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# Servitization business value: An ego-network perspective

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## **Abstract**

Servitization is increasingly being adopted by manufacturers leading to new sources of value. Current research recognises the relevance of partnerships for the capture of value, but ignores the transformation stages. Manufacturers at different transformation stages have different servitization goals, hindering the applicability of the current theoretical frameworks. The present research seeks to directly address this gap, analysing the value capture process within a manufacturer's ego-network at the initial transformation stage. Findings provide academics with a reference point regarding a specific transformation stage and help practitioners to better manage their position in the ego-network to efficiently capture the value of servitization.

**Keywords:** Servitization, Value, Ego-network

## **Introduction**

In the current interconnected marketplace, the success of a business activity does not only reside within the boundaries of a single organisation but on the joint actions developed by multiple actors. The rapid evolution of technologies, constantly reducing physical and digital boundaries, facilitates communication and resource exchange between organisations (Rymaszewska et al., 2017). The opportunities of the current digital age represent an added driving force to organisations transforming their business models. Servitization, the transformation from product- to service-based business models (Baines and Lightfoot, 2013), is increasingly being adopted by manufacturers following the evolving market conditions. New value outcomes emerge through servitization, such as higher profits or customer retention (Baines and Lightfoot, 2013), helping manufacturers to compete in such dynamic market environments.

Literature has shown how business transformations are not achieved at a single moment in time, requiring continuous and integrated actions instead (i.e. organizational change in Mintzberg and Westley (1992) or business process reengineering in Kettinger et al. (1997)). Besides, the success of servitization does not only rely on the manufacturer but on the interactive relationships of the multiple partnerships involved in the transformation (Lusch et al., 2010). Authors have increasingly recognised the relevance of partnerships for the capture of value outcomes in servitization (Karatzas et al., 2017, Story et al., 2017).

However, current servitization research does not yet recognise servitization as a transformation journey but as a static binary state (servitized vs. not servitized). But, manufacturers at different transformation stages may differ in their servitization goals, hindering the applicability of the current theoretical frameworks. There is a gap in our understanding of the manufacturer's value capture process in servitization as the role of partnerships also requires the consideration of the transformation stage. The present research seeks to directly address this gap from the point of view of a manufacturer at the initial transformation stage, where the fastest increasing growth takes place (McKeown and Philip, 2003).

The aim of the research is to understand the roles of partnerships for the manufacturer's capture of value outcomes – economic, strategic, personal and knowledge – emerging from the initial transformation stage, directly pointing to the perspective of the individual firm within its network (ego-network). In order to do so, a case study is developed, answering the following research questions:

- RQ1. How is the manufacturer's ego-network structured and composed at the initial transformation stages?
- RQ2. Which are the value outcomes emerging from the initial transformation stages?
- RQ3. How do partnerships support the manufacturer's capture of the value outcomes?

The work is structured as follows: first, servitization, value outcomes and key partnerships are discussed; second, the methodology used to conduct the case study is outlined; finally, the case findings are presented and discussed leading to theoretical and managerial contributions as well as opportunities for future research.

## **Servitization**

The term servitization, first coined by Vandermerwe and Rada (1988), can be defined as “the innovation of an organisations capabilities and processes to better create mutual value through a shift from selling product to selling product-service systems” (Baines et al., 2009). In other words, servitization describes an inherently customer oriented transformation from product- to service-based business models where the manufacturer's focus is not on providing a product but a capability experienced by customers' usage through long-term contracts or pay-per-use arrangements (Neely, 2008, Baines and Lightfoot, 2013). In order to understand such transformation, not only the manufacturer's characteristics have to be taken into account but the network in which it is embedded.

Servitization literature has increasingly portrayed an interest towards the embedded network, and in particular about the role that partnerships can have for the ability of the manufacturer to capture the value outcomes emerging from the transformation (Karatzas et al., 2017, Story et al., 2017). A business network can be defined as “an aggregated system of participating organizations in a time and spacebound technosocial system” (Möller and Halinen, 1999). In order to deepen the knowledge of value capture in the

network, the following sections provide a description of value outcomes and partnerships based on business model literature.

**Value capture**

The value capture process can be defined as the set of activities, resources and partnerships deployed in order to retain part of the value outcomes emerging from servitization (Osterwalder and Pigneur, 2010), including monetary (Lepak et al., 2007) and non-monetary value outcomes (Reypens et al., 2016). For the purpose of this research, only the role of partnerships for the manufacturer’s value capture process is considered.

