

THE LAYERED NATURE OF SERVITIZATION CHALLENGES AND RESPONSES

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ABSTRACT

Purpose: Multiple studies identify servitization challenges and some explore firm responses to them. These challenges appear difficult for manufacturers to overcome; possibly because servitization is a complex change process/journey with multiple business logics and trajectories. Four main types of servitization challenge (and responses) are recognised in the literature, and work has explored many of these challenges in more detail, but without necessarily exploring whether the challenges are interconnected. This paper explores the inter-relationships between servitization challenges, identifying a sequential series of challenges and the responses adopted to overcome these challenges.

Design/Methodology/Approach: We use a case study methodology, exploring four manufacturer's servitization processes, associated challenges and responses.

Findings: We find that manufacturers face layered challenges, that they appear to solve in order. As manufacturers overcame the first challenge they increased attempts to respond to subsequent sets of challenges.

Originality/Value: The notion that challenges are hierarchically layered may go some way to explaining why servitization was historically envisaged to involve a journey from a product- to a service-focused state. We challenge the majority of extant literature, in that while the transformation process might be a journey, not all firms become fully servitized - some retain a product-focused mind-set, and their transformation journeys differ.

KEYWORDS: transformation challenges, inter-relationships, case study.

1. INTRODUCTION

Multiple studies identify servitization challenges (e.g., Alghisi, and Sacconi 2015; Baines et al. 2009; Barnett et al. 2013; Burton et al. 2017) and some explore firm responses to them (e.g., Storbacka et al. 2013), but typically explore each challenge in isolation. These challenges appear difficult for manufacturers to overcome; possibly because servitization is a complex change process/journey with multiple business logics and trajectories (Kowalkowski et al. 2015; Peillon et al. 2015). Thus, less is known about the transformation process. From the literature we identify four main types of servitization challenge (and responses). In this paper we are interested in exploring the inter-relationships between these different types of servitization challenge, considering whether some are more important than others and whether there is an order in which manufacturers should address them for servitization realisation. Thus, the aim of the study is to explore the inter-relationships between servitization challenges, considering the key integrated characteristics of the challenges and responses prioritised by manufacturers and whether there is an order in which manufacturers should address them for greatest success.

We use a case study methodology; interviews and documentary analysis within four manufacturers to investigate these challenges. We find that manufacturers face layered challenges and solve them in order. As manufacturers overcame the first challenge they increased attempts to respond to subsequent sets of challenges. This notion that challenges are hierarchically layered may go some way to explaining why servitization was historically envisaged to involve a journey from a product- to a service-focused

state. We challenge extant literature, despite evidence of business strategy transformation, not all firms complete the servitization journey - some retain a product-focused mind-set.

The remainder of the paper reviews the extant literature, presents the study's methodology and then the finding and discussion. It ends with conclusions, managerial implication and limitations/areas for further research.

2. LITERATURE REVIEW

Servitization literature tends to address the challenges to servitization in isolation. For example Gebauer (2008) and Turunen and Finne (2014) discuss the impact of the market environment. Cultural inertia is considered by Ostrom et al. (2010), whilst Gebauer et al. (2005) discuss the importance of developing organisational structures capable of nurturing a new culture. Additionally, new service development (NSD) processes are considered in isolation by Burton et al. (2017). Considering servitization challenges in a more holistic manner could lead to an improved understanding of their relative importance and inter-relationships.

