

SERVICE GROWTH IN PRODUCT FIRMS: PAST, PRESENT, AND FUTURE

Christian Kowalkowski ^{a,b*}

Heiko Gebauer ^{c,a}

Rogelio Oliva ^d

^a Department of Management and Engineering, Linköping University, SE-581 83 Linköping, Sweden

^b Department of Marketing, CERS – Centre for Relationship Marketing and Service Management, Hanken School of Economics, PO Box 479, FIN-00101 Helsinki, Finland

^c Eawag (Swiss Federal Institute of Aquatic Research), Überlandstrasse 133, 8600 Dübendorf, Switzerland

^d Mays Business School, Texas A&M University, MS 4217, College Station, TX 77843-4217, USA

* Corresponding author. tel: +46 13 281571

E-mail addresses: christian.kowalkowski@liu.se (C. Kowalkowski), heiko.gebauer@eawag.ch (H. Gebauer), roliva@tamu.edu (R. Oliva).

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Highlights

- Our research challenges prevailing assumptions in the existing research domain on services in product firms
- This domain has a well-established tradition in terms of output, but we demonstrate that theoretically it is still largely in a ‘nascent’ phase
- We depart from the prevailing assumption that service transition is a linear process, but suggest a more evolutionary perspective
- We demonstrate that the service business grows not only organically, but merger & acquisitions play an important role
- We demonstrate that the research domain is increasingly relevant for non-manufacturing sectors, emerging markets, and start-up companies

Abstract

Service growth in product firms is one of the most active service research domains and is open to a variety of conceptualizations. This article provides a critical inquiry into the past, present, and future of the research domain. The evolution of the research on service growth is discussed in two phases: (1) setting the boundaries of the research domain, and (2) emergence of the conceptual foundation. We find that while research in this area has a well-established tradition in terms of output, theoretically it is still largely in a ‘nascent’ phase. Next, we highlight the contributions of the papers in this special section, emphasizing their challenges to prevailing assumptions in the research domain. We conclude by identifying, from the contributions to this special section, suggested themes for further research on service growth: the assessment of empirical evidence of the impact of service growth on firm performance, the role of merger & acquisitions in the service growth strategy, the exploration of single/multiple positions along the transition line, the process of adding or removing services, and expanding the context of service growth beyond product manufacturing firms.

Keywords: Service growth, servitization, deservitization, service infusion, product-service system, research agenda

1 Introduction

Service growth in product firms has become one of the most active service research domains, to the point that it has been identified as a strategic research priority (Ostrom *et al.* 2015). This domain is concerned with product firms shifting from developing, manufacturing, and selling products to innovating, selling, and delivering services (e.g. Davies, 2004; Gebauer *et al.*, 2010; Oliva & Kallenberg, 2003; Tukker, 2004; Ulaga & Reinartz, 2011). This shift towards services is typically a strategic response to reaching the maturity phase in the product lifecycle and, thus facing limited revenue growth. Services are a way to escape the product commoditization trap; for example, in the elevator industry, companies like Otis and Kone enjoy maintenance service margins of 25-35% compared with a margin of approximately 10% for new equipment (The Economist, 2013). If successfully deployed, services can become an important source of revenue and profits, ensure customer satisfaction and loyalty, and support firms' growth (Eggert *et al.*, 2014; Fischer, Gebauer, & Fleisch, 2012). In addition, services can play a powerful role in building brand equity in business markets (Davis, Golicic, & Marquardt, 2008), especially in industries where it is difficult to maintain competitive product differentiation due to commoditization (Mudambi, Doyle, & Wong, 1997).

Across industry sectors, firms are actively pursuing service growth strategies. Examples include traditional manufacturing corporations—such as General Electric and Siemens—as well as software firms like Microsoft, and former hardware firms like IBM. For example, Microsoft is increasingly orienting towards services with strategic initiatives such as re-formatting its Office suite into a cloud-based subscription model and IBM is transforming into a cognitive solutions and cloud platform company. The shift, however, is not limited to large firms, as many SMEs are also re-orienting towards services (e.g., Kowalkowski, Witell, & Gustafsson, 2013).