Value outcomes can be classified according to four dimensions – economic, strategic, knowledge or personal (see Table 1). Economic value outcomes, such as an increased manufacturer’s efficiency, are assessed according to servitization financial costs and benefits. Strategic value outcomes, such as access to new markets, are assessed according to the competitiveness that can be achieved through servitization. Knowledge value outcomes, such as increasing market intelligence, are assessed according to the possibilities for innovation arising from servitization. Personal value outcomes, such as favouring customer retention during difficult situations, are assessed according to the legitimacy associated with the relationship with the customer in servitization. (Biggemann and Buttle, 2005, Songailiene et al., 2011).

*Table 1 – Value outcomes (from Biggemann and Buttle, 2005; Songailiene et al., 2011)*

<b>Dimension</b>	<b>Assessment</b>	<b>Value outcome</b>
Economic	Assessment of financial costs and benefits	- Supplier’s efficiency - Economic targets - Market share - Profits
Strategic	Assessment of competitiveness	- Access - Strategic position - Risk & uncertainty
Knowledge	Assessment of innovativeness	- Market intelligence - Innovation - Co-development
Personal	Assessment of legitimacy	- Customer retention - Referrals

Partnerships refer to the relationships established by the manufacturer involving the use and exchange of tangible and intangible resources in order to achieve specific value outcomes through the value capture process (Allee, 2008). Partnerships can be classified according to the motivation that drives the relationships as optimisation and economies of scale, reduction of risk and uncertainty, and acquisition of particular resources and activities (see Table 2) (Osterwalder and Pigneur, 2010). For instance, Alghisi and Saccani (2015) argued that servitization also involves the transformation of current relationships requiring a constant evaluation of the partnerships portfolio in order to optimise processes. Likewise, the work of Karatzas et al. (2017) portrayed how interaction and information sharing between all the actors involved in servitization is crucial to manage the risks associated with pay-per-use contracts. Lastly, Story et al. (2017) claimed the need of resource integration between manufacturers and intermediaries in order to improve customer’s usage experience through collaborative innovations.

Table 2 – Partnerships (own authorship)

Partnership	Motivation	Servitization example
Efficiency	Optimisation and economies of scale	Alghisi and Saccani (2015)
Risk reduction	Reduction of risk and uncertainty	Karatzas et al. (2017)
Integration	Acquisition of particular resources and activities	Story et al. (2017)

## Methodology

Given the nature of the research aim, a case study strategy has been selected to understand the roles of partnerships for the manufacturer's capture of value outcomes. A case study is used to examine a phenomenon in its real-life context in a detailed and intensive manner (Yin, 2017), where the unaltered real-world context in which the phenomena take place can be studied (Eisenhardt and Graebner, 2007). The aim is to obtain raw data where perceptions and experiences are reflected in a natural uncontrolled manner.

The unit of analysis is a manufacturing SME within its embedded network which is at the initial stage of the servitization transformation. In order to solve the challenge regarding the boundaries and type of actors included in a network (Halinen and Törnroos, 2005), the present research focuses in the ego-network, which is formed by an ego – the SME – and its direct connections – the SME's main partnerships – to other actors (Kadushin, 2004). From a network perspective, several authors have argued about the benefits of belonging to closed embedded partnerships for SMEs entering new markets (Coviello and Munro, 1997, Johanson and Vahlne, 1990). Being the servitization transformation comparable to a new market entry, the selection of SME as focal firm is based on the higher dependence on external resources and partnerships due to a lower internal capacity in comparison to big corporations. Specifically, the case selection is based on the following criteria: a) to meet the European Commission definition of SME; b) to belong to the manufacturing industry; c) to be at the initial stage of servitization according to SME's degree of servitization experience and knowledge.

The data collection is done through semi-structured interviews, which are recognised to give access to individuals' underlying assumptions allowing meaning making of people's complex issues based on their experiences (Seidman, 2013). One interview divided into two sections was carried with the managing director and founder of the SME. The first section was aimed to map out the SME's ego-network, indentifying direct connections and its characteristics. The second section, on the other hand, was focused on the value capture process of the SME in the ego-network, highlighting its current and future goals as well as the resources and activities needed to accomplish them. The data analysis was developed following Miles and Huberman (1994) three main steps. First of all, information was coded and classified according to each research question. Secondly, coded information was analysed and represented through tables and social maps. The social map comprises a graphic representation of the ego-network composition and structure based on interactions, where structure refers to the position and composition to the nature, of those partnerships (see Table 3) (Tichy et al., 1979). Lastly, information was compared and contrasted with existing literature in order to determine its contribution.

