

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

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SUPPLIER-CUSTOMER RELATIONSHIP ON SERVITIZATION:  
From the customer's point of view

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SUPPLIER-CUSTOMER RELATIONSHIP ON  
SERVITIZATION:  
From the customer's point of view

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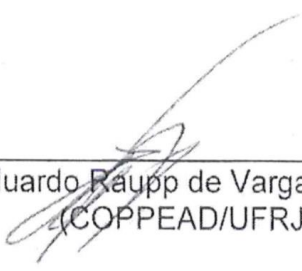
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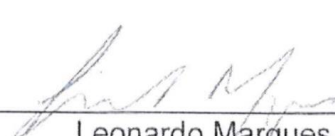
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## RESUMO

**Propósito:** Para empresas de manufatura, a decisão para oferecer serviços tornou-se uma estratégia para aumentar o crescimento e fortalecer a posição no mercado. Esta pesquisa tem o objetivo de possibilitar uma reflexão mais profunda da experiência do cliente no processo de *servitization* e como este processo influencia o relacionamento entre o fornecedor e o cliente.

**Estrutura/metodologia/abordagem:** Esta pesquisa apresenta um estudo de caso único, realizado junto a uma sucursal brasileira de um fabricante internacional de dispositivos médicos que começou no ano de 2011, a oferecer serviços mais avançados aos seus clientes. A pesquisa utiliza de uma abordagem qualitativa baseada em entrevistas com gestores da empresa fornecedora e um amplo grupo de clientes que assinaram contratos de serviços com seus fornecedores nos últimos seis anos.

**Descobertas:** O processo de tomada de decisão pelo cliente, ao assinar o contrato de serviços, foi muito influenciado pela reputação e pelas experiências anteriores com a empresa fornecedora. As medidas tomadas para mitigação de risco, por parte do fornecedor, afetam a percepção de riscos por parte do cliente.

**Limitações/Implicações da pesquisa:** Este estudo de caso foi realizado numa área industrial específica de equipamentos médicos. Nesta área de negócios a oferta do cliente aos seus consumidores finais é baseada em serviços, ou seja, tratamentos médicos. Outras pesquisas são necessárias para investigar se as descobertas feitas nesta área específica também são válidas para indústrias com diferentes características.

**Implicações práticas:** Em um ambiente onde *servitization* desempenha um papel importante, isto se torna ainda mais essencial para o cliente considerar os objetivos maiores dos fornecedores ao comprar os produtos que são importantes para seus negócios principais. Porque a relação entre os objetivos dos fornecedores e os dos clientes se torna ainda mais importante nas áreas de negócios que envolvem serviços.

**Originalidade/valor:** Existem poucos estudos que focam o cliente no campo de pesquisa sobre *servitization*. Esta pesquisa oferece uma visão por parte do cliente e como ele percebe o processo de *servitization* e oferece também a oportunidade de realização de pesquisas posteriores nesta área.

## ABSTRACT

**Purpose:** For manufacturing companies the move to offering services became a common strategy to increase growth and to strengthen the position in the market. This research aims to give deeper insight of the customer's experience of this servitization process and how this process influences the supplier-customer relationship.

**Design/methodology/approach:** This research presents a single case study on a Brazilian branch of an international medical device manufacturer who started the offering of advanced services in 2011 to its customer base. The research uses a qualitative approach and is based on interviews with managers of the supplier company and a broad sample of customers which signed service contracts with the supplier during the time period of the last six years.

**Findings:** The decision making process on the customer's side to sign a service contract is very much influenced by the reputation of and the former experience with the supplier company. Risk mitigation measures taken on the suppliers side affect the risk sensing on the customer's side.

**Research limitations/implications:** This case study was executed in the specific industrial fallow area of medical equipment. In this business the customer's offering to the end-consumer is based on service – the medical treatment. Further research is needed to investigate, if the findings of this research are valid in industries with different characteristics as well.

**Practical implications:** In an environment where servitization plays an important role, it becomes more important for the customer to consider the supplier's superordinate goals when purchasing products that are essential for the core business. Because the match between the supplier's and the customer's goals become even more important in the service business.

**Originality/value:** There are very few studies focusing on the customer in the research field of servitization. This paper delivers insights in how the customer senses the Servitization process and offers opportunity to further research in this area.

**Key words:** Servitization, Risk mitigation, Case study, Supplier-Customer Relationship

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## 1 INTRODUCTION

The purpose of this paper is to contribute to a comprehensive understanding of the servitization process in a B2B environment, by analyzing the relationship between a supplier in servitization process and its customers. The units of observation in this research are firstly the marketing and account managers on the supplier side who are the decision makers for implementing new services and for the customer support and secondly the managers on the customer side who are the decision makers for entering the new service contracts and who are in continuous contact with the supplier. The research focus on the customers' sensing of the servitization process. Since the servitization process alters the supplier-customer relationship, the main research questions that guided this work are: How does the customer sense the changing supplier-customer relationship during the servitization process? How does risk mitigation measures on the supplier side influence the relationship? And does the changed relationship and the measures on the supplier side influence the risk assessment on the customer side?

Considering that in general every supplier has multiple customers for its products and services, the total number of customers affected by the servitization process exceeds the number of suppliers by far. In contrast the majority of the existing literature and case studies in the field of servitization focus on the supplier side. The main questions being handled within these papers are: How the supplier company has to be organized for successful servitization? (Ahamed, Inohara and Kamoshida, 2013), Why suppliers fail in servitization? (Benedettini and Neely, 2015), Why manufacturers engage in servitization? (Vandermerwe and Rada, 1988; Oliva and Kallenberg, 2003) or What are the major risks for the supplier in servitization? (Fang, Palmatier and Steenkamp, 2008; Nenonen, Ahvenniemi and Martinsuo, 2013).

But as servitization became an important issue in the academic research, the focus on the suppliers can only be the starting point to understand the effects it has on B2B relationship and on all participants in the value chain.

Servitization can be understood as the process of creating value by adding services to products (Baines, Lightfoot, Bennedetti and Kay, 2009). Assuming that the servitization process is initiated by the supplier side, the main goals in servitization are margin increase and revenue leveling, the creation of an unique selling point and the customer's demand for more services (Oliva and Kallenberg, 2003). Several papers



point out that these goals can be achieved, if the supplier develops a mandatory skillset and undertakes fundamental changes in its organization and processes (Fang et al. 2008; Teece, Pisano and Shuen, 1997). Additionally, the servitization process can only be successful, if the customer appreciates the added value. So, to become a successful service provider, the new service has to meet the customer's needs (Ahamed et al. 2013; Fischer, Gebauer, Gregory, Ren and Fleisch, 2010; Windahl, Andersson, Berggren and Nehler, 2004). Therefore, it is mandatory for the supplier to obtain a deep knowledge of the customer and the customer's organization and processes. This will change the supplier-customer relationship to a deeper one than it is usually between an all manufacturing supplier and its clients. To achieve this, the supplier has to change the emphasis of the business model from a transaction- to a relationship-based one (Oliva and Kallenberg 2003). It becomes clear, that the servitization process not only changes the character of the supplier, but also the relationship to its clients.

There is only few research published about the changes the customer is facing during the servitization process in B2B relationships. But as the whole environment around the customer changes during the servitization process, it is very plausible that the customer has to adapt to it. At least the customer needs to be ready for the adoption of a new service. Both in technology readiness and in the dimension of organizational culture and habits as a relevant organizational component of service readiness (Vaittinen, Martinsuo and Ortt 2018). As every change includes the possibility of failure, there are risks in servitization for both the supplier and the customer. The literature and the existing research highlight a lot of potential risks and their root causes during the servitization process for the supplier. But there is only little academic work focusing on the customer's risks.

This research explores the evolution of the supplier-customer relationship during the servitization process. It focusses on the customers' experiences during the servitization process and on the customers' decision making process to engage in the service of a former product supplier. During the research period the topic of risk mitigation appears to have a big impact on the supplier driven evolution of the supplier-customer relationship in the servitization process. This research gives insight to the potential risks that customers face by applying new services from former all-hardware suppliers, what customers really sense as a risk and what the main factors are to engage in the new service eventually.

This research is a single case study on a manufacturer of medical equipment who started the servitization process a couple of years ago and on a sample of its customers. The different customers engage in product-service long term contracts either with specific service packages or all available services of the supplier. The focus of this case study is laid on the customers and their experiences. This research contributes to the overall picture of servitization and offers new approaches for further research.

## **2 LITERATURE REVIEW**

The term “Servitization” was coined in 1988 by Sandra Vandermerwe and Juan Rada in their article “Servitization of Business: Adding Value by Adding Service” for the European Managing Journal. They analyzed how companies of all kind of industries started to combine their products with services or started to offer services additionally to their original products. The article is considered as the starting point of a new branch of academic research. The authors state that the forces for companies to move into services are deregulation, technology, globalization and increasing competition pressure. Deregulation and technology can be seen as enabler of servitization, whereas the globalized market pushes manufacturers into the servitization process to withstand the arising numbers of competitors. In these cases, servitization is used as a competitive tool by setting up barriers to competitors, setting up barriers to customers, creating dependency, differentiating the market offer or diffusing new innovations (Vandermerwe and Rada, 1988).