Four main (isolated) types of servitization challenge are identified in the literature. First, how organisations respond to the structural norms of their market environment (Gebauer 2008; Turunen and Finne 2014). Manufacturers need to consider the evolution of customer needs, which might include a requirement to provide operational services on their products; for example in the aviation sector (Ng et al. 2012). Second, how manufacturers re-orientate their businesses from products to services. This includes: overcoming cultural inertia (Ostrom et al. 2010) and the development of capabilities and related business models to exploit services (Sawhney et al. 2004; Raddats et al. 2017; Story et al. 2016). Third, the structural reorganisation of the business; namely, adopting appropriate organisational structures (which may result in a separate service function [e.g., Oliva et al. 2012]). An organisational design that is not purely product focused and is set up for services is crucial (Alghisi and Sacconi 2015; Ettlie and Rosenthal 2012); since this will enable a service culture to flourish and help identify the unique impact of services on firm performance. Equally, an independent service business unit or division may not be the end point of structural reorganisation, with customer-facing strategic business units (SBUs) a necessity for some highly servitized firms in order to provide product/service solutions (Raddats and Burton 2011). Fourth, manufacturers need to develop more service-related operational processes; either adapting existing ones or developing new ones (e.g., Witell et al. 2015). These processes are often focused on aligning NSD with new product development (NPD) (Gebauer et al. 2008) and reconfiguring the sales function for services, either in terms of the competences of the salesforce and/or the management of the sales function (Ulaga and Loveland 2014).

Despite the literature on challenges, very few papers consider whether organizations tackle them together, or whether the process is more sequential, and if it is, what the implications of this are for the effectiveness of servitization. The research questions for the study are therefore: 1) How do manufacturers prioritise the challenges of servitization?; 2) How are servitization challenges inter-related?

3. METHODOLOGY

A case study method (Yin 2013) was utilized to allow detailed exploration of the challenges manufacturers face. We used a purposive sample (Eisenhardt 1989) that reflected Raddats and Kowalkowski's (2014) typology of the different manufacturer service strategies to identify two servitization enthusiasts (AeroCo; TelCo) a pragmatist (ChemCo) and a doubter (SecurCo). The cases

involved in-depth interviews and review of documentary material relating to the companies. The data were coded thematically with author agreed codes. An abductive approach to the analysis was taken to ensure that full understanding of the cases could be gleaned (Dubois & Gadde 2002).

4. FINDINGS AND DISCUSSION

Our findings suggest that the challenges manufacturers face are layered, see Figure 1 and Table 1, and hence the solutions adopted can also be seen to incorporate different layers and nuances.

Figure 1: Servitization layered challenges

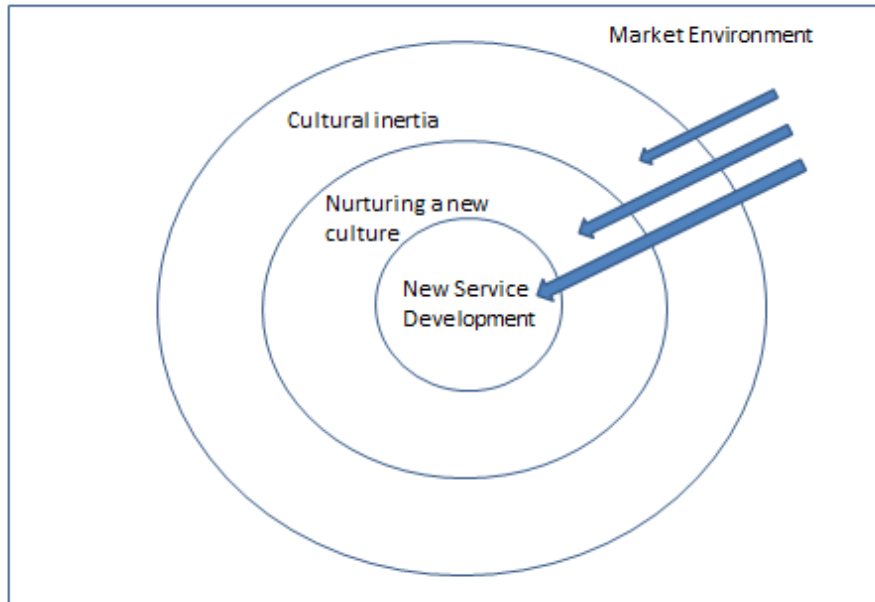


Table 1: Cross case comparison

	SecurCo	ChemCo	TelCo	AeroCo
Market environment	Channel structure and industry regulation as constraints	Channel structure as opportunity	International team working a challenge, mitigated via customer touchpoints	Industry purchase cycle as an opportunity
Overcoming cultural inertia	Cultural inertia prevalent	Cultural inertia diminishing	Cultural change achieved	Cultural change achieved
Nurturing the new culture	Limited adoption of new culture	New culture well embedded	Nurturing new culture	Successfully nurturing new culture