Table 3 – Ego-network structure and composition (own authorship)

	Characteristic	Description
<b>Structure</b>	<i>Bridge</i>	Actor that has the competitive advantage of accessing more valuable information for being between two other actors (Lin, 1999; Granovetter, 1973)
	<i>Cluster</i>	Areas of the ego-network where actors are more closely linked to each other (Tichy et al., 1979)
	<i>Centralisation</i>	How tightly the ego-network is organized around its most central point (Scott, 1987)
	<i>Structural hole</i>	Lack of connection among a pair of actors in an ego-network (Burt, 2000)
<b>Composition</b>	<i>Intensity</i>	Frequency of interactions between actors (Tichy et al., 1979)
	<i>Strength of connections</i>	Depending on the amount of time, emotional intensity, intimacy, and reciprocal services that characterise partnerships (Granovetter, 1973)
	<i>Tipping point</i>	All actors join in a phenomenon after a certain level is reached (Kadushin, 2004)
	<i>Brokerage</i>	Actor's opportunity to participate in, and control of, information diffusion for connecting two actors otherwise unconnected (Burt, 1984)

## Findings

This section presents a description of the SME's business activity and current transformation stage. Furthermore, a display of findings is provided according to each research question.

The SME is a light manufacturer with three distinctive offerings operating in the following industries: curing offering in the automotive industry; fluorescent inspection offering in the aerospace and automotive industries; and disinfection offering in the health industry. Regarding servitization, the SME is entering the food industry where the aim is to provide the capability of disinfecting food lines through a usage based model. The SME is currently at the stage of building and testing a pilot solution.

Regarding value outcomes, in the short term, the success of the pilot will allow the SME to "convince" a customer big enough to provide referrals while reducing the risk and uncertainty of customers regarding the effectiveness of the solution. In the long term, servitization can help the SME to make the business more valuable by exponentially increasing its turnover. Besides, experience will provide the SME with increasing customer and market knowledge to be materialised in competitive advantages through innovation.

Regarding partnerships, the SME's ego-network current structure is highly centralised, where structural holes divide suppliers and customers – and in a lesser degree distributors as the SME supplies directly to end users – whose only connection is the SME. Stronger partnership is observed between the SME and the supplier of specialised components – meters, bulbs, LEDs –, which are harder to substitute and have a direct influence over the quality of the solution. Customers, on the other hand, are characterised by being non-recurrent and of low economic value.

*"It's like a big web if you like, of suppliers on the one side and customers on the other, and then we are right in the middle and we put everything together and sell it directly to the customers"*

Managing Director

However, with the introduction of servitization and development of the pilot, the SME's ego-network is expected to change. Support from the ego-network to capture the value outcomes from servitization will come from the outsourcing of basic electrical assembly work in order for the SME to focus on the higher value activities leading the pilot. Similarly, the managing director recognised the potential of developing a partnership that manages and processes the data collected throughout the pilot.

*“how we deal with the data. [...] how to analyse it, what we do with it. [...] it may be that we need a strategic alliance partner to collect the data and some form of platform”* Managing Director

In the long term, partnership support becomes even more essential for the SME's growth in the food industry. The SME's newness to the food industry opens the door to partnership opportunities with both food industry and consumer associations. Being able to influence one big customer is seen by the managing director as a tipping point for quick expansion in the food industry and partnering with such associations represents the door to facilitate the access and influence towards the end customers (supermarkets), as well as, to obtain feedback on current industry trends and future changes.

*“[...] we are so new in the food industry, it's kind of been related diversification I guess. And that is quite a difficult thing to do [...] Associations we were talking about earlier [...] we could start influencing the supermarkets, start telling their suppliers look I want your orange juice [solution name] disinfected”* Managing Director

Finally, the SME's competitive advantage through servitization is seen by the managing director as the turning point for distributors/OEMs to adhere to servitization, leading to a shared added value to the solution.