This chapter will give an overview about the research in the field of servitization, the driving forces and different approaches. It will be elaborated how the servitization process changes the supplier-customer relationship in the B2B environment, which challenges arise for the supplier and what strategies are established to face these challenges and to mitigate potential risks. Finally, gaps in the research regarding the role of the customer and the reason for a closer investigation of the customer’s situation during the servitization process will be disclosed.

### **2.1 Driving forces for and different approaches in servitization**

Servitization can be described as an evolutionary process of a product-based company to a service provider. This process can be seen as a trajectory path from a

position in which the importance of the tangible product is relatively high, to a position in which the relative importance of services is high (Oliva and Kallenberg, 2003). The main driving forces for a manufacturing-based company to move towards a service-oriented business are margin increase and revenue leveling, the creation of an unique selling point and the customers' demand for more services (Oliva and Kallenberg, 2003). These driving forces can be assigned to three categories: financial, strategic and marketing related forces (Baines et al. 2009). Case studies and other research papers show that the main driving forces are related to these categories. Service offerings can increase the revenue margin substantially over the whole product life cycle (Wise and Baumgartner, 1999) and services can help to balance the revenue over the economic cycle that affect the product purchasing (Brax, 2005). Tailored service offerings also can create an unique selling point by corresponding to the special needs of the customer (Gebauer, Bravo-Sanchez and Fleisch, 2007). Additionally services are usually more difficult to imitate than product features (Gebauer and Friedli, 2005). So, the strategic advantage of an unique selling point established by services will remain with the supplier over a longer time frame. From a marketing perspective, services also increases the customer's loyalty (Gebauer et al. 2007). This increases the repurchasing rate of products and services. The characteristics of services itself increases the interaction between the supplier and the customer and gives the supplier the advantage to create new services that satisfy the customer's needs. This correlation will be further explained in the section about the supplier-customer relationship. In general servitization means a strategic change by which a company seeks to strengthen its position in the market.

The literature describes several approaches and examples to achieve this goal. There is the approach to bind specific services to a product to create bundles that will increase revenue and an unique selling point for the supplier (Vandermerwe and Rada, 1989). Many companies use their already sold and in-use products (product's installed base) to start the servitization process instead of developing services for new products. The main advantages are the lower customer acquisition cost, the lower knowledge acquisition cost and the lower capital requirements (Oliva and Kallenberg, 2003).

Another approach is to reach downward the value chain by offering embedded services, comprehensive services, integrated solutions or to try to gain distribution control in order to increase the profit margin (Wise and Baumgartner, 1999; Davies, 2004). Wise and Baumgartner describe the possible market much bigger, than offering

maintenance or spare parts. Instead they encourage the manufacturers to look at the whole lifecycle of the product and to use the standpoint of the end-customer. By this, many opportunities for new services would be visible for the manufacturers to increase their part of the value chain and the profit (Wise and Baumgarnter, 1999). These suppliers are moving into integrated solutions provision from different positions up and down the value stream (Davies, 2004).

A third approach into the servitization process is to increase the profitability by offering superior services that fits the needs for customers who are looking for outstanding quality or very specific solutions (Gebauer et al. 2007) and to increase the service related fraction of revenue (Fang et al. 2008).

Independent of the approach, a service offering can only contribute to the supplier's revenue if it is valuable for the customer. So, the service has to be designed based on customers' needs and comprehensive information these needs are required (Gebauer, Fleisch, Friedli, 2005). In order to gain the appropriate information the communication between supplier and customers has to be intensified. The interaction between supplier and customer will also be increased because of the different character of a service compared to a manufactured good. Therefore, the supplier has to change the business model from a transaction- to a relationship-based one (Oliva and Kallenberg, 2003) and has to adapt its organization's culture, structure and processes (Baines et al. 2009). So, in order to gain the advantages that are associated with the service business, the supplier has to change its business organization, its processes and the relationship to its customers. Changes in an established and functional system always contains a risk of failure. The servitization literature explains why and how the supplier-customer relationship has to change for a successful servitization process.

## **2.2 Supplier-Customer Relationship within the servitization process**

The supplier-customer relationship plays a key role in a successful servitization process. As the servitization process itself, the relationship is not static. Instead, the supplier-customer relationship is both basis and result of the servitization process. The relationship is the basis for the servitization process because the supplier has to identify the customer's needs in order to create appropriate services. It is also the result, because the service implementation itself will modify the relationship between the supplier and the customer, as it will be explained in the following.

The main reason for the mandatory initial change in the supplier-customer relationship compared to the relationship of an all-product supplier is the change in the characteristic of the offering. This can be understood by the definition of service activity.

“The simple definition of service activity: It is an action involving two economic units, one of whom works for, or helps, the other” (Hill, 1999). According to this definition, service always has a collaborative character, which is very different from the transactional character in the pure product business. The service is performed either at or with the customer and the quality of the service is heavily dependent on the performance and the skillset of the supplier (Baines, Lightfoot, Smart and Fletcher, 2013). This appropriate skillset and the performance ability have to be created on the supplier side before and during the servitization process.

The characteristics of services also demand a change of relationship because of the way the customer perceives services. The offered services have to match the expectations of the customer to a very high degree, because services cannot be resold by the customer as a manufactured good could be. It becomes mandatory for the supplier to get deeper information about the customer and the customer's needs (Kindström and Kowalkowski, 2009). The supplier has to gather information about the customer's processes and organization. For this reason, the supplier has to establish a closer relationship to the customer (Kowalkowski, Windhal, Kindström and Gebauer, 2015; Gebauer, Fleisch et al. 2005).

This is also a reason for manufacturing companies in many cases to use their installed base of products as the first step into the servitization process. The contact to the customer is already established and it is possible to find out about how the product is used by the customers. So, it becomes easier to develop adequate basic services, which are very much product related. Additionally, this kind of basic services rely on both manufacturing capabilities and service capabilities. Whereas advanced services depend on service capabilities only, which have to be established within the supplier's organization during the servitization process and might not be sufficiently available in the beginning (Sousa and da Silveira, 2017). It will also be easier for the supplier to convince a current customer of the product to engage with a product related service, as the customer might use the former experience with the supplier company and its current reputation as a proxy to evaluate the new service (Gebauer, Fleisch et al. 2005).

The servitization process will also change the information flow within the relationship. More information will flow from the customer to the supplier as it was usually between an all-manufacturing supplier and its customer (Kindström and Kowalkowski, 2014). There are different channels that can be used to transmit the information and it widely depends on the kind of service that is implemented. If a plain service contract for maintenance was established, the supplier can use its service-team to collect data about the usage of the installed machines during maintenance. Or the sales force can build up closer connections to the buyers on the customer's side to establish a better understanding about the use of the product. It can also be done by using new technologies like the online data exchange with the installed products, which will enable the supplier to use real time data about the status and the usage of the product (Kindström and Kowalkowski, 2014). If the service has a collaborative characteristic the contact points between supplier and customers will be increased on different organizational levels, like production on the customer's side and service on the supplier's side. This can definitely enrich the information flow but also can cause delays in sales and requires more interaction with decision makers on different layers in the customer organization (Kindström and Kowalkowski, 2014). So, during the servitization process the supplier-customer relationship should become closer and the information flow more intense. It has advantages to establish a stability in customer interaction by having assigned contact persons and frequent meetings. It can create "social capital" with the customers' personnel (Tuli, Kohli and Bharadwaj, 2007). Over the time people of the customer's organization become more open to talk about problems in the processes or about additional services they could imagine. This enriches the supplier's knowledge about specific customers' needs.

During the servitization process the supplier-customer relationship will also change from the customer's side. As the customer is giving information to the supplier, the customer will also demand additional information from the supplier. When services become more important in the business relation, the supplier's sales person seems like a customer's resource and is acting as a problem solver for the customer (Kindström and Kowalkowski, 2014). This will increase the information flow from the supplier to the customer and it will change the role of the supplier from a vendor to a consultant. Organizational changes on the supplier's side will be necessary to enable the sales force to fulfill this new role. More customer service representatives are needed to increase the consultant to customer ratio, because a consultant will spend

more time with each customer compared to a pure sales man. Additionally the back office has to be strengthened in order to support the consultants and procedures need to be established to process the additional information gathered by the consultants. Dynamic capabilities are needed to change the business and adopt new processes (Kanninen, Penttinen, Tinnilä and Kaario, 2017). Finally, these changes are necessary to understand the customers' broader business needs (Tuli et al. 2007) and to create new valuable services.

