



# Servitization: A Pathway Towards A Resilient, Productive And Sustainable Future

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## Research and Programmes

### The Advanced Services Group



#### The Advanced Services Group

The Advanced Services Group (ASG) is a centre of excellence within Aston Business School specialising in servitization and, in particular, advanced services. It delivers education, training and research to help global manufacturers and technology innovators to develop services-led strategies. The Centre have worked with over 200 businesses, including Baxi, Domino Printing Sciences, Ishida, Legrand, Thales and Waters, as well as a multitude of SMES, who have both informed and benefited from its research.

#### The Advanced Services Partnership

This is an international research network, which was formed in 2015, and comprises larger manufacturing organisations that are traditionally production-focused, and now in the earlier stages of exploring, developing and deploying advanced services. It sustains a nurturing environment comprised of one-to-one support and roundtables that are structured so that experiences can be shared openly and constructively. Partners are drawn from across Europe and the USA.



Digitally Enhanced Advanced Services (DEAS+) NetworkPlus. A community of researchers and practitioners funded by the EPSRC. The DEAS NetworkPlus works collectively across disciplines (e.g., computer science, engineering and business) and industry sectors (manufacturing, transport and financial services), to accelerate the innovation of Digitally Enhanced Advanced Services.



Pathways Towards Servitization: A Transnational Study of Organisational Transformation. An ESRC project with the primary aim of developing organisational transformation pathways that manufacturers can follow to efficiently and effectively innovate their organisations through servitization and compete through advanced services.



Advanced Services Growth 1. This project will provide new knowledge, accessed through a digital learning platform, for SMEs in the Greater Birmingham and Solihull region of the UK – it will underpin changes that SMEs will need to make in order to benefit from the changing digital landscape.



## **European Union**

European Structural  
and Investment Funds

Advanced Services Growth 3. This project will underpin new growth in manufacturing SMEs in the Black Country of the UK – it will be achieved through a series of business support interventions to help these SMEs to develop business models for advanced services that ‘co-create’ value for themselves and their customers.

## Introduction

The Spring Servitization Conference (SSC) is dedicated to understanding how organisations can develop and adapt their business models around servitization and advanced services. Since its inception, the mission of SSC has been to play a key role in the development of a better understanding of servitization and to demonstrate the potential impacts upon businesses and society. SSC continues to fulfil this mission and provides the major forum for researchers from across disciplines including operations management, strategic management, service innovation, service marketing, information system, etc. to constructively share and debate their findings, generates new ideas, network and forge research partnerships.

We were planning to host the Spring Servitization Conference 2021 in Florence, Italy. However, similar to SSC2020, due to the COVID-19 pandemic, we were forced to move this year's conference to a fully virtual event too. The theme will be *Servitization: A Pathway towards a Resilient, Productive and Sustainable Future* and once again we will follow the now established format of a single stream where all contributors have an opportunity to present to the whole conference audience and engage in both structured and semi-structured panel sessions to discuss their work. The programme is designed to encourage strong participation, extensive debate, and bridge research theory and industrial practice. The conference will also feature keynotes from senior executives at leading manufacturing businesses.

We would like to thank all contributors, both new and returning colleagues, reviewers, delegates, sponsors, and staff for the continued support and commitments to the Spring Servitization Conference despite the uncertainties and challenges generated by the COVID-19 pandemic. We are truly hoping to return to our normal face-to-face conference from 2022.

Dr Ali Z. Bigdeli and Professor Tim Baines  
*The Advanced Services Group, Aston University, UK*  
May 2021

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# EXPLORING THE ALIGNMENT BETWEEN SERVITIZATION BASED VALUE PROPOSITIONS AND CONTRACTS

Shaun West, Paolo Gaiardelli, Duygu Ozbek and Simon Züst

## ABSTRACT

**Purpose:** The purpose of this research is to provide further insight into PSSs and the contracts regulating their delivery (in part or in full), through the development of a model linking the characteristics of value propositions associated with basic, intermediate and advanced services to the offer and the contract. Having a clear understanding in this context would lead companies to offer services without a mismatch between the value proposition promised and the contract itself. The motivation for the study comes from a prior study where the service leaders interviewed expressed concerns with the contracting process when moving from basic to advanced services.