Service growth is open to a variety of conceptualizations (e.g., servitization, hybrid offerings, integrated solutions, transition from products to services, systems selling, and product-service systems), and has attracted interest from a variety of disciplines (e.g., engineering, innovation, marketing, operations, services, and general management). Theoretical and empirical work has been accumulating with a sharp rise in publications, special issues, and conferences in recent years (Rabetino *et al.*, 2015). Well over 180 scholarly journal articles on this topic are published every year, as well as books geared towards academics (e.g., Fischer *et al.*, 2012) and managers

(e.g., Baines & Lightfoot, 2012). Many findings have been proven to be highly relevant to industry and have attracted management attention. While the history of research on service growth in product firms can be traced back to the mid-1980s, its antecedents go back to the mid-1800s, when the expansion of the railroad and the telegraph networks in the US set the stage for the vertical integration of manufacturers into marketing, sales, repair, financing, and purchasing activities (Schmenner, 2009).

However, articles increasingly replicate existing knowledge in an exploratory and descriptive manner. The identification and investigation of small empirical gaps dominates current contributions and results in incremental theoretical improvements. Much of the research still lacks a strong theoretical foundation and substantial theoretical extensions are rare (Oliva, 2016). The purpose of this special section is to promote and bring together critical research that challenges prevailing assumptions and strengthens the theoretical foundations. As a way to frame the contribution of this special section, we discuss the past, present, and future of the research domain.

2 Past

The evolution of the research field can be divided into two distinct phases (see Figure 1). However, critical analysis suggests that despite tremendous research interest and output, which suggest that the research tradition is well established, the research domain is still in a theoretical and methodological nascent stage.

2.1 Phase 1: Setting the boundaries of the research domain

Service growth strategy was identified as a recurring phenomenon, and the boundary of the research domain was established during the last two decades of the last century, in what we call the first phase of the research evolution. The research started with the idea that services were customer service, that is, an add-on to products and an important part of the buyer-seller relationship (Bowen *et al.*, 1989; Martin & Horne, 1992) and means of competitive advantage (Matthyssens & Vandenbempt, 1998; Vandermerwe & Rada, 1988). Conceptually, Bowen *et al.* (1989) suggested two alternative configurations of service orientations in manufacturing: service-oriented manufacturing and prototypic manufacturing characteristics. If manufacturers emphasize service-oriented goals, such as customer responsiveness and high customer contact, then they are

urged to adopt a service-oriented manufacturing configuration based on organizational arrangements and resource allocation originating in service literature.

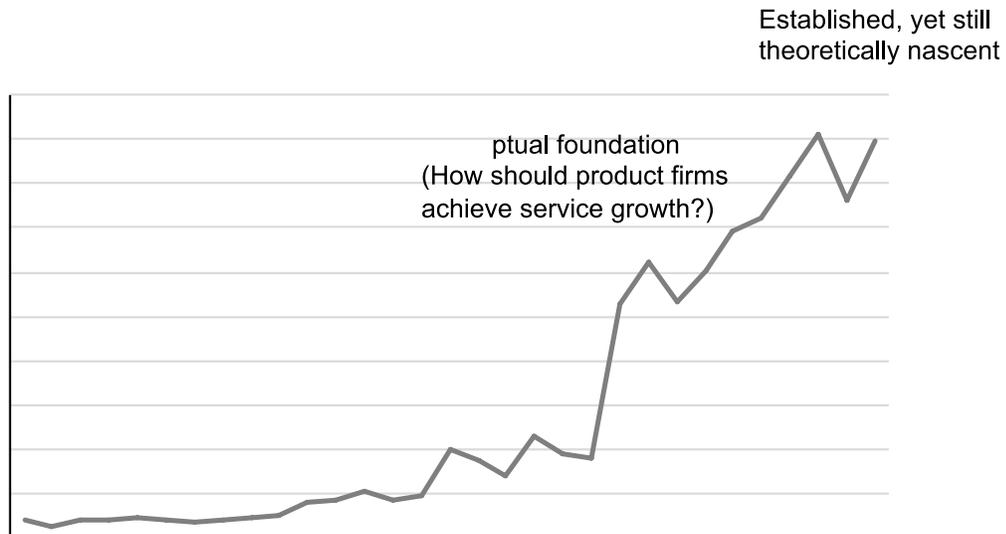


Figure 1. The evolution of research on service growth in product firms
(Adapted from Gebauer & Saul, 2014)

One of the seeds for this line of research was Vandermerwe and Rada's (1988) introduction of the term "servitization of business". While servitization today has become almost synonymous with service growth in product firms, Vandermerwe and Rada regard it as a competitive tool relevant for companies in all industries on a global scale. It allows companies to create value by blending services into the overall strategies of the company. Echoing Levitt's (1972) argument that "Everybody is in service" (p. 42), Vandermerwe and Rada (1988) argued that simplistic distinctions between goods and services were outdated: "Most firms today, are to a lesser or greater extent, in both. Much of this is due to managers looking at their customers' needs as a whole, moving from the old and outdated focus on goods or services to integrated "bundles" or systems, as they are sometimes referred to, with services in the lead role" (p. 314). Such arguments resonated with practitioners and led to the formation of strategic, financial, and

marketing arguments for service growth in product-oriented companies (e.g., Anderson & Narus, 1995; Lele, 1986; Potts, 1988; Quinn *et al.*, 1990).