The offering of services itself will strengthen and intensify the supplier-customer relationship, because services have a collaborative characteristic and are performed over a time span. So, the service transition makes the relationship long-term and more intimate (Kowalkowski et al. 2015). The effective development of the relationship depends a lot on the kind of service and the servitization approach, too. The more the services become end-user process oriented the more interdependencies are created between the supplier and the customer (Windhal and Lakemond, 2010). To perform the end-user process-oriented or solution-oriented services much more collaboration between the supplier and customer is needed on various levels of their organizations compared to a solely product-oriented service. The supplier becomes part of the customer's ongoing operation and a constant information flow between supplier and customer is mandatory for a good service result (Windhal et al. 2004). The more the service is related to the customer's core business, the higher the dependency of the customer towards the supplier. This might increase the reluctance of the customer to engage in such kind of service, as the customer loses knowledge about the process targeted by the solution oriented service (Windhal and Lakemond, 2010). In these cases, performance guarantees and long term contracts are more likely (Windhal and Lakemond, 2010).

So, the step into the servitization process demand a closer relationship to the customer in order to gain mandatory information for the creation of appropriate services. The implementation of services for the customer will intensify the contact and increase the information flow between supplier and customer. This will enable the supplier to create even more comprehensive and solution-oriented services for the customer. The supplier-customer relationship becomes even closer and the interdependency rises. Dependent on the grade of collaboration the character of the supplier-customer relationship can alter to partnership. The relationship between the

supplier and the customer will be altered because of and during the servitization process.

Not only the development of an appropriate supplier-customer relationship but also necessary organizational changes create challenges the supplier company has to cope with.

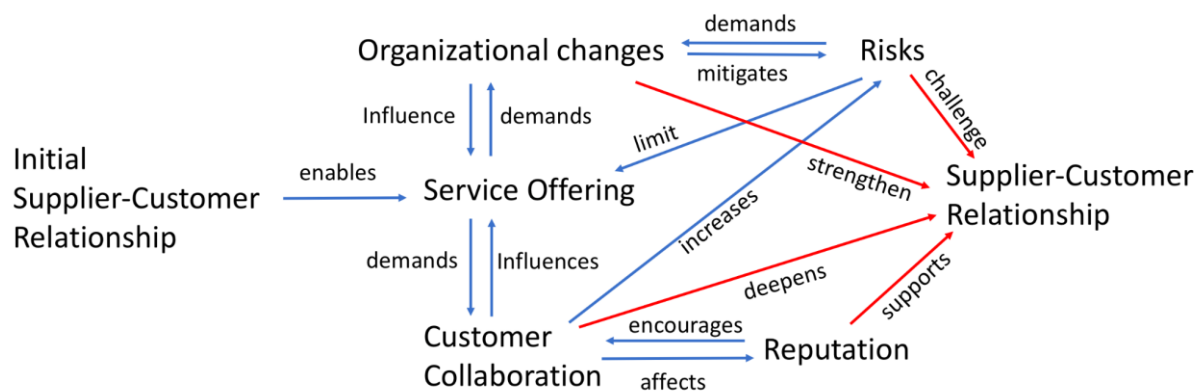


Figure 1: Supplier-Customer Relationship alteration

## 2.3 Challenges in servitization

As mentioned above the establishment of an appropriate supplier-customer relationship is the requirement for the start in a successful servitization process. The supplier aims to gather information about the customer's processes and about the usage of the product at the customer's side. This is how the supplier can sense opportunities for new service developments (Kindström, Kowalkowski and Sandberg, 2013).

In order to establish this kind of close relationship to the customer, the supplier is challenged to build up customer oriented capabilities which are focused on the new service business without damaging the product oriented capabilities of the organization. Tim Baines (2013) explains that it is necessary for the supplier to establish a strong front office with special skills as flexibility, relationship-building, service-centricity, authenticity, technically adept and (stress-)resilience. Only by this a closer relationship to the customer can be established without interfering in the R&D and the product oriented part of the company (Baines et al. 2013).

It is also a challenge for the supplier to convince the customer about the value of the offered service for him. Because of the service characteristic, it is very difficult for the customer to evaluate a service before it was performed (Long, Wang, Zhao and



Jiang, 2015). In contrast to a manufactured product a service cannot be tested beforehand. Because of its collaborative characteristic the service quality depends not only on the supplier's but also on the customer's performance and the implementation into the customer's processes. This becomes more relevant the more end-user process oriented the service is. Therefore, purchased services create higher perceived risks for the customer than manufactured products (Brown, Sichtmann and Musante, 2011). This is one reason for offering basic services first during the servitization process. In this case a supplier-customer relationship was already established and this might make it easier for the customer to sign a service contract. These basic services can thereafter increase the confidence in the supplier and the willingness of the customer to contract advanced services in the future (Sousa and da Silveira, 2017).

Another huge challenge for the supplier company is to identify the compatible customers for the service offer. As services have a collaborative characteristic the quality of the service is not only dependent on the supplier, but also on the capabilities of the customer, accordingly to the range of customer's collaboration (Hakanen and Jaakola, 2012). And a low quality service can easily damage the suppliers reputation. In service related business the supplier's reputation becomes much more important than in product related business. The customers tend to use the supplier's brand and reputation as a proxy, because of the difficulty to evaluate a service before it was consumed and the customers can base their decision only on what they currently know (Teece, Pisano and Shuen, 1997; Gebauer et al. 2005; Brown et al. 2011).

A good reputation is a very valuable asset for a supplier during the servitization process to increase the willingness of potential customers to engage in a service contract. There is evidence that reputation might be more impactful on important attitudes and intentions than trust, to invest in future relationship (Suh and Houston, 2010). It becomes more important for the supplier company to protect its reputation and to avoid any damage of it. Reputation can easily be damaged by failure in delivering promised services (Nenonen et al. 2013). To avoid this failure the supplier must not offer any service beyond its capabilities. Additionally, service customers have to be selected carefully according to their adaptiveness or willingness to collaborate (Tuli et al. 2007). By delivering higher quality and more effective services the brand and the reputation will be strengthened. The most important precondition for selecting a specific customer, is undoubtedly that the customer must be willing to strengthen the relationship and exchange information. As customers are not necessarily willing to

invest in relationships with all the firms they interact with (Kindström and Kowalkowski, 2014), the supplier company needs capabilities to identify the appropriate customers to engage with. Otherwise the collaboration is likely to lead to ineffective solutions (Tuli et al. 2007).

A continuously challenge for the supplier company is to build up the required capabilities to maintain the servitization process. These are new operational capabilities that correspond to the new established organizational structure and processes and especially dynamic capabilities. In contrast to operational capabilities which are needed to run the daily business of an organization, dynamic capabilities are mandatory to change the current business and to adopt new routines and processes (Kanninen et al, 2007). Dynamic capabilities can be defined as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et al. 1997). Therefore, dynamic capabilities are mandatory for an organization in a changing environment, in order to adapt its routines and processes according to the new conditions. As mentioned before, the environment is changing continuously for a company in the servitization process and dynamic capabilities are indispensable for a company that want to enter the servitization process in order to build up the required competencies to cope with the new challenges.

For a successful servitization process of a manufacturing company into a product and service oriented company, dynamic capabilities are required especially in the context of sensing service opportunities, seizing these opportunities by extracting revenue out of it and reconfiguring the organization (Kindström et al. 2013). The supplier's organization and its competences have to be modified and complemented to cope with the different challenges in the service business. This is not an easy task as a company's competences are difficult to change rapidly (Teece et al. 1997).

The servitization process and how deep the company can enter into the service market depends on its adaptiveness and therefore on its dynamic capabilities. The service offer has to be cautiously defined accordingly to the current available competencies in order to avoid a service delivery of bad quality, which would damage the brand and the company's reputation.

To cope with this challenges and to manage the organizational changes during the servitization process is not an easy task and new risks of failure for the supplier company can arise out of it.

## 2.4 Risks within the servitization process

There is evidence about increased internal risks in the supplier company caused by servitization (Benedettini et al. 2015). Internal risks arise especially because of the huge changes in the organization which have to be managed during the servitization process. If the required dynamic capabilities are not available in the organization, the company cannot cope with the mandatory changes. The company might not be able to establish a customer-centric unit and a strong front office with the needed special skillset (flexibility, relationship-building, service-centricity, authenticity, technically adept and resilience) in order to establish a close contact to the customer base and to develop valuable services without interfering the product-oriented part of the company (Baines et al. 2013). The company might also be unable to cope with the possible employees' reluctance towards the changes within the organization (Mathieu, 2001). The supplier might fail to develop valuable services or hurt the product business. Furthermore, the supplier company can fail in servitization because the management is too reluctant to enter the service sector in a sufficient way. Case studies show that 20 to 30% of revenue have to be generated by services before the servitization process adds value to the firm (Fang et al. 2008). Managers might be reluctant to spend enough effort into the service part of the company to reach this goal and risk to lose an opportunity to increase revenue and profit (Eggert, Hogreve, Ulaga and Muenkhoff, 2014). Or they do not implement the service related culture in the company and cannot find the correct balance between product and service (Kindström et al. 2013).

The more complex the service and the more ambitious the service strategy, the more the risks in servitization increase for the supplier (Mathieu 2001). Especially in a collaborative service delivery a great risk is the damage of the brand or reputation of the supplier company (Nenonen et al. 2013). Because the supplier company loses its sovereignty about the entire process of service delivery. Instead of this it relies also on the competence and performance of a supporting company which is in contact with the customer.