**Design/Methodology/Approach:** The research design adopts a multi-step approach that integrates the analysis of literature, the investigation of secondary data sources, and expert interviews.

**Findings:** Through the creation of a conceptual map based on a literature review and secondary sources analysis, this paper provides a holistic view of the distinctive components of the value proposition and contracts in PSS contexts. Furthermore, by exploiting the information from interviews with experts, it contributes to improving knowledge on the relationship between these components. Finally, it contributes to the definition of an effective standard service contract editing process, supporting companies in commercializing their services in complex PSS environments.

**Originality/Value:** There is limited published work in this area, so the link between the value proposition and the contracts appears to be weak. Marketing often speaks of the value propositions for service, although there often appears to be a gap between the value proposition, the offer and the legal binding agreement.

**KEYWORDS:** Servitization; Value Propositions; Service Contracts, Offers.

## 1 INTRODUCTION

The provision of Product Service Systems (PSSs) has been recognized over the years as a major business opportunity for many manufacturing companies (Vandermerwe & Rada, 1988; Baines, et al., 2009). Research has underlined that an appropriate configuration of the value proposition is fundamental to achieve successful PSS (Da Costa Fernandes et al., 2019). Conversely, service providers often fail to articulate their value proposition into proper service contracts, thus generating dissatisfaction and difficulties in contract management (van der Valk, 2008). Advanced (often referred to as outcome-based) service contracts, long-term service agreements and Operation & Maintenance (or O&M) agreements) are used to regulate the relationships between the provider and the customer within PSS environments. They link the value proposition to the offer via legally binding obligations on both parties (Stremersch, Wuyts, & Frambach, 2001). Product contracts are, in general, focused on the tangible goods that are delivered to the customer by the supplier. In contrast, service contracts are often outcome-focused, with significant value co-creation and intangibles, making them different from conventional supply contracts (van der Valk, 2008; Ng, Maull, Yip, 2009).

The purpose of this research is to provide further insight into PSSs and the contracts regulating their delivery (in part or in full), through the development of a model linking the characteristics of the value proposition associated with services to the distinctive features of service contracts. Having a clear understanding in this context would lead companies to offer services without a mismatch between the value proposition promised and the contract itself. The motivation for the study comes

from a prior study where the service leaders interviewed expressed concerns with the contracting process when moving from basic to advanced services (West, Gaiardelli, & Mathews, 2019).

## **2 BACKGROUND**

Growing competition is driving manufacturing companies toward servitization, a transition from selling standard products to selling advanced product-service systems, to secure competitiveness (Baines et al., 2009). Companies are increasingly offering advanced service solutions rather than the traditional business model of standalone physical products with basic add-on services. Advanced services are defined as complex combinations of products, services, software, support processes, and knowledge that work together to achieve the outcomes desired by the customer. Such examples have been described by Anderson & Narus (1995) in terms of maintenance, repair and overhaul services. They are required to have a clear value proposition, associated with them, an offer that supports the delivery of the value proposition, capabilities and resources underpinning them, and a contract describing the obligations of parties (Kindström & Kowalkowski, 2014).

### **2.1 Value proposition for services**

A value proposition indicates why a customer should do business with a provider, making clear the achievable benefits and emphasizing the ultimate positive effect that emerges from the trade-off between gains and pains (Da Costa Fernandes et al., 2019). As a value proposition is the first thing that customers encounter when selecting a PSS offer, making it relevant and qualified emerges as essential. Consistently, a successful value proposition has to be communicated properly, adopting the customer's language to connect it to their expectations and needs. Indeed, service providers usually develop complex and carefully articulated contracts to manage relationships with their customers in the product-service delivery (Kowalkowski, 2011). Specifically, when advanced services are provided, contracts may be formulated to explicitly state how future critical events will be handled, in order to avoid any uncertainty and misleading situations and to discourage opportunistic behavior by one or both parties involved (Latonen & Akpınar, 2019). A value proposition (Anderson & Carpenter, 2010) is a clear statement that provides: relevancy (e.g., explanation of how the product or service solves customers' problems or improves their situation) and a qualification of value delivery.