2.2 Phase 2: Emergence of the conceptual foundation

The second phase starts around 2000 with the realization that taking advantage of strategic, financial, and marketing benefits requires different types of services (e.g., after-sales services, value-added services, services supporting the product, or services supporting the customer). During this phase, the majority of the contributions and conceptualizations that built the *intellectual core* of the research field emerged. These conceptualizations include product-service systems (PSS) (Mont, 2002), the transition from products to services (Oliva and Kallenberg, 2003), integrated solutions and systems integration (Davies, 2004), service infusion (Brax, 2005), and service business development (Fischer *et al.*, 2012). During this phase, research also explored barriers and key success factors for services in product firms (e.g., Gebauer *et al.*, 2005; Oliva & Kallenberg, 2003). Gebauer *et al.* (2005) points out that service growth is far from easy. Companies often face the service paradox: they invest in services, but do not earn the expected, corresponding returns. The emergence of the conceptual foundations of the field is closely intertwined with growing interest from practitioners looking to the field to answer questions like: how to achieve service growth, how to transform business models from selling products to selling solutions, how to innovate new services, how to change from giving services away for “free” to charge for services, and so on.

Mathieu’s (2001) distinction between service offerings related to the manufactured goods (SSP: service supporting the supplier's product) and more product-independent services focusing on the customer’s processes (SSC: service supporting the client’s action in relation with the supplier's product) is perhaps the most wide used classification of industrial services. For example, it serves as one of two dimensions in several service taxonomies (e.g., Oliva & Kallenberg, 2003; Raddats & Easingwood, 2010; Ulaga & Reinartz, 2011; Windahl & Lakemond, 2010).

The most cited publication is Oliva and Kallenberg’s (2003) field study of equipment manufacturers. The article proposed one of the first process theories for service growth and its service transition concept has had major influence in the research domain, regardless of academic discipline. It found that in most of the firms sampled, the transition is a deliberate transformation effort that involves disruptive developments of new capabilities as response to strategic threats

and opportunities. For each of these disruptions (i.e., steps) they identified the series of triggers, goals, and actions normally deployed, and they argued that the adoption of new services seemed to be based on a trial and error capability-centered development. It is, however, interesting to note that the transition framework that they used to design the inquiry (Figure 2) has been interpreted as a proposal of a smooth and continuous evolution towards more services, although they clearly state that that such evolution is not expected and, indeed, did not find evidence for it. Oliva and Kallenberg (2003) were also the first to articulate the potential cultural conflict between the existing product and the emerging service organizations. Previous work (Oliva 2001, Oliva & Sterman 2001) had suggested that a services operation run with manufacturing's emphasis on throughput and efficiency will result in eroding service quality standards. Indeed, Oliva and Kallenberg (2003) found that firms that successfully managed to deploy services tended to isolate the service organization early in the transition.

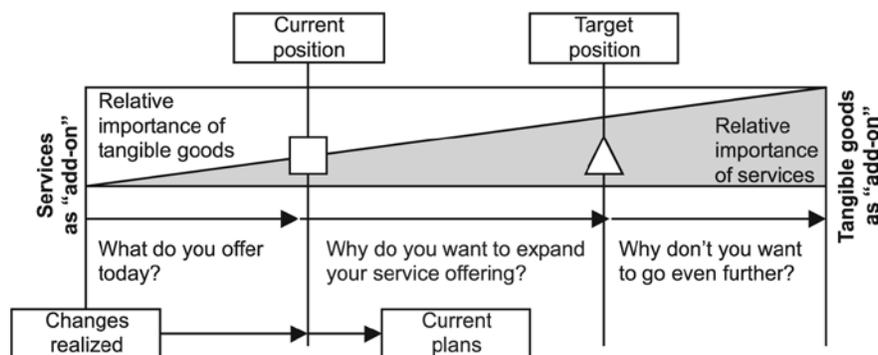


Figure 2. The product-service continuum – research design
(From Oliva and Kallenberg, 2003, p. 162)