The bundling of services to a product also increase the internal risk of the supplier company, because product and services have to be integrated and the performance of the system optimized (Nordin, Kindström, Kowalkowski and Rehme, 2011).

Many research in the area of servitization was done in order to identify these risks, their root causes and a possible mitigation strategy. The possible risk of failure in the servitization process is high. Instead of avoiding this risk by not entering the service-business at all, successful manufacturing companies trying to gain the benefit while mitigating the risk of servitization. For instance the supplier company should start offering basic services, even though they are not delivering a high margin, in order to build stronger relationships and trust (Sousa and da Silveira, 2017). It will give the supplier deeper insight of the customers' processes and needs. The supplier can build up the required competences to develop new services that are valuable for the customer (Eggert et al. 2014). Long term this will enable them to sell advanced services with high margin and mitigate the risk to deliver a faulty service, which would damage the reputation, by reducing the occurrence probability.

The supplier as well might target specific customers who are willing to collaborate for more sophisticated services (Tuli et al. 2007). By this the occurrence probability of an ineffective solution and the risk of a damaged reputation can be mitigated, too.

## **2.5 The gap in the research literature**

There is little said in the literature on risks for the customer who engage in services offered by a supplier in servitization process. One paper mentions that customers would be more reluctant to engage in performance offerings directed towards their core processes, because they would lose control over these processes (Windhal and Lakemond, 2010). This reflects to the increasing interdependency of supplier and customer by engaging in service solution.

The supplier-customer relationship plays a central role in the servitization process. Former research revealed that the supplier organization has to adapt to this changes and actively modeling it to be successful in the changing environment.

But so far, no research focus on the impact of these changes on the customer's organization and its adaption measures within this changing environment. Although, it is comprehensible that the more sophisticated and solution-oriented services become, the more organizational changes are necessary as well in the organization of the customer's company. This will require dynamic capabilities on the customer's side, as well.

Even though Windhal and Lakemond (2010) suggest that a more thorough study of the customers and their perception of integrated solution could help to provide further insight into integrated solutions and interdependencies between supplier and customers, the majority of the research in servitization is still focused on the supplier.

Recently a paper was published, that focuses on the customers and their readiness to adapt new services from a former all-manufacturing supplier. This case study emphasized the customer readiness as a potential antecedent to the success of the supplier (Vaattinen et al. 2018). But also this study gives little insight into the customer's perception of the servitization process itself.

There is also a huge gap in the research regarding the customer's risk sensing during the servitization process of its former all-product supplier. As the potential risks increase for the supplier during the servitization process and the interdependencies between supplier and customer become stronger, it can be supposed that also the potential risks for the customer increase. It is plausible that the increasing interdependency of supplier and customer by engaging in more sophisticated services leads to a point where internal risks of the one party become an external risk of the other. But there is very little evidence which concrete risks the customer senses because of the supplier's entrance into the servitization process. The evidence in the literature so far is rather vague. Services itself creates higher perceived risk levels than the purchasing of tangible goods, because the customer cannot evaluate the quality of the service before purchasing (Brown et al. 2011).

This research paper tries to do a first step into the risk sensing of the customer and the impact of the change in the supplier-customer relationship on the customer's organization and processes.

### **3 METHODS**

To get a deeper view into the customers' situation during the servitization process and the evolution of the supplier-customer relationship, a case study of a manufacturing company in servitization process was performed. As the research aims to investigate the customers' experiences of the changing supplier-customer relationship during the servitization process, a qualitative approach was used.

The researcher choose the approach of a single case study in order to get a deeper insight in the evolution of the supplier-customer relationship and the impact of measures on the supplier side to the customer and vice versa. This research focus

therefore on a single case fulfilling four specific criteria which enables the opportunity to learn more about the unit of analysis (Stake, 1995), the supplier-customer relationship during the servitization process. In order to select a case that is able to give answers to the research question, the focus during the selecting process was laid on the characteristics of the supplier company, because this company's characteristic significantly defines the case as a whole.

There are several criteria an applicable supplier company has to fulfill for this case study. a) The supplier company must have built up its customer base on producing and trading tangible products. Failing this criterion the case would not be about servitization at all. b) The company must offer advanced services to its customers for several years, but not for more than a decade. This is important to identify a sufficient number of customers that already signed a service contract with the company and gathered experience with the service. The limited time range assures that the customers still can recall how the business relationship developed before this contract was signed, how it changed during the time thereafter and how the decision making process evolved. c) The supplier company should already adapted its organizational structure to the service business. The researcher defined this criterion to gain more relevant information about the supplier-customer relationship, because the organizational adaptation is supposed to have a major effect to the supplier-customer relationship and is vital for a successful servitization process on the supplier side. d) Finally the company has to be willing to support the research and have to be able to convince its customers to participate in it as well.

A supplier company that fulfilled all these criteria is the Brazilian branch of an international medical device manufacturer who is selling its products to clinics and hospitals. The products are available in the market for more than three decades and the company offers maintenance and repair services as well. In 2011 the company started to develop more and advanced services for its customer base. Since 2016 the company is forcing its servitization strategy and established a service department with more autonomy regarding the product related organization. Currently, the company supplies around 400 customers in Brazil with its machines and consumables. 32 customers signed a long term product-service contract including all available services and consultant support. A non-specified number of customers signed product-service contracts including specific service packages.

The data for this study was collected by semi-structured interviews with the management of the supplier company and the responsible contact persons on the customers side. The guiding questions for these interviews were developed based on the literature review and focus on the research questions (Appendix A to D).

Semi-structured interviews with the management of the supplier company give insight of the kind of services on offer and the supplier's servitization strategy. Most important these interviews aim to reveal how the supplier assesses the evolution of the supplier-customer relationship during the servitization process and what the supplier assumes are the potential obstacles on the customers' side that could prevent them from closing this kind of service contract with the supplier. Thereafter, semi-structured interviews with customers were performed. They focus on the evolution of the relationship from the customers' point of view and the customers' decision making process before closing the service contract with the supplier.

Four interviews were conducted with the marketing manager, the marketing and sales manager, the marketing planning manager and the account manager of the supplier company. Three interviews were conducted face-to-face at the office of the supplier. The guiding questions were designed in order to obtain information about the evolution of the service business, about the changes in the customer relationship during the servitization process, about the influence of the customer on the servitization process and about the estimated future development of the service branch. The interview with the account manager was done via skype and was conducted with different guiding questions to get more detailed information about the customer interaction, the development of the relationship and possible obstacles to win new customers. The interviews lasted between 44 minutes and 57 minutes. The total duration of the four interviews is 3 hours and 16 min. The interviews were transcribed and coded relating to relationship, service creation, reputation, customer's view, risk sensing and risk mitigation. Consistencies were grouped and contrary statements identified. The analysis of the data was focused on the research questions with regard to relationship and risk.

Manager	Role at supplier	Interview style	With the supplier for
M1	Marketing Manager	Face-to-face	5 years
M2	Marketing and Sales Manager	Face-to-face	6 years
M3	Marketing planning Manager	Face-to-face	2 years
M4	Account Manager	Videophone	10 years

*Table 1: Characteristics of the interviewed supplier's managers*

The aim of this research is to analyze a process. In this case the change of the supplier-customer relationship on servitization sensed by the customer. Van de Ven (1992) explains that it is necessary to conduct real-time observations of the events while they occur over a long time frame in order to get the required information about the process evolvement and its outcomes. As it is not possible for the researcher to attend one customer over the whole timeframe from him being a product purchaser up to the point of time when he has become a service customer for several years, 13 customers were selected who are in different stages. There are customers that are currently in the process of signing the first service contract, others that signed the service contract several months ago and several customers who made the experience of being a service customer for 1 to up to 6 years. In collaboration with the supplier company a sample of customers were identified. With this sample of customers it is possible to analyze the different experience of the customers in different stages of the process without conducting a research with one customer about several years. As there are customers who buy all the available services in a bundle with a long-term product contract and others who purchase distinct packages of services in such bundles, it was decided to add 7 of the former and 6 of the latter group to the list of interviewees. To avoid additional bias, it was decided not to select customers with regard to their foreign language skills. So, the interviews were either conducted in English or in Portuguese, dependent on the customer's capabilities. The identified customers were informed over the planned research interviews via e-mail by a representative of the supplier company.

Thereafter, they were contacted by the researcher via e-mail and phone in order to schedule the interviews. Unfortunately, some customers did not react to the e-mail request and could not be reached by phone over several weeks. Others rescheduled the interview on short notice multiple times and were not able to participate until the end of the interview phase. The interview phase lasted seven weeks, from the 10th of August until the 27th of September 2018. In the end, 5 interviews were conducted with all-service contract customers and 3 with particular-service customers. The guiding questions were slightly different to the two customer groups accordingly to the different type of the commercial relationship to the supplier company (Appendix C and D).