An offering represents the bundle of goods or services that in totality deliver the value proposition (Ulaga & Reinartz, 2011). For many buyers the value proposition is the first thing they encounter when selecting an offering and thus, having a clear value proposition is essential. An advanced service offering is a hybrid that is built from the provider's (or their partners') resources and capabilities and these may be realized within basic service offers. The bundle of goods or services (i.e., the offer) necessary to deliver the value proposition, may be effectively built from service modules (Heikka, Frandsen, & Hsuan, 2018).

### **2.2 Taxonomy of value propositions and offers**

Kindström & Kowalkowski (2014) developed a taxonomy that helps to classify service offerings, based on their main characteristics, the service focus and the revenue model. Product focused services try to ensure that a product functions and performs as expected, customer process-oriented services, instead, support customer's real business processes. The second dimension is given by the revenue model: input-based services are sold with the promise to perform a certain input with that specific input being charged; output-based services are, on the other hand, charged by focusing on the product's availability or performance.

### **2.3 Contracts for long-term and outcome-based agreements**

Service providers draft contracts to regulate relationships, which emphasizes written documents regarding the description of the roles and obligations, payment and performance commitments (Zou et al., 2019; Ng & Nudurupati, 2010; Stremersch, Wuyts, & Frambach, 2001). Examples of such contracts include price inflation clauses regarding actual costs, and performance guarantees that

address solution failure or penalties. Contracts reduce uncertainty concerning behaviors and outcomes by providing formal rules and procedures to govern the relationship (Zou et al, 2019). The advanced contracts include some or all of the following goods and services: planned and unplanned inspections, spares, repairs, technical support, system analysis and face-to-face customer management. Service contracts describe the offer in sufficient detail that demonstrates the resources and the capabilities (either internal to the supplier or sub-contracted) required to deliver the value proposition (Stremersch, Wuyts, & Frambach, 2001). Allocation of resources, roles and responsibilities to support value co-creation and co-production/co-delivery associated with the offer is important, and must be described within the contract (Ng, Maull, & Yip, 2009; Grönroos, & Helle, 2010). Considering the buyer's perspective, van der Valk (2008) identifies the importance of contracts in services, yet Stoll, West, & Hennecke (2021) confirmed in their exploratory study that that contracts for outcome-based agreements were poorly researched.

### **3 METHODOLOGY**

The research design adopts a multi-step approach that integrates the analysis of literature with the investigation of secondary data sources and some expert interviews. First, a benchmarking review was conducted, adopting a snowball method to avoid the disadvantages of retrospective research (Yin, 2009). The benchmarking included analysis of websites, reports and brochures of industrial companies operating within the context of PSS. The value propositions, the offers identified, and the underlying basic offers (or modules) of spares, repairs, field services, and monitoring and diagnostics, were assessed. The results were then used to categorize the value propositions based on Kindström & Kowalkowski (2014). Finally, seven semi-structured interviews with experts in service contracts were carried out to gain insights into the process of translating the value proposition into the contracted offers, to gain an understanding of the contracting process within firms. The analysis was then used as the basis for the discussion and building a model that translates the value proposition and the (hybrid) offer into a contract that could be successfully fulfilled.

### **4 RESULTS AND INITIAL ANALYSIS**

All the firms studied manufactured capital (or investment) products, where the cost of a new product runs into millions of dollars and where the operational life of the product is at least 15 years. The results initially describe the findings of the benchmarking of the firms' offerings and respective value propositions before providing insights from the interviews on the offer-to-contract process.

#### **4.1 Benchmarking**

Each company's website was organized and their offerings were clearly described; the study started focusing iteratively on companies belonging to a specific industry segment, classifying their services offered and identifying the value propositions guaranteed for each service. Each service offered by a company belonging to a specific industry field was analyzed along different dimensions: value proposition, risk allocation, revenue model, and service category. Interestingly, the language to describe the different value propositions, offers, building blocks, and underlying resources and capabilities was not consistent between the firms. The summary of offers is given in Table 1 and the classification of the value proportions in Table 2.