Finally, while the trend towards integrated solutions can be traced back to the emergence of build-operate-transfer (BOT) infrastructure projects in the 1980s (Brady, Davies, & Gann, 2005), it was not until this phase that important conceptual and empirical works on integrated solutions were published (e.g., Davies, 2004; Davies *et al.*, 2007; Nordin & Kowalkowski, 2010; Windahl & Lakemond, 2006). For instance, Tuli *et al.* (2007) proposed a new perspective on the concept of a solution; in contrast to extant product-centric views, they suggested that solutions should be conceptualized as a customer-supplier relational process comprising of four distinct sub-

processes: customer requirements definition, customization and integration of goods and/or services, deployment, and post-deployment customer support. Hence, solution projects require longer lifecycles than traditional products or systems—from high-level pre-bid negotiations to a long-term operational service phase—and the provider needs to acquire or develop skills to cover all four phases of the lifecycle (Brady *et al.*, 2005).

Table 1 summarizes the intellectual core of service growth in product companies. The individual contributions can be clustered into solution delivery (e.g., Davies, 2004; Galbraith, 2002; Davies *et al.*, 2006; Davies *et al.*, 2007; Brady *et al.*, 2005; Windahl & Lakemond, 2006; Sawnehey *et al.*, 2004; Matthyssens & Vandenbempt, 2008), solution marketing (e.g., Tuli *et al.*, 2007; Cova & Salle, 2008), service business performance (e.g., Fang *et al.*, 2009; Gebauer *et al.*, 2005; Brax, 2005), services growth strategies (e.g., Oliva & Kallenberg, 2003; Ulaga & Reinartz, 2011; Vandenbempt & Matthyssens, 1998; Neu & Brown, 2005; Gebauer 2008; Gebauer *et al.*, 2010; Mathieu, 2001a/b), Product-Service-Systems (e.g., Mont, 2002; Tukker, 2004; Tukker & Tischner, 2006) and servitization (e.g., Vandermerwe & Rada, 1988; Baines *et al.*, 2009; Neely, 2009).

The research domain on service growth in product companies has become an established field producing over 180 articles every year (Rabetino *et al.*, 2015). In the last few years, research has started to borrow from other management theories, such as industry lifecycles (Cusumano, Kahl, & Suarez, 2015), business models (Kindström, 2010), service systems (network) (Windahl & Lakemond, 2006), innovativeness (Visnjic, Wiengarten, & Neely, 2016), customer centricity (Gebauer, Gustafsson, & Witell, 2011) and the resource and capability perspectives for creating competitive advantage (Kindström, Kowalkowski, & Sandberg, 2013; Ulaga & Reinartz, 2011). For example, research on service-based business models and business model innovation is receiving attention through conceptualizations such as service business models (Kindström & Kowalkowski, 2014) and solution business models (Storbacka, 2011). Furthermore, as the limitations of dyadic studies of manufacturers and customers are increasingly acknowledged (Eloranta & Turunen, 2015), a growing number of studies take a network perspective and investigate other actors such as dealers and service partners. However, with some exceptions (e.g., Chakkol *et al.*, 2014; Finne *et al.*, 2015; Rusanen *et al.*, 2014), these studies mostly rely on qualitative data from the supplier.

Articles for the intellectual core	Citations in Scopus
Oliva and Kallenberg (2003)	681
Mont (2002)	548
Baines et al. (2007)	518
Vandermerwe and Rada (1988)	503
Tukker (2004)	369
Tuli, Kohli, and Bharadwaj (2007)	343
Davies (2004)	278
Baines et al. (2009)	278
de Brentani (1989)	234
Neely (2009)	234
Gebauer, Fleisch, and Friedli (2005)	220
Mathieu (2001a)	218
Tukker and Tischner (2006)	201
Bowen, Siehl, and Schneider (1989)	189
Davies, Brady, and Hobday (2006)	181
Mathieu (2001b)	180
Galbraith (2002)	178
Cohen, Agrawal, and Agrawal (2006)	169
Davies, Brady, and Hobday (2007)	162
Brax (2005)	159
Brady, Davies, and Gann (2005)	153
Sawhney, Balasubramanian, and Krishnan (2004)	147
Neu and Brown (2005)	143
Cova and Salle (2008)	143
Quinn, Doorley, and Paquette (1990)	143
Fang, Palmatier, and Steenkamp (2008)	142
de Brentani (1995)	134
Ulaga and Reinartz (2011)	114
Jacob and Ulaga (2008)	113
Matthyssens and Vandenbempt (2008)	110
Windahl and Lakemond (2006)	109
Gebauer (2008)	100