As manufacturers overcome the first set of challenges they increased attempts to find solutions to subsequent sets of challenges, with solutions differing depending on the service strategies adopted. The doubter struggled with the market environment challenge faced by all organizations. They also struggled to overcome the cultural inertia challenge and did not perform well with respect to the subsequent challenges. In contrast, both the pragmatist and enthusiasts demonstrated much greater success in terms of overcoming market environment and cultural inertia, and had varied success dealing with the

challenge of nurturing new cultures and with innovation process challenges. This has facilitated the development of a number of research propositions throughout this section, the first of which is:

P1: Providing solutions to servitization challenges is a hierarchical process. Lower level challenges have to be overcome before higher level solutions can be implemented.

The challenges are considered below.

4.1 Market Environment

The data suggests that the industrial and market context of each organisation has some impact on the varying degrees of transformative business model change achieved by the companies and the solutions they can adopt. SecurCo faces a different industry culture and channel structure. Channel infrastructure is complex and mostly indirect, which means that SecurCo struggles to realise services revenue. This dictates how it operates, with resellers preventing direct customer access, reducing opportunities to develop the necessary customer insight. The channel challenges are similar for ChemCo. However, they appear comfortable using distributors, as long as they are technically competent and are a cultural match with ChemCo, which allows them to build global reach (Helander and Möller, 2007). Although TelCo does not face the same channel issues, their service personnel do face customer disconnection problems. Johnson and Mena (2008) highlight the criticality of information flow in supply chain value delivery, but, a challenge to success can be the complexity and arms-length nature of teams working across multiple countries. Telco uses consultative selling personnel to act as customer touchpoints to overcome this problem, alongside customer experience management systems. Meanwhile, AeroCo capitalises on the long-term nature of service purchase cycles in their industry to develop close relationships with customers. Hence it appears that these different conditions do have an impact on the ability to servitize. Thus, Proposition 2 emerges:

P2: Environmental conditions influence the choice of service strategy

4.2 Cultural Inertia Challenges

The findings suggest three cultural inertia challenges: 'Strategic motivations', 'Developing service business models', 'Product versus service mind-set'.

4.2.1 Strategic Motivations

The strategic motivations identified by all four manufacturers were similar to those recognised by Raddats et al. (2016), including: falling product revenues, commoditisation of their core products, limited/shrinking market growth and legislative changes. These motivations to servitize create sufficient impetus for more extensive transformative actions by three organisations, but not the doubter. This failure to act has potential to create serious problems for SecurCo, who highlight that they face an industry revolution around the 'Internet of Things', creating pressure from new entrants. However, despite recognising the value-added potential of services and making some investments in this area, SecurCo interviewees still report significant inertia within the firm.

Inertia was historically an issue at AeroCo, TelCo and ChemCo, with ChemCo considering services for over fifteen years but only developing a full service strategy over the last two; showing how long culture change can take. ChemCo (the pragmatist), remains wary of being drawn too far in a services direction, but its multi-skilled personnel facilitated quick transformation to innovate services once they determined the need to act. In contrast, TelCo and AeroCo respondents describe getting past inertia as relating to having sufficient motivation, accepting that losses may accrue in the early stages of servitization, winning hearts and minds of product people and accepting that it takes time and effort to

learn how to deliver services. Focusing on what is holding SecurCo back compared to the others, leads to the development of Proposition 3:

P3: Long-term investment; commitment from the majority of key personnel; and an acceptance that losses may accrue in the early stages, drive the necessary strategic motivations for transformation.