The firms active within the rail segment were analyzed for their offers and value propositions, each supplier had their own names for their offers. They all provided the basic building blocks of spares (also called material solutions at Bombardier, spare parts services at Siemens), repairs (component repair and overhaul at Bombardier, parts and repairs at Alstom) and upgrades (modernization at Alstom, asset life management and vehicle modernization at Bombardier) for the products that they sold. All the firms provided different forms of maintenance services based on product availability, they also provided O&M services that focused on process availability (operational services at Siemens). Monitoring and diagnostics were provided under a range of names and could be integrated into the maintenance, O&M or upgrade services (or rolling stock refurbishment and maintenance at Hitachi, dynamic maintenance at Alstom). Asset management, a service based on reconditioning and product

performance, was supported through digital services and linked product and process performance. Testing services were also common in this segment, called qualification services at Siemens.

Table 1: Summary of the offers from the firms studied

	Rail				Shipp- ing		O&G		Power		Aero					
	Alstom	Bombardier	Hitachi	Siemens	ABB Turbo	Wartsila	Burkhardt	MAN	Sulzer	GE Power	Siemens	Airbus	Boeing	Bombardier	GE Aero	Rolls-Royce
<b>Basic offers/ modules</b>																
Spares	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Repairs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Field services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Monitoring and diagnostics	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Hybrid offers</b>																
Upgrades	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Exchange					X									X	X	X
Consultancy/training	X	X	X	X		X		X	X	X	X	X	X			
Maintenance (framework)	X	X	X	X	X	X		X	X	X	X				X	X
Maintenance (input focused)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Maintenance (output focused)	x				x			x		x		x	x	x	x	x
Operations and maintenance		X	X	X						X						
Asset management		X	X		x			x				x				

X = fully, x=partially

Table 2: Classification of the value proportions from the firms studied

	Rail				Shipping		O&G		Power		Aero					
	Alstom	Bombardier	Hitachi	Siemens	ABB Turbo	Wartsila	Burkhardt	MAN	Sulzer	GE Power	Siemens	Airbus	Boeing	Bombardier	GE Aero	Rolls-Royce
<b>Process</b>																
Support	X	X		X		X	X		X							
Availability		X	X	X	X					X	X	X	X		X	X
Performance					X			X		X	X	X		X	X	X
<b>Product</b>																
Lifecycle	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Availability	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Performance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Shipping was similar in many respects to rail, (with ABB naming spares original parts), while repairs were again referred to, and often integrated into the maintenance services along with exchange services (referred to as customer part exchange and exchange units at ABB). Exchange for the system was not possible, however the subsystems could be exchanged. To improve the value proposition both firms provided in-service upgrades to reduce ongoing maintenance requirements and better match the equipment with the actual operational requirements. This approach was supported via the asset management services based on reconditioning the products to maintain product performance. The more advanced service-based value propositions were based on multiyear agreements focused on product availability (maintenance management agreement, fixed rate service agreement at ABB). More advanced services based on “per hour use” (called turbo lifecycle care at ABB) were described, whereas the lifecycle solution from Wartsila aimed to reduced total life cycle costs. Training was provided by both firms, covering routine maintenance as well as operational training.

The O&G segment (based on three firms) had basic services based on transactional spares, repairs and field service, digital services (or condition-based monitoring and diagnostics at Burkhardt also called digital solutions at Sulzer) were also offered, although on a longer-term relationship basis. Conversions, modifications and upgrades were offered to provide improved product performance (revamps and modifications at MAN, revamps and upgrades at Burkhardt). All of three firms provided their hybrid offers on the basis of transactional or multiyear programs from basic framework agreements to availability-based agreements (digital and service agreements at MAN, maintenance contracts/ LTSA at Sulzer), MAN reactor services also supported lifecycle asset management. Training for maintenance and operational support was provided by all the firms.