Table 1: Intellectual core on service growth in product companies

While the level of research output in the field is encouraging, we believe that the dominance of qualitative research points to a lack of theoretical development and validation (Oliva, 2016). According to Edmonson and McManus (2007) what is already known and what is being explored (i.e., the research question) should drive the research strategy, and that there needs to be a fit between the research question and the data and methods used to answer the question. According to them, *nascent* theories—that is, research areas where the research questions are of an exploratory nature—require interviews, case studies, and direct observation of the phenomena. Iterative exploratory content analysis of these types of data yields new constructs and suggestive models of correlation. Research propositions and provisional causal models, the expected contribution of *intermediate* theories, require explicit interview protocols, survey work and

archival data to be processed via statistical analysis and pairwise comparisons. A fully *mature* theory contains precise models that capture hypotheses generated by the same theory. To generate these, it is necessary to establish quantitative measures of established constructs and statistically test them. Clearly, a field that is still dominated by qualitative research cannot get past suggestive models (Oliva, 2016).

Our goal with this special section was to promote and bring together critical research that challenges prevailing assumptions and strengthens the theoretical foundations. Our goal was to move the service growth theory further along the maturity framework. We are happy to report that the contributions to this special section do indeed move our theories forward and we want to thank the authors for their submissions to the special section. The next section provides an overview of the contents of the special section (what we call the present state of research) and what we believe is their contribution to the theoretical developments.

3. Present

The articles in the special section each contribute in different ways by challenging prevailing assumptions and strengthening the methodological, empirical, and theoretical foundation. We have one meta-analysis of the literature with a very fresh perspective that challenges us to question our underlying assumptions about service growth; two empirical/hypotheses-testing papers assessing the effect of service-growth on financial performance, thereby testing some of the fundamental premises of the drivers for servitization; and three conceptual papers, each attempting to make sense of some problem identified in the transformation process from products to services.

In their systematic analysis, Luoto, Brax, and Kohtamäki consider scientific texts as narratives and delineate the methodic concept of ‘model-narrative.’ They identify four paradigmatic assumptions that have become institutionalized in research on service growth in product firms: 1) alignment to the western narrative of constant development; 2) realist ontology; 3) positivist epistemology; and 4) managerialism. Interestingly, these assumptions have remained fairly consistent throughout the investigated 25-year period. While qualitative research designs such as case studies dominate the data, the same assumptions were identified in the quantitative studies. Supporting some earlier observations (Kowalkowski *et al.*, 2012; Kowalkowski *et al.*, 2015; Tronvoll *et al.*, 2011) this study shows that there is a need for paradigmatic alternatives or

multiple paradigms. The authors suggest that research in developing and emerging economies could validate, diversify, and enrich existing research with western origins. They also recommend that future research take a critical stance and examine whether service growth represents a viable strategy for all firms. For instance, larger populations may enable researchers to identify potential counter-evidence and seek alternative explanations. In addition, managerialism, which was identified as one of the central paradigmatic assumptions, implies that service-related failures can only be attributed to irrational management and poor process design. Critical studies should investigate both leadership issues and the role of other factors beyond managerial action.

The next two articles are empirical studies that provide important insights related to the financial performance of manufacturers pursuing service growth. First, Böhm, Eggert, and Thiesbrummel examine whether a healthy financial situation is a necessary condition for successful service growth, something which no extant empirical study has previously investigated. They draw on configurational theory and employ fuzzy set qualitative comparative analysis (fsQCA) of 294 manufacturers. The study demonstrates that emphasis on services is a viable option for both manufacturers in a healthy financial situation and those in financial decline. This is a notable result, given that previous qualitative and quantitative studies (e.g., Fang *et al.*, 2008; Salonen, 2011) repeatedly emphasize the importance of a solid financial situation to deal with the investments required for strategic service initiatives. In addition, by considering sets of configurations that promote an emphasis on services, the research provides a more realistic and comprehensive view of the requirements for service growth than studies analyzing the net effects of single variables. By analyzing the interplay among context factors, their results confirm that resources and knowledge sources become important only in specific context situations, such as financial difficulties. While exploratory research shows that small firms can successfully pursue service growth and may in fact have advantages over larger competitors (Kowalkowski *et al.*, 2013), the study further suggests that small firms are less likely to have a general recipe for service success. Larger firms are more likely to have the organizational slack and market power that are favorable conditions for success. As a fruitful avenue for research, the authors suggest investigating the conditions under which firms decide to reduce their service orientation, causing deservitization (Kowalkowski *et al.*, 2015). Furthermore, while the study regards service orientation as a homogeneous entity, other empirical studies (e.g. Gebauer *et al.*, 2010) show that service orientation can be achieved in different ways, by focusing on specific service offerings.

