009	Global aftermarket manager, general managers, range of managers in different divisions: service, rental, marketing, business development, etc.	Understanding service business development in product firms; and focusing specifically on performance offerings and business model innovation
Robot Inc.	6 / 2	2010-2013	Service managers, sales managers	Understanding service business development and service deployment
Security Inc.	12 / 22	2010-2012	Head of service organization, service managers	Innovation of customer care and service products
Separator Inc.	29/12	2001-2006	CEO, Managers corporate level, range of managers of different divisions: sales engineers, process specialists, etc.	Understanding service business development, and focusing specifically on performance offerings and business model innovation
Telecom Inc.	6 / 2	2013-2014	Head of service research, service development managers, products managers, sales managers	Understanding business model innovation related to service innovation

Table 3. Service growth trajectories and associated drivers, enablers, and barriers.

Trajectory	Key drivers	General enablers	Main barriers	Case firms pursuing the trajectory
1. Becoming an availability provider	Business growth, customer loyalty, stable revenue streams	Separate service units, top management focus, customer maturity, automation opportunities enabling process control	Internal resistance, lack of overview and coordination, product-centric sales force, reliance on unsuitable third parties	All thirteen firms
2. Becoming a performance provider	Customer demand, means of differentiating, potential to build strategic partnerships, customer lock-in	Long-term customer relationships, mutual interests to share 'pains and gains', risk mitigation capability, automation opportunities enabling process control	Increased operational and financial risks, increased need to integrate and coordinate with third parties, excessive unplanned customization	Ten firms completely, three firms to less extent
3. Becoming an 'industrializer'	Economies of scale, utilization of in-house knowledge and resources, potential to address a larger customer base	Long-term service experience, profound customer knowledge, product and process data, organizational learning, modularization competence	Lack of internal resources, managerial attention, efficient field services, and capabilities for standardizing and scaling up solutions	Three firms completely and three firms to less extent

Biographical sketches

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