4.2.2 Developing Service Business Models

All four organisations recognise the need to change their organisational structure to facilitate the development of the customer knowledge necessary to build new business models; but some have inherent advantages. AeroCo and TelCo already possess customer knowledge and data based upon their existing maintenance service experience. They also leverage relationships with 'friendly' customers (a key business model development challenge highlighted by Kindström [2010] and Sacconi et al. [2014]). In contrast, SecurCo highlights that it needs to make large R&D investments to develop the technology to deliver customer data, but is currently struggling because they do not know their customers well enough.

Despite having developed a few successful services, SecurCo struggle to understand what the offerings are worth and are '*woefully under-charging*'. SecurCo also recognises a problem with even getting 'into the game' because of its existing sales team's customer insight skill-set. Evidence from the other three cases suggests that it is the combination of unique service value, built on employee expertise, and customers' product data that enables them to develop unique services.

The ChemCo data highlights how they access and respond to customer information in direct working relationships with customers, building customised offerings around their core product. ChemCo also describe taking a flexible approach to generating service revenue; sometimes choosing to 'give away' services (particularly remote services) when product revenue is high or to facilitate a key sale. However, when significant resources are sent to customers' sites, they charge market price. In doing so, ChemCo struggle to build a consistently applicable service business model; which they argue is because of the high degree of disaggregation of customer types. However, given that both TelCo and AeroCo also note a high degree of customer disaggregation, maybe this is more a cultural choice rather than a structural necessity, that could, potentially, be stifling profits. Both SecurCo and TelCo identified the need to restructure account teams to ensure appropriate support and revenue attribution. This supports Rapaccini (2015), who identifies that failure to align tactical operational issues, such as revenue attribution, with a new strategic service-orientation can cause difficulties.

Thus, we offer proposition 4:

P4: Building appropriate new service business models requires: (i) customer operational data capture and management capabilities; (ii) employee expertise in identifying opportunities to deliver customer value; and (iii) the ability to account for service delivery activity costs.

4.2.3 Product Versus Service Mind-Set

Extant literature (e.g. Kindström and Kowalkowski 2014) articulates a product-focused mind-set as another key factor that creates cultural inertia. Both SecurCo and ChemCo are product-led; believing the purpose of services is to sell their products. SecurCo lack capabilities to link complex services to their products. ChemCo have these capabilities but are wary of becoming too service focused (Kowalkowski et al. 2015), which they link to a productivity risk (Öhman et al. 2015). They adopt a services-led strategy; but with a very strong focus on their own products, to avoid the 'tail wagging the dog'. This contrasts with TelCo, who appeared to overcome the product mind-set inertia challenge relatively easily, but their quick move to the new service mind-set lead to excessive services proliferation, creating confusion and

financial losses, through excessive value transfer to customers. TelCo subsequently pulled back from a 'fully' advanced services trajectory and re-focused on delivering a reduced 'menu' of profitable *product-attached* services. This approach is similar, but distinct, from ChemCo's product-led approach because, while services should be complementary to existing products, product and service sales are equally important. In retrenching, TelCo has modularised service offerings into packages to control costs better and this consolidation process has created a more profitable service business, with recognition that 'service-led' sales in a product-attached mode can deliver greater value, by providing 'pull through' product demand.

AeroCo attempted to build a services mind-set by creating a separate services division that works alongside the traditional product-focused SBUs, with a bias towards their own products, but with recognition that, if the company's products hinder growth, they can look outside the organisation for solutions. Thus, AeroCo appear to maintain both a product- and service-led approach, and have ended up with significant services growth from adopting a 'great enthusiast' position. What is clear from these examples is that all manufacturers, even the enthusiasts, need to maintain some focus on their core activities; essentially to take a balanced approach to their strategic focus, rather than being either too product-led or too services-led, which can lead to 'service overshoot'. Furthermore, the success of the approach appears to be affected by a firm's ability to modularise their services and the variety of services required by customers. Thus, Proposition 5 emerges:

P5: The relationship between a firm's product and service focus and firm performance must be carefully managed to ensure core activities remain a central focus.