Additional research could therefore analyze if successful growth through specific service offerings requires different organizational characteristics.

In the second empirical paper, Benedettini, Swink, and Neely use portfolio theory as a novel theoretical lens to investigate the relationship of manufacturers' service offerings to their survival. It is the first study on service growth that addresses bankruptcy likelihood as a direct outcome variable. Estimating a conditional multivariable logistic regression model, their evaluation of secondary data on 74 bankrupt manufacturers and 199 matched non-bankrupt competitors shows that offering more services does not consistently increase a firm's chances of survival. This result challenges the notion from conceptual literature that adding services increases the chances of survival. Specifically, they find that a focus on product-dependent services does not increase the chance of survival, while a diversified product business, offering more product-related services, decreases the likelihood of bankruptcy. The authors assume that their findings, which are based on data from mostly US-based companies, would transfer to Western European product firms. Further validation in other national contexts would therefore be valuable. Another natural extension of the study would be to examine different dimensions of service orientation, such as the relative emphasis placed on services (e.g., Homburg *et al.*, 2002).

In the first conceptual article, Spring and Araujo question the assumption in much of the marketing and servitization literature that products can be treated as stable bundles of attributes that have been assembled through manufacturing, such as a "more or less pre-produced package of resources and features" (Grönroos, 1998, p. 323), and "distribution mechanisms for service provision" (Vargo & Lusch, 2004, p. 8). Instead, they adopt anthropologist Igor Kopytoff's (1986) notion of the product biography to reveal novel insights by challenging the conventional views of products in servitization research. Products are conceptualized as open-ended propositions that are constantly unstable, both physically and institutionally. They further use the context of the 'circular economy' to show how biographies of products can add to our understanding of service growth opportunities in product firms beyond the linear path from design to manufacture to disposal. Because of various forms of instability in their status or condition, products can enable entrepreneurial opportunities for service growth that go beyond the restoration to original status, through reverse cycles of reuse, remanufacturing, and recycling. Furthermore, the Internet of Things, which is coevolving with the circular economy, permits connected and more comprehensive product biographies and thus enables new forms of service

business models arising from continuous tracking of the biographies of individual products and a more fine-grained understanding of the interaction of multiple biographies in larger systems. Overall, these insights can facilitate the emerging debate on the plurality of potential service transition models (Kowalkowski *et al.*, 2015) and also give further structure to the nascent discourse on the institutional context of service growth (Siltaloppi, 2015).

In the second conceptual contribution, Valtakoski puts forward the knowledge-based view of the firm as an integrative perspective to inform our understanding of antecedents and consequences of servitization and to offer explanations for servitization failure and deservitization. Knowledge-based theory posits that the purpose of the company is to facilitate the creation, integration, and transfer of knowledge, and highlights the dynamics of learning and organizational renewal (Grant, 1996). By conceptualizing servitization as a dyadic phenomenon, Valtakoski identifies eight key knowledge processes that potentially explain why product firms fail in their service growth initiatives. The theoretical framework informs on the dynamics of servitization and provides a more nuanced view of the customer-supplier interaction than extant literature. It suggests that the choice of knowledge sourcing depends on two contingencies: the structure of the planned solution and the knowledge bases of the collaborating customer and supplier firms. Furthermore, deservitization is regarded as a special case of industry evolution.

In the final contribution, Forkmann, Ramos, Henneberg, and Naudé conceptualize service infusion as a business model reconfiguration. While extant literature discusses service infusion mainly as an outcome, they further develop a process perspective to describe the *addition* and *reduction* of services as multidimensional processes affecting the transaction content, structure, and governance level of the business model. Service “defusion” is introduced as a concept antonymous to service infusion—similar to the concept of deservitization. By employing a knowledge-based perspective on service growth (similar to Valtakoski), they show how service addition and reduction are driven by multiple tacit and explicit knowledge conversion mechanisms and may affect all three levels of the business model. In order to achieve stability across all three levels, service infusion may need to be followed by a reduction of services elsewhere in the network (and vice versa). Since the study could only show the reduction of service on a structural level, further research should examine the phenomenon on a content level. In addition, research should look at performance-related issues of the processes and strategies of adding and reducing services. Finally, since service growth in product firms necessitates a certain

organizational ambidexterity in terms of managing the co-existence of (and synergies between) product-centric and service-centric capabilities, further research should investigate the interrelationship between this ambidexterity, service business models, and the competitive advantage of the firm.