Power confirmed similar trends to O&G: within this segment value propositions from Siemens and GE Power were assessed, and as with O&G both firms provide offers based on spares, repairs and field services on transactional basis. Digital services (diagnostics services at Siemens) were provided on a multiyear basis with upgrade services being offered on a project basis, albeit with an outcome basis. Multiyear maintenance programs (hybrid offers) based on availability of inputs were described, as were more advanced “power-by-the-hour” agreements (contractual service agreement at GE).

The aero segment suppliers included Airbus, Boeing, Bombardier GE Aero, and Rolls-Royce, and included airframe OEMs and engine manufacturers. In this segment many of the services were offered both directly and via a third party such as Lufthansa Technik. Again, spares and general maintenance, repair and overhaul services as well as training were described, suggesting that offers were both basic and hybrid in form. Maintenance services, hybrid offers based on product availability value propositions (e.g., preventive maintenance and maintenance, repair and overhaul at Airbus, maintenance inspections and product enhancements at Bombardier) were described. Upgrade services were also described on both the airframe and the engine. “by-the-hour” service agreements were offered by all the vendors (smart services at Boeing). Lifecycle asset management was a service from all vendors (maintenance and engineering at Boeing). Exchange services and leasing were described by both airframe OEMs and engine manufacturers.

By breaking down the different hybrid offers into the basic building blocks, it can be seen that many of the constituent capabilities and resources are common: products (or product modules); spares and consumables; field service; repairs; and training. Monitoring and diagnostics are enabling resources (technology) that support the delivery of more advanced services as well as being a service that can be sold in its own right. The basic and enabling resources are the core building blocks for the more advanced value propositions: framework agreements; multiyear maintenance agreements; exchange and leasing (products or sub-systems); “per-operation” maintenance agreements; operations and maintenance; asset management.

The value propositions from different firms have been assessed, and the firms provide a range of services that can be classified accordingly, allowing the different value propositions to be assessed on a common basis. Here it must be noted that the data were secondary data and that additional interviews from both the customers and the suppliers would further support the analysis.

#### **4.2 Understanding the translation of value propositions to contracts**

Interviews were conducted with seven experts in the area of commercialization of advanced services and a summary of the results is given in Table 3. The interviewees were selected to provide a spread of experience across a range of industrial B2B services and due to their experience with services. They were selected to give a balanced view of the process of translating the value proposition into an offer and then contracting the offer.

### **5 DISCUSSION**

Many or all the advanced value propositions were based on hybrid offers, where individual modules (or building blocks) were integrated together, which is therefore in agreement with Heikka, Frandsen, & Hsuan (2018). The mix of language and combination of value proposition with underlying capabilities and resources made much of the assessment initially difficult to achieve. In all of the cases

investigated the product ownership was transferred from the supplier, making all the service value propositions more “traditional” than with some of the more advanced “rental” based advanced services. In the case of the aero segment, ownership was often with a financial owner, whereas in power, the ownership of the power plant could be separated from the local operations and maintenance team. The difference here needs to be further investigated, as firms such as Caterpillar and Hilti offer rental services on their products and this may be an artifact of specific market segments.