All interviewees were aware that the interviews are done for an academic research and that the data will be used only by the researcher and the research team at COPPEAD/UFRJ and that the raw data won't be disclosed neither to a third party



nor to the supplier company. All customer interviews were conducted via Skype or telephone, as the customers are located all over Brazil. The interviews lasted between 30 minutes and 72 minutes. The total amount of the 8 interviews is 5 hours and 54 minutes. The interviews were transcribed and coded relating to relationship, product, service, reputation, risk, advantages, disadvantages, obstacles to sign the contract and support to sign the contract. No commercial software could be used for the coding as the data material was collected either in Portuguese or in English.

Customer	Contract	Service supply	Role at customer organization	Type of customer	Product customer for	Service customer for
C1	Long term	All	Owner	Clinic	21 years	6 years
C4	Long term	All	Owner	Clinic	25 years	1 year
C5	Long term	All	Owner	Clinic	10 years	1 year
C6	Long term	All	Owner	Clinic	20 years	< 1 year
C7	Long term	All	Physician	Clinic	18 years	3 years
C10	Long term	Specific	Physician	Hospital	13 years	2 years
C12	Long term	None, yet	Owner	Clinic	20 years	Not yet
C13	Long term	Specific	Owner	Clinic	38 years	1 year

*Table 2: Characteristics of the interviewed customers' representatives*

The researcher starts a search for patterns and outliers regarding the research question topics, sensing of changes in the supplier-customer relationship and the decision making process. Especially the outliers were further investigated regarding a correlation between the two topics or a correlation to the data collected during the interviews with the supplier.

## 4 RESULTS AND DISCUSSION

The analysis of the interviews revealed information about the supplier-customer relationship from the supplier's and the customer's side of view. The supplier's management explains how the service unit in the company and the service offering were established. The data of the interviews shows that the evolution of the supplier-customer relationship during the servitization process is also influenced by risk mitigation measures of the supplier. Additionally, the customer experience during the servitization process is analyzed in relation to the supplier-customer relationship and the decision making process for engaging in the service contract.

## 4.1 The supplier

The interviews with the supplier management give insight in the development of the new service branch within the company, what role the supplier-customer relationship plays in this specific servitization process and about the evolution of the relationship during the servitization process.

### 4.1.1 ORGANIZATION MODE

In 2010 the supplier started to offer services to its current customers. It began in an unstructured manner and without a separated service organization. The main driver to start the servitization process was to create an unique selling point. At the beginning services were created to support the product business units. Services were not designed regarding the customers' needs.

At the beginning we developed the service by what we think the market wants.(M1)

The supplier realized that they have to change the internal structure to achieve the capability to invent new services that are aligned to the real customers' needs instead of the organizational presumptions. They used the already good relations to their customers and invited a sample of them to a workshop to find out about the most important services the customers could use in their business. Additionally an external survey company conducted a quantitative survey with 100 customers to confirm the outcome of the workshop. Furthermore, the organizational structure was changed and the service related part was separated in 2016 from the product oriented one in an own business unit. A list with possible service developments were created, ranked regarding their impact and complexity. The most easiest services were realized first. The service development process in this company is very much in compliance with the process described by Gebauer, Fleisch and Friedli (2005) to avoid or to overcome the service paradox. The service development is based on solid market analyzes and information gathered from the customer base. The service unit of the supplier still follows this path. Upcoming ideas for new services are analyzed regarding the possibility to realize it, the availability of needed resources and the market demand.

We are really specific about that. We see what can we do. Do not try to go in a path that we have no idea how to do it.(M3)

This attitude enables the supplier to deliver services with very little chance of failure. The aim is to deliver high quality service. This tops also revenue and margin.

#### 4.1.2 REPUTATION

All interviewees realize that the reputation of the company is very valuable and sensitive. The good reputation of the supplier's high-quality product supports the service business. When asked about the reluctance of customers to sign a service contract, two managers suggest that 1 out of 5 respectively 1 out of 3 customers might be reluctant to sign a service contract.

Because the brand of (our company). We have a very good perception in the market. (Our company) is the best in quality, the best in relationship and very, very, very ethical company. And this is, for us is easy to have this proposal of service, because the market might not have any restriction of (our company).(M2)

The brand and the reputation support the service business. The managers very much see the risk to damage this valuable asset by failing to deliver high quality service to the customer. One manager describes, why he sees a higher probability to damage the reputation by services than by products.

I think we have a risk because it is easier for us to manage product and equipment. (...) and we have a good quality in this. Services is a new branch of (our company). And if these services not fit the quality the same that is the product and machines, we have the risk to damage this condition of quality in the product. (...) We need to keep every moment to check, to revise and maintain the quality of service.(M2)

The management sees also the risk to damage the supplier's reputation by the customer's action.

And there is always a risk of course, if something happens in this client (...) any accident, maybe the patient or the market could associate the brand, you know, the clinic with (our brand). Because we are so close to them.(M3)

So, the management of the supplier is aware that service has different characteristics than products. They know, that the good reputation of the company's product base supports the service business and that the reputation can be damaged by failed services. They are also aware that the company is new in the service business and therefore it is more difficult to manage it. This increases the risk of damaging the reputation. As services have collaborative characteristics the risk probability depends also on the customer's behavior. Therefore, the supplier uses the approach of selecting only customers with the priority of delivering high quality services to their customers. Doing this, the supplier company reduces the probability of service failure and

reputation damage. New customers for the integrated service contract are selected by the quality of service they offer to their customers.

We choose for the clinics that provide a good treatment.(M4)

We segmented this market and we choose the customer that have a good quality to provide the service for their patients.(M2),

They are clinics that offer a good treatment for the patient. This is the most important.(M1)

One manager (M2) ranks the criteria for selecting a customer for the long-term comprehensive service contract as follows:

Quality of treatment

Relationship of loyalty

Financial situation

The manager expressed his confidence that in the long term, high quality treatment will support the customer's financial situation.

We trust that the possibility to increase quality is related to the reimbursement.(M2)

#### 4.1.3 SUPPLIER'S PERSPECTIVE OF THE RELATIONSHIP

The supplier also changes actively the relationship to its long-term contract customers.

So, we developed this special, this closer relationship with them.(M1)

Instead of salesmen the supplier employs consultants. Each consultant takes care of a limited numbers of customers. They visit the customers more frequently and have the time to create a closer relationship. Thereby the supplier gains more information about the processes at the customers side, which will help to create new valuable services for the customer. The customer has the possibility to contact "his" consultant if he has any question or problem. The fact, that always the same consultant interact with the customer and its employees can create "social capital" for the supplier company, as described by Tuli, Kohli and Bharadwaj (2007). The goal is to grow up a very intense relationship with the characteristic of loyalty on both sides. Both sides will gain benefits out of this relationship and the barrier for possible competitors will rise.

The supplier company also changed their view on the long-term contract customers. They are seen now as business partners, delivering jointly a service to the end-user. The supplier offers more support for the customer, in order to guarantee the best quality for the end-user. The customer in this constellation becomes much more

demanding. He is actively asking for knowledge, additional trainings and business information. This leads several times to conflicts with other business units. This shows, that it is not always sufficient to establish a separate service business unit, but a service orientated attitude in the whole organization is necessary to support the servitization process.

The managers can see only financial issues, when being asked about the risk that the customer would sense to sign a long-term contract.

Cost. Cost, cost. Cost is the only problem.(M4)

At least two managers can imagine that customers would be more reluctant, if a service would have access to all of the customer's treatment data.

The supplier company sense an additional risk caused by the selective appointment of new long-term service customers. Current product customers which do not match the quality criterium might ask for this kind of contract. If the supplier stick to the principles they might lose a product customer. In this case, a risk mitigation measure in the service branch could damage the product branch of the organization.

## **4.2 The customers**

All eight interviewed customers have a long commercial history with the supplier company of at least 10 up to 38 years. All of them started the commercial relationship before the supplier company initiated the servitization process. One customer signed a service contract with the supplier six years ago. Six customers signed a service contract during the three recent years, when the separate service unit in the supplier's organization was already established. One of the interviewees is just about to sign up a service contract with the supplier company. All interviewees' enterprises signed long-term contracts about medical devices and consumables with the supplier company. For the companies of five interviewees this is a product-service bundle contract containing all available services offered by the supplier. For two companies it is a product-service contract that contains specific consultancy services. Finally, one interviewee is about to enter a long-term contract about a product-service bundle with specific training packages.

The interviewees were asked about their history with the supplier company and about the major reason for purchasing its hardware products initially. They talked about the evolution of the relationship with the supplier before, during the service contracting phase and thereafter. They were also asked about the decision making process, the

major risks they identified before signing up to this kind of service contract and about the main reasons to engage in this contract. They gave information about their adaptation to the new services and the support by the supplier company. They also talked about the possible risks they sensed before they signed the contract, what disadvantages they could imagine caused by the contract and what advantages and supportive factors made them to sign up nonetheless.

#### 4.2.1 CUSTOMERS' PERSPECTIVE OF THE RELATIONSHIP

In general, all interviewees describe their initial relationship with the supplier company as a good relationship.