As discussed above, the contributions to this special section move the service growth research agenda forward on several fronts. More interestingly, their findings and propositions open up several new research questions and fruitful research opportunities. In the following section, we address what we believe are the current challenges and opportunities of the service growth research agenda.

4. Future

The two empirical studies reported in this issue address the issue of whether or not adding additional services improves the financial performance of the firm. The empirical evidence from these studies is welcome, but clearly more research is needed in this area. Much of the push for service growth has been a response to eroding margins in the product market and a way to gain revenue stability through business cycles. While the weaknesses of the pure-product firm are well understood, the evidence that ‘more services’ is an effective way to address them is scant. Broader evaluations of the impact of service deployment on profitability across industries, countries, and types of products and services, as well as a solid understanding of the environmental factors that affect it should be a high priority of the service growth research agenda. Establishing where the service growth strategy works and under what conditions is a fundamental first step to justify its effectiveness and will be instrumental in building the credibility for research to influence practice.

The conceptual studies in this special section point to important gaps in our understanding of the actual transformation that takes place in the manufacturing organization that decides to deploy services. First, as pointed out by Luoto *et al.*'s (2017) literature review, Valtakoski's (2017) conceptualization, and the empirical investigations of Böhm *et al.* (2017) and Benedettini *et al.* (2017), service growth is often considered to be organic (i.e., internal). However, firms often acquire other product companies to increase the number of installed products, for which services can be marketed, and *mergers and acquisitions* (M&As) play a key role in achieving service growth. Bosch Packaging, for example, relies on acquisitions (e.g., Osgood Industries Inc.,

Tecor Machines and Systems SAS, Industrial Pharmaceutical Resources Inc.) for service growth and for a more cost-efficient utilization of the service resources. Xerox acquired Affiliated Computer Services (ACS), the world's largest diversified business process outsourcing company in 2010. Such M&As might be considered interesting "anomalies" (Kuhn, 1970) to the current theoretical assumptions on internal growth, and the theoretical lenses and methodologies from M&A literature could be used to question whether it may make economic sense to acquire specialized service companies as a strategy for servitization.

Second, as suggested by Böhm *et al.* (2017) and Benedettini *et al.* (2017), service growth is frequently assumed to be achieved by moving along a continuum from products to services (see Figure 2). As discussed above, this continuum has often been interpreted as a smooth and gradual transition into more services, despite the evidence of capability-related steps (Oliva and Kallenberg 2003; Ulaga and Reinartz, 2011). Furthermore, as it is unlikely that firms will precisely know *a priori* what service offerings will be successful in the market, an evolutionary perspective suggests of tentative steps of trial and error. This experimentation, *adding and reducing services* to the market offer (servitization/deservitization), is something that has been ignored in the literature and needs to be more carefully explored (cf., Rangan & Bowman, 1992). The conceptual studies by Forkmann *et al.* (2017) and Valtakoski (2017) in this issue are two of very few articles that discuss deservitization. However, as Böhm *et al.* (2017) point out, "empirical studies have almost exclusively tested conditions that render servitization; deservitization is not well understood."

A second implication of the continuum perspective of servitization is the assumption that service growth results from taking a position in the continuum line. Such a single position is associated with a specific type of service offering or business model — e.g., after-sales service providers, availability providers, performance enablers (Gebauer *et al.*, 2010; Windahl & Lakemond, 2010; Helander & Möller, 2008). In practice, however, one firm (or business unit) has *multiple positions* along the continuum: it may offer basic services for one customer segment, provide services for improving product availability for a second segment, and other services for enhancing customer performance for a third segment (Kowalkowski *et al.*, 2015). Research should thus be reframed from how product firms change from services supporting one business model to another to how to manage multiple services offerings and business models in one

organization. Of course, such a focus on multiple service offerings further enhances the need to understand the reversing and/or backing down from service offerings (deservitization).

Third, the articles in this special section point towards three interesting contextual dimensions that can tremendously improve our understanding of service growth. Luoto *et al.*'s (2017) literature review suggests that the provision of products and services in *emerging economies* has been neglected. The implication is that interesting learning opportunities might be available in those settings. For example, the German company Mobisol deployed a pay-per-use service to create a market for solar home systems in Tanzania. Instead of selling solar home systems, the company charged for the electricity these systems produced. Mobisol did not follow the traditional pathway (e.g., basic service to advanced services) toward service growth, but directly deployed pay-per-use as an advanced service. Research should investigate such deviations from the understood service growth paths and extend the service growth concept to emerging, low-income, markets that do not have the established infrastructure available in developed economies. Research can borrow theoretical lenses and methodologies from entrepreneurship and emerging markets.