Table 3: Summary of the interview insights and quotes

Interview	Direct quotes and insights
A. Engineer Service development Global manufacture	<ul style="list-style-type: none"> <li>— Value propositions are stated in the communication part but not in the contract</li> <li>— The scope of the service is the core part of the contract; the contract is structured based on that and adjusted based on customer capabilities.</li> <li>— Tried to harmonize the service contracts across the firm</li> <li>— <i>“Service contracts, they are very often custom-designed”</i></li> </ul>
B. Engineer Service Leader Global manufacture	<ul style="list-style-type: none"> <li>— Contracts do not match every value proposition.</li> <li>— Value propositions contain many aspects in addition to the core scope.</li> <li>— Provide a range of contracts (e.g., call-off contracts, middle ground contracts, advanced ones) co-developed contracts.</li> <li>— <i>“Service contracts come from a tradition of a product [business] and a poorly structured”</i>.</li> </ul>
C. Lawyer General counsel Global manufacture	<ul style="list-style-type: none"> <li>— Value propositions are [only] a communication tool, the starting point for negotiations.</li> <li>— Customers like to use their negotiation power to impose their terms and conditions.</li> <li>— Large suppliers have negotiation power and can standardize their contracts.</li> <li>— <i>“Contracts don’t do the complete job of describing the entire value propositions”</i>.</li> </ul>
D. Business Consultant Service leader Regional consulting	<ul style="list-style-type: none"> <li>— Value propositions should be [reflected] in the contract.</li> <li>— Service contracts should be standardized.</li> <li>— Forms of contract need to reflect activity-based, performance-based and outcome-based value propositions.</li> <li>— <i>“[there is a] lack of understanding of what service really is, this leads to problems in developing and commercializing services”</i>.</li> </ul>
E. Engineer Service leader Consultant Service software Global manufacture	<ul style="list-style-type: none"> <li>— The [ITIL] framework helps to decompose the contract into building blocks, and for each block, there are options for the customer.</li> <li>— A menu card serves as a configure-to-order tool to balance standardization and personalization.</li> <li>— Important to understand the risk both parties bear in the contract.</li> <li>— <i>“Create a standardized framework for the delivery organization and which is flexible enough for the customers.”</i></li> </ul>
F. Science IT manager Data analytics Global manufacture	<ul style="list-style-type: none"> <li>— Value propositions are not stated in the contract because it is impossible to commit to delivering the value described.</li> <li>— Suppliers generally align with customer’s business drivers when agreeing on a service agreement.</li> <li>— Outcomes depend on how the customer operates the asset (you can’t control their behavior)</li> <li>— <i>“Negotiation with customers should be based on a specific framework that you can adapt depending on what the customer wants”</i>.</li> </ul>
G. Engineer Service leader Global manufacture	<ul style="list-style-type: none"> <li>— It is crucial to demonstrate the value to the customer.</li> <li>— Forms of contracts are based on frameworks that were followed and adapted to specific cases.</li> <li>— Every industry sector/ every company has their way of approaching the contract.</li> <li>— <i>“Value propositions are part of the deal presentation, but they are not written into the contract - they are legal terms”</i>.</li> </ul>

The results confirm that the value propositions can be classified using the model from Kindström, & Kowalkowski (2014) and that this model provides a useful approach for understanding the characteristics of the solutions offered. Interestingly, different value propositions can be built using similar modules, even when the hybrid offers are different. This suggests that basic service offers (and the underlying capabilities and resources) provide the basic blocks for the advanced or outcome-based contracts. A clear example of this was the difference between two of GE Power’s offers and their value

propositions (e.g., Multi-year Maintenance Program or MMP and Contractual Service Agreement or CSA) where they are nearly identical in terms of the inputs, but they provide very different value propositions to the customer. The MMP's value proposition provides certainty with fees and lead times, whereas the CSA is a "power-by-the-hour" outcome-based contract. The bundling of modules provides the opportunity to create different hybrid offers that support different value propositions (e.g., new revenue models, risk transfer, and value proposition focus). The contracts that support the service delivery therefore are required to be different in content and can be built from similar modules.

Digital technologies (e.g., monitoring and diagnostics) can be considered enabling technologies to allow more advanced service-based value propositions to be built from the basic modules, even though monitoring and diagnostics were offered on a standalone basis. When part of a hybrid offer, monitoring and diagnostics creates a recurring relationship customer, as well as supporting risk transfer and proving the conditions that allow new revenue models, both of which are necessary for advanced services. Similarly, the availability of a "spare product" (e.g., exchange unit) provides additional risk transfer in the form of a "real option" and allows a new value proposition to be built, along with its hybrid offer, all of which must be reflected correctly within the contract. This is in general agreement with Zou et al., (2019) and van der Valk (2008).