\*<sup>1</sup>Our relationship with (the supplier) was always very good, very salutary.(C1)

While this general statement resonates through all the interviews, some interviewees give more detailed information about the reason for the good relationship with the supplier during the preservice phase of the business relation.

We always have very good relationship with (the supplier), because (the supplier) always give us a good assistance with the (...) machines and supplies.(C4)

Even though the business relation at that time was based on the supply with tangible goods, this interviewee expresses that the root cause of the good relationship with the supplier was the good assistance, which is already a service related quality. The statement of another customer in this research indicates that the supplier's business model in this early stage was already moved from a purely transactional to a relationship based one.

\*They were extremely attentive. (...) And they were extremely understanding, helpful, they attended us very well.(C13)

One interviewee describes the initial relationship with the supplier company almost like the one to a family member.

\*The relationship with the supplier began a long time ago. (...) The supplier took part in our live since the beginning.(C6)

It displays the closeness of the relationship between supplier and customer that was established already before the extended service contract with the customer was signed.

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<sup>1</sup> \* Translated from Portuguese

Asked about the changes in the supplier-customer relationship since the service contract was signed, most of the customers state that the relationship became closer. This is primarily caused by employing consultants instead of salesmen for those customers obtaining all available services. These customers refer to the higher availability of the supplier's representative. However, it is interesting that some of the interviewees first negate any change in the supplier-customer relationship since the contract was signed.

\*I do not see any relationship changes there. Ahm, sure. In relation to an agility, to a greater availability to attend us, is now much bigger with this program. Without a doubt.(C5)

These kind of statements indicates that the characteristic of the supplier-customer relationship did not change fundamentally from the customers point of view by closing the service contract. There is evidence that the relationship changed continuously, already before services were offered by the supplier.

(Because of the amount of purchased products) the relationship with (the supplier) was very, very close. The (brand name) service appeared naturally. I think this was an evolution of a relationship over the years which developed in a very natural form.(C1)

Even though the interviews with the supplier's managers show, that the supplier makes a lot of effort to increase the supplier-customer relationship and to deliver a high quality service, the customer does not associate this extra effort necessarily with the service contract. As one customer is referring to a delivery of consumables during a severe lorry strike in Brazil.

\*And (the supplier) proved to be a very close partner. They helped us solve the logistics problems of the material. Whether or not that has to do with (the service contract), I do not know. But they have gained a great deal of credibility.(C6)

The fact, that the customer cannot tell whether this special service was performed because of the new contract, shows the supplier's high reputation from the customer's point of view. This customer can imagine, that the supplier would make this effort for every kind of customer. This customer also describes the process from a product-based relationship with the supplier to the product- and service-based one, as a natural evolution.

There is evidence that the closer supplier-customer relationship necessary for a successful servitization process has been already established before the service contract was offered. That is why the customers do not sense a change in the

characteristic of the relationship except of more frequent and more intense communication.

The relationship between all the customers and the supplier began with the acquisition of medical devices. Asked for the reason to buy from this specific supplier initially, all the customers agree, that it was because of the product quality and usability and because of the company's reputation which is also based on the product quality.

\*Because of the quality of the equipment. The quality of the equipment and the quality of the technical support.(C1)

The statement of another customer made it very clear, that the supplier's reputation that is based on high quality played a very important role in the decision to purchase from this supplier.

\*This is a brand. I am sure that (this supplier) is the one that has the best quality products. And we can have this.(C7)

One customer describes the whole transition from other suppliers to the point of using hardware from this one supplier exclusively.

Because my nurses all told me that the machine (of this supplier) is more friendly to use. And then I was changing from other machines to (this supplier's) machine. (...) Well, before the close relationship with (this supplier), we used to ask for a lot of price. (...) Price of other companies. But we saw about the quality of the products of (this supplier). (...) What we decide to keep and to increase the relationship with (this supplier) was the good relationship with the representative and of course the quality. I think that (medical treatment) machines of (this supplier) are better than others. Because it is very friendly to use, is very simple and very secure, too. (...) I think (this supplier) is one of the best companies for (this medical treatment) supply.(C4)

This customer describes all the relevant motivation to purchase equipment exclusively from this supplier. Initiated by reputation and the experience of others with the equipment, the customer purchased the first equipment and the relationship to the supplier was established. The good relationship with the supplier's representative and the experienced high quality of the product led to a decrease in price sensibility of the customer. The customer now prioritizes product quality above immediate cost and he evaluates the product of this supplier above all the others. The customer's own positive experience with the supplier and its products increases the supplier's reputation sensed by the customer.



Within the observed customer segment, the success of the supplier in the product based business, relies very much on the product quality, the technical support and the reputation.

The fact that all these customers signed a long-term service contract with the supplier could be seen as a support for the thesis of Gebauer, Fleisch and Friedli (2005) that customers use the reputation of a manufacturer as a proxy for the evaluation of new services. Also the positive experience with product related services like maintenance and technical support might had helped to convince the customer to purchase the consulting services of the supplier. However, in this case study it is not such clear evidence, because the supplier company offered the interviewed customers a long-term contract to buy exclusively its products for fixed prices in a bundle with consulting services. So, it is not clear if the customers would have signed also a pure service contract instead of the offered bundle. How important the product related part of the bundle for the customers was becomes obvious when they were asked directly about the main reason to sign this kind of contract. The majority of the customers mention the possibility to buy advanced machinery for a reasonable price, which in most cases would enable the customers to expand or to modernize their business. The included services were mentioned thereafter if at all.

\*(The supplier) made a proposal with a very good price for the supply of this equipment since we signed the contract (of service).(C6)

It became clear that the customers are focused on the product component of the contract, when asked about the main reason to enter this product-service bundle contract.

Most of all, we will be able to buy a new (advanced machine) which is in our interest. (...) I guess the price of the products and the stability of the prices along the way are the main reasons we decided to sign.(C12)

The customers that also mention the service component in their answer, always refer first to the product and the price.

\*We had a good agreement for equipment prices and as we have in view some expansions of the clinic, we would need more equipment. And we have already established commercially within this contract. We have already established equipment prices and this was one of the things that was important. And the other thing that weighed on the decision was undoubtedly the exchange of experience and advice from a nursing point of view.(C1)

Even a customer that explained explicitly in the earlier part of the interview, that the new contract enabled his enterprise to deliver the “maximum quality of care to the

patients”, refers to price and machinery availability when asked explicitly about the main reason to sign the contract.

\*A way to expand quickly the number of machines at the lowest cost. (...) So we created an advantage in the matter of having the machinery and already combined with scheduled maintenance with preference and everything (...).(C5)

Only one customer named different reasons for closing this kind of contract. The customer focus on the supplier's reputation, the services and the established relationship.

Well, the main reason I think was the company, because I already work with (this supplier) before and the machines (are) always very well, the supply is very good. And then I think that another thing was very important was the kind of assistance of the (...) manager. To doctors and managers a lot of courses. (...) And another thing is very important, that some (supplier's) representatives came here (...) to help the nurses and technicians to get better some working with the machines. (...) I always think that (the supplier) was a very good company.(C4)

It seems, that for the majority of customers the characteristic of a supplier company in servitization process remains the one of the material supplier. The reputation of the supplier and the decision making on a product-service bundle contract is predominantly based on the characteristics of the products and the customers' previous experience with the supplier company.

But focusing only on the immediate answers of the interviewees does not show the broader intention for the customer to engage in this kind of contract. It becomes clearer when the customers talk about the major advantages they experienced since they signed the product-service bundle contract with the supplier. If really a lower price for the machinery would be their main goal this topic should be the dominant one while talking about the advantages. Instead all current service customers accentuate the quality increase of the treatment and within their processes.

\*Particularly in the circumstance of quality we gained by this partnership. (...) And changes (in the processes) were always made regarding the quality and the patient safety.(C1)

This customer refers especially on the changed supplier-customer relationship. He sees it now as a partnership that enables him to increase the treatment quality. The customers highlight the new services and the advantages they experience.

\*And later, there was this opportunity with the service. What we really saw as a situation of achieving the highest quality of care that we are providing for the patient under our care.(C5)

The customers see the new acquired services as a mean to achieve an overall goal, which is the high quality treatment of the patients.

\*We were able to bring training. To make a continued education, that is important. Keep up-to-date professionals and introduce all work processes within a higher quality level.(C7)

One customer even explains that the contract changed the supplier-customer relationship between his enterprise as a service supplier and its end-customers.

\*It (the impact of the service contract) was extremely positive and there was a significant improvement in our way of seeing and serving our patients.(C13)

There is evidence that the high quality treatment is a major goal for the customers. This should be expected as all customers for this specific service offer were selected by the supplier company on this criterion as mentioned in the previous chapter. While the treatment quality remains as the dominant goal, the price for the product and the machinery availability seems to be more like a trigger to enter the product-service contract.

It becomes also evident that the service itself could not be evaluated by the customers comprehensively during the decision making process. Only after the service was executed the value became visible. This is because of the characteristic of services (Long, Wang, Zhao and Jiang, 2015) In this case study the supplier uses the hardware component in the product-service bundle as the trigger for the customer to sign this contract. For the customer this is a possibility to test the service while gaining the price advantage for the hardware component.