The second contextual dimension highlighted by the empirical studies in this special section (Böhm *et al.*, 2017; Benedettini *et al.*, 2017) is the fact that most service growth research focuses on companies that face a certain maturity in their industry lifecycle and product commoditization; the expected setting for a service growth strategy. Many empirical studies, however, leave out the role of services in the early stages of the industry or product lifecycle (Cusumano *et al.*, 2015). Related to the industry lifecycle is the idea that product technologies become increasingly mature making it more difficult to achieve technological superiority through the actual product. *Technological advancements* (e.g., digitalization, industry 4.0, Internet of Things) might question this assumption. For instance, John Deere's tractors have increasingly become commodities, but by utilizing technologies surrounding the industrial internet, John Deere opened up a new service market including servicing all farming assets and data integration services about weather, seed quality, water irrigation and soil (Porter & Heppelmann, 2014). Such new markets are intertwined with new business models such as pay-per-usage (e.g., pay-per-hour equipment usage) and/or pay-for-results (e.g., crop yield). As Spring and Araujo (2017) point out, smart connected products capable of self-configuring can help achieve both business and sustainability objectives.

Finally, we should be aware that service growth has been mainly investigated in traditional product manufacturing firms. However, service growth is relevant for *other industries* beyond manufacturing. Expanding service growth research beyond product manufacturing is the third contextual dimension that we believe might improve our understanding of service growth strategies. For example, service-based delivery models are increasingly common for software firms market of business applications. Corporations such as IBM and Oracle have been offering their corporate customers subscription-only software for years and, more recently, companies like Adobe and Microsoft have taken a similar move by renting software to consumers. Public and private utilities recognize that electricity, water, or energy provision have become commodity businesses with eroding of margins and that growth opportunities might arise through services. Contract manufacturers, which specialize on production technologies rather than selling their own products, explore opportunities arising from services (e.g., design, construction, feasibility studies, reconditioning) throughout the lifecycle of the ordered product. Research of service growth strategies in these (and perhaps other) industries is needed to ensure that we are not limiting our understanding of service to the biases and constraints that might be inherent to manufacturers.

While much has been written on the process of servitization and many firms have indeed developed successful businesses following a service growth strategy, it is clear that there are still ample areas that require further research in this domain. This special section was called to revisit and challenge some of the core assumptions that lay at the foundation of the research agenda over the last two decades. We were delighted by the response we received from the research community and the insights they uncovered through their research. The opportunity to assess these articles as a group, however, has uncovered even further potential avenues for future research in the domain. We hope the research community embraces these opportunities and challenges.

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Biographies

Christian Kowalkowski is Associate Professor of Industrial Marketing at Linköping University, Sweden, and Assistant Professor of Marketing at Hanken School of Economics, Finland. His current research activities concern service growth strategies, relationship dynamics, service innovation, and solutions marketing. He serves as subject editor, servitization, of *Journal of Service Management*, associate editor of *Journal of Services Marketing*, and editorial board member of journals such as *Industrial Marketing Management*, *Journal of Business Research*, *Journal of Business & Industrial Marketing*, and *Journal of Service Research*.

Heiko Gebauer leads the business innovation group in the environmental social science department at the Eawag (Swiss Federal Institute of Aquatic Research). His research focuses on innovations in base-of-the-pyramid markets as well as services in product-oriented companies. He is furthermore a guest professor at Linköping University, where he focuses on Strategy and International Management, and at the Center for Service Research at Karlstad University. He has collaborated with various industry partners including the ABB, Caterpillar, GeorgFischer Machine Solutions, and ZF Friedrichshafen, as well as “hidden” service and solution champions such as Fraisa, Hilti, SwissFreshWater, and Testo Industrial Services. He has published in academic journals (e.g., *Journal of Service Research*, *Journal of Business Research*, *Industrial Marketing Management*, *Science of the Total Environment*, and *Journal of Service Management*) as well as management journals (e.g., *Harvard Business Manager*).

Rogelio Oliva is Professor of Information and Operations Management at Mays Business School, Texas A&M University. His research explores how behavioral and social aspects of an organization interact with its technical components to determine the firm’s operational performance. His current research interests include behavioral operations management, retail and service operations, and the transition that product manufacturers are making to become service providers.