In effect, the contract defines the relationships between the parties to the contract as well as third party obligations, and must be clear to both the provider and the buyer (Stoll, West, & Hennecke, 2021). Without the clear definition of the relationships and the obligations of the parties towards each other the delivery of the "offer", which comprises a set of goods and services with a specific revenue model, will not be successfully delivered and therefore the supplier will have failed to have fulfilled the value proposition associated with the offer. For advanced services to successfully deliver the value proposition promised, the firm needs to have the mindset necessary to draft a contract around the hybrid offer or solution (e.g., the bundle of goods and services). Advanced service should build upon service dominant logic as it is necessary to understand and reflect the value co-creation process based on multi-actor interactions towards the beneficiary(ies), which in effect defines the "rules" described within the multilayer service framework of Frost, Chang, & Lyons (2019).

### **5.1 Managerial implications**

Due to recurring maintenance requirements, customers in these capital goods markets may prefer a "framework agreement", which in effect bundles together the basic modules into an offer. Here there is limited additional risk transfer to the supplier, and many service level agreements could be considered typical examples as they define minimum service commitments, such as lead time; other examples are "call-off" agreements. These are essentially simple offers with goods and services bundled together for a series of transactional purchases and are focused on supporting the product. The translation of basic input-based service value propositions was found to be closely related to the "product mindset" of many of the manufacturing firms interviewed. Legal teams in place for the equipment sales were more used to the development of transactionally-based value propositions, including upgrade contracts.

The translation of the outcome-based hybrid offers into a contract is a complex process where many firms do not understand what is needed. The hybrid offers require the ability to integrate commercial capabilities, including commercial management, risk and legal, and logistics management with the basic models. This allows risk to be transferred to the supplier and for the revenue model to move to a "pay-per-input" or "pay-per-output" model. The allocation of contractual roles and obligations is according to Ng, Maull, & Yip (2009) and Stremersch, Wuyts, & Frambach (2001), otherwise, the likelihood of delivering the value proposition sold to the customer is low. This again supports the requirement for more sophisticated commercial capabilities in the firm as advanced services are offered via hybrid offers. Where there is a mismatch between the value proposition, the hybrid offer, and the contrast, there is a risk of the legally binding agreement between both parties will at some point unravel.

A commercial team who are able to bundle the necessary modules together for the hybrid offer and convert the value proposition into a binding contract is no longer “nice to have” but a requirement for the contracting and execution of intermediate and advanced service contracts. The literature on this subject is rather sparse, focusing on the design of the value proposition and the revenue model, and is silent on the contracting aspects. NEC4 from the UK provided some insights into contract structures for advanced service agreements, others (van der Valk, 2008; Zou et al., 2019) provide some insights, although not fully applicable to this study. Therefore, it is recommended that a multi-disciplinary study is considered, to examine the area of “*contracting advanced services in a PSS context*” and that such a study should consider how this should be integrated with the design of the value propositions and the underlying capabilities necessary to design, develop and deliver advanced services in line with Stoll, West & Hennecke (2021).

## 6 CONCLUSIONS AND RECOMMENDATIONS

There is a paradox when converting value propositions to a contract, as the contract must reflect the value proposition but cannot just copy and paste one into the other, (although it should be reflected clearly in the “preamble” of the contract). For this reason, there is often a gap between the value proposition (what was sold) with the hybrid offer and the contract. Ng, Maull, & Yip (2009) suggests that service dominant logic can support here, as contract preparation requires strong customer involvement of, as their preferences play an important role in assigning roles and responsibilities to parties involved. In addition, the analysis suggests that contractual obligations and requirements for both the service provider and customer can differ significantly in accordance with the characteristics of the hybrid offer, the revenue model, and the form of the focus of the value proposition. Finally, the study confirms the difficulty in creating standard forms of contract, however, some standard elements can be identified in the contract drafting process.

A recommendation for future research would be to focus on case studies and/or specific companies and have access to their service contracts, in order to be able to evaluate them and come to a result on how contracts change ranging from basic, intermediate and advanced service offerings, particularly with the integration of digital technology. To do this, more access to the contracts themselves would be required, along with a research team that included law and finance specialists.

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