#### 4.2.2 DECISION MAKING PROCESS AND RISK SENSING

The customers were also asked about the risk they experienced during the decision making process of entering the long-term product-service contract. The major risks that the customers identified as such during the interviews are financial risks as it was already described by the supplier's account manager. Several interviewees mentioned the risk to be bound contractually to order all materials from the supplier company for a predefined price. In these cases the customers sensed a risk of the long-term characteristic of the contract, but then refer this exclusively on financial risks again.

And now it is during five years it is exclusivity. That is it, because I got some afraid about that. (...) For example, if some products from suppliers is cheaper in another company, now is impossible to buy in another company.(C4)

One interviewee made it clear, that financial risks were the only sensed risk.

\*So, the only risks that we had and that we used (in a risk analysis) were the financial risks.(C1)

Only two interviewees identified other risks when closing the contract. One interviewee states the dependency of a single supplier. During the whole interview, the customer explains that he faces the risk as a small business to become very dependent on a globally acting supplier that dominates the domestic market.

\*So the risk, I think the great risk is this of you getting very dependent on an exclusive supplier. (...) The point is that (the provider) in Brazil, it interpenetrates the whole treatment process. It dominates all aspects (of this therapy).(C6)

It is very interesting that only this one customer talks about the risk of a high dependency in detail and repeats this risk and the possibility of a market domination by the supplier during the further part of the interview. It is interesting, because this risk is not an individual one, which would only be relevant for a specific customer, but it is a risk that is relevant for all market participants. Therefore it should be seen as a risk by the other customers, too. Asked about the most important preconditions to enter this kind of long term service contract, the same customer said:

\*I think the most important thing for you to sign this type of contract is for the company, (the supplier), to have credibility with our company. We believe there is a shared willingness between (the supplier) and our company to grow together from the point of view of knowledge, from the point of view of best practices, beyond the commercial aspect. (...) And I need to believe that (the supplier) is not using this just as a marketing issue. But that this is a genuine desire of joint partners, to believe that it is a mutual benefit, both of them and ours to improve, to improve our service.(C6)

The customer explained here very detailed what is necessary for him to mitigate the risk of dependency and market domination. The occurrence probability of the risk might not change and there might be a strong dependency on the supplier, but the impact of this dependency will be effectively mitigated, if the customer and the supplier are working together as partners having a common goal to improve the service to the end-customer. In this case the supplier would not have the intention to weaponize the customer's dependency in order to maximize the profit. Instead, the common goal of improved treatments would incite the supplier to offer its products for a fair price.

Because this would enable the customer to keep its equipment up-to-date, which is the basis for a high quality treatment. Furthermore, knowledge exchange between the supplier and its customers and the optimization of processes could increase the quality and the effectivity of the treatment as well as its profitability for the customer. Which would enable the customer to renew its machinery more frequently and lead to a mutual benefit for supplier and customer.

The interviewee signed the service contract recently and has little experience with the service, yet. This might be the reason for him being the only customer in this case research mentioning the risk of high dependency. All customers with a long-term contract which includes all services, mention the increased treatment quality as an advantage caused by the contract, as it was mentioned earlier.

So, the interviewees who consume the offered services for more than one year, made the experience that these services increase the quality of the treatment and of the processes in their business. This experience seems to mitigate the potential impact of the risk of dependency, as it was explained above. Most likely, this is the reason why this risk is not seen as a risk anymore or at least as a risk that can be neglected.

Another risk that was mentioned by one interviewee only, is the risk to be unable to buy materials of higher quality from other suppliers, when it is available on the market.

Well, another potential problem is if there is a product that I don't like particularly (...) it is possible that the product may change overtime and then we wouldn't be able to go to the market to get another, better product.(C12)

This customer is the only one who senses the risk, that the long-term contract may prevent the business from purchasing better materials. In contrast to this customer other interviewees see only a financial risk in being unable to buy cheaper products because of the long-term contract. However, all long-term contractors cannot buy materials from other suppliers. Therefore, the risk of being unable to buy better products is valid for all these customers. Why is it mentioned by only one of the interviewees? The customer who mentions this risk is relativizing it himself in the next sentence on the interview.

It's a possibility, but not quite probable(C12)

So, the risk exists and if it occurs the impact would be significant, because the customer would not be able to purchase the product of higher quality – if we use this term for “better”. But the customer admits that the occurrence probability is low. This

indicates, that the risk is already mitigated. As mentioned above all interviewees started their commercial relationship with the supplier because of its high quality products or the supplier's reputation which is based on its high quality products. And all of the interviewees have experience with the products of the supplier for at least 10 up to 38 years. If there had been a supplier of higher quality products during this time, the customer would have changed to this other supplier before entering the long-term contract. The experience over such a long time frame makes it difficult for the customer to imagine that another supplier could excel the product-quality of the current supplier.

I think that we have a good technology from this company. This company is, I believe that is one of the best companies in the world doing this.(C10)

So, there are two risks the customer is facing by entering a long-term product service bundle contract that are already mitigated. These mitigations were not intentionally initiated by the customer, but have their root cause in another risk mitigation measure on the supplier side.

The supplier selected the customers for the long-term bundle contract by a list of criteria. The most important criterion is, the treatment quality. All these customers must put their major priority on the improvement of their treatment quality. And the supplier will support this ambition by its services and high quality products. This measure is seen from the supplier perspective as a mitigation of the risk to damage the brand and the reputation.

## **5 CONCLUSION**

The aim of this research is to gain a deeper insight in how the customer sense the servitization process and the changes in the supplier-customer relationship. Currently there is very few research material available focusing on the customer in the area of servitization. The overwhelming amount of research is focused on the supplier and the measures the supplier should take to be successful in the servitization process and to mitigate existing risks. The characteristic of the supplier-customer relationship is mostly defined by the supplier's decision. Therefore, the information gained by the interviews with the supplier's management about the supplier's taken measures to design this relationship, could be used to understand the supplier's intention and the characteristic of the supplier-customer relationship. The central measure the supplier company in this case study choose, is the selection of dedicated customers for their comprehensive service offer. To define the service strategy the supplier in this case

study does not only a need-based segmentation of the customers, as it is described by Kanninen et al. (2016). The supplier does also a segmentation of the customers based on three criteria in order to select appropriate customers for its comprehensive service offer. The most important criterion is in resonance with the supplier company's vision. By this selection the supplier creates a superordinate goal based on its company's vision, which is valid for both the supplier and the customer. The investigated customers in this case study research did not mention a fundamental change in the characteristic of the supplier-customer relationship since the service contract was signed. Some customers describe it as a natural evolution. Nevertheless, the long-term product-service bundle contract created a closer relationship which was sensed by many customers as partnership. Supplier and customer are working together towards a common goal. The root cause for this lies in the careful selection of customers by the supplier.

How strong this measure is and how it affects the supplier-customer relationship and the customer sensing becomes obvious in the analysis of the customers' risk sensing during the decision making process.

The majority of the customers signed the long-term service bundle contract because of the hardware quality and the attached price. It became obvious that cost was the dominant risk seen by the customers when engaging in the product-service bundle contract. Every customer mentioned this risk and for most of the interviewees this was the only risk they could see. Only two participants mentioned two other risks additionally. Firstly, market domination of the supplier and secondly, the inability to buy consumables of higher quality if they were available on the market during the contract period.

As these risks were obviously present and also relevant for all the interviewees, the question had to be answered: Why the other six customers were not able to identify these risks? This question is important, because risks that are not seen, cannot be mitigated intentionally. This is important for the supplier, too. As in this very close business relationship with high interdependencies, the risk for failure of one partner becomes an external risk for the other. Consequentially it becomes a risk for the supplier as well.

The interviewees of the supplier company identified the serious risk of brand and reputation damage, because of a potential failure on the customer's side. To mitigate this risk, the supplier defined a superordinate goal, which is "best quality

treatment". It is the target for the product and service business, and for their service customers. By this measure unintentionally the two mentioned customer risks were mitigated, too. This might be the reason, why these risks were sensed only by one of 8 interviewees each. This case study indicates that in a very collaborative service related environment, risks can be mitigated by defining an overall goal by the supplier. This goal has to be the same for the service, the product and the customer. Additionally, it must target the need of the end-customer.

## **5.1 Managerial contributions**

This case study shows, that the customers' risk awareness for entering the service contract is influenced by the risk mitigation measures on the supplier side and the alteration of the supplier-customer relationship by the supplier. The supplier achieves this, by creating a superordinate goal which targets the end-customer and is the basis for the offered services and products and for the customer selection. In this case it is the goal to achieve the best possible treatment quality. This study gives evidence, that the customers do not sense several risks anymore only after they experienced the advantages of the acquired service offer.

Therefore, the supplier should communicate its superordinate goal openly to potential service customers and encourage them to get in contact to current service customers that already made the experience. By this, the inhibition threshold to sign a service contract can be decreased.