4.3 Challenge of Nurturing the New Culture

Even when organisations have built the necessary momentum to overcome cultural inertia, they face organisational-level challenges around how to nurture the new strategic direction of the organisation. Key themes here are: reducing conflict (Burton *et al.*, 2016); and improving knowledge sharing (Story *et al.*, 2016).

4.3.1 Reducing Internal Conflict Across Business Units

In line with Peillon *et al.*'s (2015) warning, conflict between product and service units (or for SecurCo, a sister company) was described by SecurCo, AeroCo and TelCo, with failure to optimise resources linked by the latter two to issues of revenue attribution. Additionally, revenue streams from services (if they could be identified as distinct streams) are smaller than for products and this led to reluctance to further commit to developing services. Thus, revenue stream appropriation has the potential to reduce incentives for service innovation. To better manage this conflict, AeroCo and TelCo have focused on documenting work flows, embedding service people within product teams, and managing revenue flows. In contrast, conflict is limited at ChemCo, perhaps because of its integrated product-service matrix organisational structure. Thus, internal conflict appears reduced when organisations develop revenue attribution stream transparency and a more integrated, cross-functional approach to teams, leading to the development of Propositions 6:

P6: Developing cross functional teams of both service and product staff develops shared expectations in relation to roles, revenue attribution and remuneration, which drive firm performance through reducing internal conflict across SBUs.

4.3.2 Knowledge Sharing

Knowledge sharing is important to facilitate services transformation, as it ensures both internal and external alignment with the new strategic message being disseminated and, therefore, stability in the transition (Alghisi and Saccani 2015). In three cases, communications were identified as being key, but in

SecurCo's case these knowledge sharing activities appeared superficial: simple communications across SBUs, versus the creation of deep, shared knowledge, which was evident in all other cases. In line with Visnjic and Van Looy (2013), what is clear from ChemCo, TelCo and AeroCo's data is that: sales staff, with service skills; and boundary spanning lead personnel, who provide positive feedback from service teams to product SBUs on desired customer solutions (He and Lai 2012), are crucial for effective knowledge sharing. AeroCo involve lead personnel in contract and business-winning reviews. However, in both AeroCo, and TelCo, while there is evidence that intelligence from service sources is deemed valuable, there is some evidence to suggest that product staff may not always listen or act on their suggestions. Following the evidence presented, Proposition 7 is developed:

P7: Effective knowledge sharing across the whole team (including customer facing staff) is driven by: boundary spanning staff; dialogue; and interaction touchpoints, and supports performance via staff alignment.

5. CONCLUSION

Exploration of the challenges and associated responses of servitizing firms in the extant literature has led to the identification of four key challenges and a number of responses. In considering these challenges in a holistic integrated form we have been able to highlight the hierarchical layered approach in which firms may attempt to overcome challenges. We identify that some manufacturers progress through this hierarchy of layers, whilst others remain significantly tested by initial challenges. Thus, our main contribution can be seen as highlighting the processual nature of servitization efforts, which can be evolutionary or revolutionary; but appears to require ambidexterity to achieve the necessary changes (O'Reilly and Tuschman, 2008). In identifying a number of research propositions which should help further develop holistic understanding of how servitizing manufacturers prioritise overcoming challenges, we provide an opportunity to explore the relative importance of and inter-relationships between these challenges and responses. We highlight that manufacturers experience different servitization transformation journeys, with all our cases retaining some product focus, rather than pursuing a total switch to a service focus. This is indicative of our second contribution that supports the view that servitization is not a unidirectional transformation (cf. Oliva and Kallenberg, 2003; Kowalkowski et al., 2015) but rather a 'delicate balancing act' allowing the coexistence of multiple business logics (Peillon et al. 2015, pg 1274).

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