This study also shows, that customers for advanced services are selected by the supplier company according to the superordinate goal. In this case the customers gain advantages from this contract, by entering into a partnership with the supplier to achieve together this superordinate goal. This also means that product customers who are not selected do not gain these advantages. As more former all manufacturing companies are going to engage in the servitization process, the risk for the customer increase of not being selected for an advantageous service collaboration because of a discrepancy between the own goals and the supplier's goal. In an environment where servitization plays an important role, it becomes more important for product purchaser to consider the supplier's superordinate goals, as they become even more important in the service business.



## **5.2 Limitations**

This single case study is based on interviews with managers of one supplier company and its customers. Therefore the described observation were made in a specific industrial sector in a specific country. It is not clear, if the results are specific for the medical device sector or a comparable sector that is very much service based for the end-customer.

During the research there was nothing identified, that would have been Brazilian specific or influenced by the Brazilian business culture. Never the less it cannot be eliminated that business culture in other countries might have different influence on the phenomenon observed in Brazil.

## **5.3 Future research**

This research showed that the risk sensing of the customer is very much dependent on the supplier-customer relationship defined by the supplier's decisions. Existing risks for the customer can be mitigated by supplier's action. This single case study focus on the customers that correspond to the superordinate goal of the supplier, as these customers were all selected by the supplier on this criterion. Research on customers who do not correspond would be needed to analyze their risk sensing during the servitization process.

As already mentioned, this study is a single case study in a particular industry and environment, in which the business relationship between the customer and the end-consumer is purely service-based. More research in risk sensing of customers in other areas is needed to identify if these findings can be observed in other industries, too.

## 6 LITERATURE

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## 7 APPENDIX A

### QUESTIONS TO THE MARKETING MANAGERS

**Please tell me about the time when the idea appears to establish a new service and tell me how the service was designed.**

When did the project for a full service development start?  
 What were the main reasons?  
 What was the approach to define the full service?  
 Did you think about the risk the customer may take?  
 Did you analyze what obstacles the customer may face?  
 How did you gather the necessary information to design the service?  
 Was there a kind of test phase planned?

**Can you explain, how the contact to the first potential customers were established and describe the process until the first contract were signed?**

Did you decide to have a pilot customer?  
 By which criteria this pilot customer was chosen?  
 Were the service fixed and ready when the first customer were contacted?  
 Were the service customized?  
 What role played the customer?  
 Did you feel that the potential customer were reluctant?  
 What did you think were the biggest risk the customer were facing?  
 How difficult was it to explain the service and convince the first customers?  
 When the first contract was signed?

**Tell me about the customer relationship before and since the contract was signed.**

Had the organizational structure at the supplier company been changed?  
 Did the communication to these customers changed?  
 Did the customers' behavior change?  
 Did the supplier get a better insight into the customers' business because of this full service offering?  
 How about interdependences between the all service customer and the supplier company?  
 Do you think the supplier took additional risk by offering this service?  
 Do you see any restrictions the supplier would not have without the service contracts?

**Please tell me about how the service product evolved over time after more customers signed contracts.**

Were every contract customized?  
 Who made the proposals for customization?  
 Were there groups of customers signing identical contracts?  
 Did problems arise by handling a lot of individually customized products?  
 Got older contracts updated by features that arose out of new contracts?  
 Who initiated the latest changes in the full service product (supplier or customer)?

**How do you see the future of the service product?**

Will all customers be able to sign a contract?  
 If yes: Do you think that will also cause problems? (On supplier and customers side)  
 If not: Is this caused on supplier's or the customer's side?  
 What would be the criteria for the supplier to chose the customer?

What would be the reason for customers to stay away?  
Will customization go on?

## 8 APPENDIX B

### QUESTIONS TO THE SUPPLIER'S ACCOUNT MANAGER

**Please tell me about your experience of the relationship between the supplier and its customers.**

Which single word describes the relationship best?  
How often you have direct (Personal or Telephone) contact with a single customer in average?  
Did the full service changed the relationship?

**How do you identify a possible new customer for the (brand) service?**

Are there customers actively asking for the product?  
Are there also potential customers that have not been (the company's) customers yet?  
Is there any criteria that disqualify customers for the (brand name) service?  
Is it difficult to convince the customer to engage in the (brand name) service?  
How well do you think you know your customers' needs?

**Can you describe how the customization process take place?**

Do the customers tell you about their worries they might have with the implementation of the (brand name) service?  
What are your limitations in customization of the product?  
Have you done risk analysis beforehand?

**How do customers respond to the (brand name) service?**

Do customers tell you about their issues they might have?  
Does it become easier or more difficult to win new customers for the (brand name) service?  
What do you think is the reason for this?  
Do customers actively make suggestions about additional services they might need?

**How do you see the future of the (brand name) service product?**

Will all customers be able to sign a contract?  
If yes: Do you think that will also cause problems? (On supplier and customers side)  
If not: Is this caused on the supplier's or the customer's side?  
What would be the criteria for the supplier to choose the customer?  
What would be the reason for customers to stay away?  
Will customization go on?

## 9 APPENDIX C

### QUESTIONS TO (brand name) all Service CUSTOMERS

**Can you tell me about the time before your company established business relationship with (the supplier)?**

What were the main differences in service you provide to your customers?

Were there any differences in your process or organization structure?  
Can you recall the most challenging issues during this time?

**Please tell me how your business relationship with (the supplier) established from the beginning up to the (brand name) service.**

When did your business relationship start with (the supplier)?  
Why did you choose (the supplier) as your hardware supplier?  
Tell me about your business' expectations about (the supplier).  
Could (the supplier) meet these expectations?  
When did your company become a (brand name) service customer?

**After you get to know about the (brand name) service, can you recall how your internal decision making process evolved?**

Can you recall the main reasons for deciding for the (brand name) service at that time?  
Were there some doubts about engaging in the (brand name) service contract?  
Did you perform any risk analysis or cost to benefit analysis beforehand?  
    If yes: Tell me about the risks you identified  
            Were the costs just monetary?  
            Were you able to mitigate the risks? (alone or with the help of the supplier)  
  
    If no: Why wasn't it necessary?  
            Looking back, do you think it would have been worthwhile?  
            Do you face unexpected risks or cost since then?

**Can you tell me about (the supplier's) role during the negotiation phase and how you finally implemented the (brand name) service into your business?**

What are your first thoughts recalling the negotiation phase?  
How did your preparation look like before engaging into the (brand name) service contract?  
How did you experience (the supplier's) role during the pre-contract-phase?

**Tell me about the impact the contract had to your company and to the relationship with (the supplier).**

Did the relationship to (the supplier) change?  
Did your organization change?  
What was the most innovative service you can offer your customers because of the cooperation with (the supplier) and the (brand name) service?  
Do you see any restrictions your company would not have without the (brand name) service contract?  
What are the main advantages of the (brand name) service contract for your company from a today's point of view?  
Can you imagine any additional service (the supplier) could add to the (brand name) service?

**Would you sign this kind of contract with other companies as well?**

What would be the most important preconditions?

**What single word describes your relationship with (the supplier) best?**

## 10 APPENDIX D

### QUESTIONS TO (brand name) PART SERVICE CUSTOMERS

**Can you tell me about the time before your company established business relationship with (the supplier)?**

What were the main differences in service you provide to your customers?

Were there any differences in your process or organization structure?

Can you recall the most challenging issues during this time?

**Please tell me how your business relationship with (the supplier) established from the beginning up to the (brand name) service.**

When did your business relationship start with (the supplier)?

Why did you choose (the supplier) as your hardware supplier?

Tell me about your business' expectations about (the supplier).

Could (the supplier) meet these expectations?

What kind of (brand name) services your company purchases from (the supplier)?

When did your company become a (brand name) service customer?

**After you get to know about the (brand name) services, can you recall how your internal decision making process evolved?**

Can you recall the main reasons for deciding for the (brand name) service at that time?

Were there some doubts about engaging in the service contract?

Were there the possibility to purchase even more (brand name) services at that time?

If yes: Why did you decide not to purchase them?

If no: Did you miss any specific service?

Did you perform any risk analysis or cost to benefit analysis beforehand?

If yes: Tell me about the risks you identified

Were the costs just monetary?

Were you able to mitigate the risks? (alone or with the help of the supplier)

If no: Why wasn't it necessary?

Looking back, do you think it would have been worthwhile?

Do you face unexpected risks or cost since then?

**Can you tell me about (the supplier's) role during the negotiation phase and how you finally implemented the (brand name) service into your business?**

What are your first thoughts recalling the negotiation phase?

How did your preparation look like before engaging into the (brand name) service contract?

How did you experience (the supplier's) role during the pre-contract-phase?

**Tell me about the impact the contract had to your company and to the relationship with (the supplier).**

Did the relationship to (the supplier) change?

Did your organization change?

Do you see any restrictions your company would not have without the (brand name) service contract?

What are the main advantages of the service for your company from a today's point of view?  
Can you imagine any additional service (the supplier) does not offer yet?

**Would you sign this kind of contract with other companies as well?**

What would be the most important preconditions?

**What single word describes your relationship with (the supplier) best?**