*“We could offer this as a service through, I mean this could be a network in the future, [...] they could sell the equipment and we could sell the service contract.”* Managing Director

## **Discussion**

Regarding the SME's ego-network structure and composition (RQ1), it is possible to observe how at the initial stages of transformation, the ego-network will still be highly centralised around the SME and structural holes will remain between suppliers and customers. However, on the customer side, clusters will be formed through associations and OEMs/distributors connecting the SME with the end customer (supermarkets) in the food industry. Such partnerships are expected to intensify throughout the completion of the pilot in the food industry. Besides, contrasting with literature (Alghisi and Saccani, 2015), the SME will not modify the relationships established with current suppliers; instead will develop new strong partnerships, such as the data management organisation. Figure 1 provides the social map of the SME's ego-network at the initial stage of transformation.

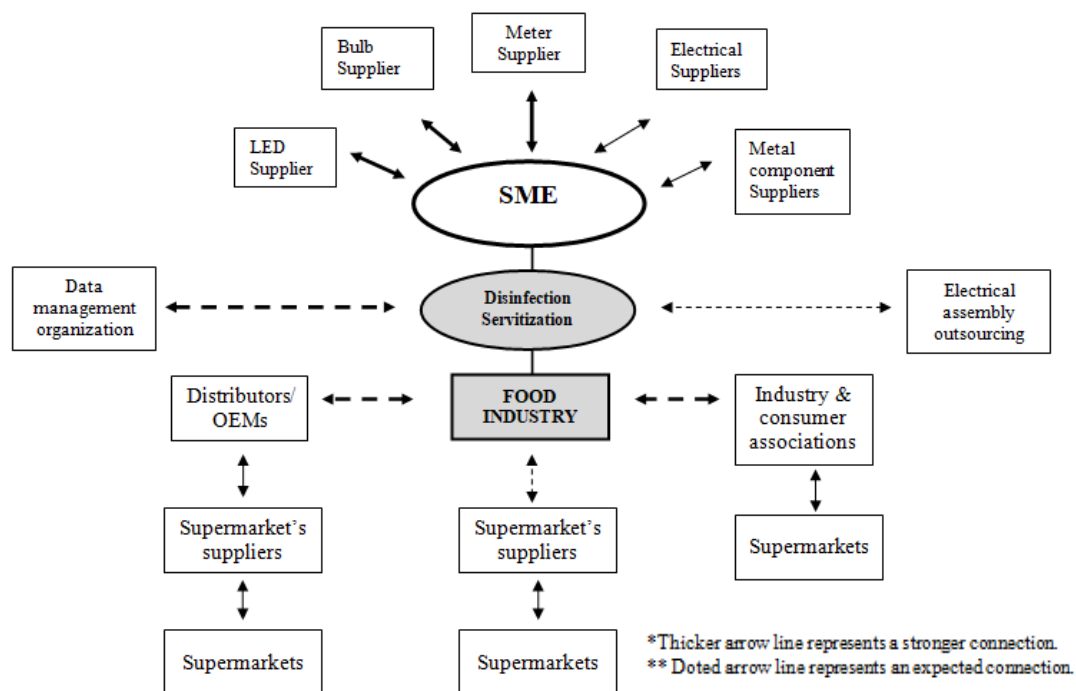


Figure 1 – SME's ego-network social map (own authorship)

Moving on to the value outcomes emerging from servitization (RQ2), the initial stages of transformation are characterised by immediate personal and strategic value outcomes arising from the success of the pilot solution in the market. Being able to demonstrate the actual value – figures from the pilot – of the solution reduces customers' uncertainty and opens the door to access customers and build commitment. Moving forward, economic and knowledge value outcomes dominate the transformation. Once achieving a certain number of customers, increasing growth and experience in servitization will lead to higher profits and innovation value outcomes.

Table 4 – Value capture outcomes and support (own authorship)

Value capture process		
	Value outcomes	Partnership support
<b>Short term</b>	- Personal: referrals, commitment - Strategic: reduction of uncertainty, access	- Efficiency: outsourcing - Integration: data management
<b>Long term</b>	- Economic: higher profits - Knowledge: innovation	- Risk reduction: associations - Integration: OEMs/distributors

Partnerships' support in the manufacturer's capture of value outcomes at the initial stages of transformation (RQ3) agrees with current literature. Lusch et al. (2010) claim that servitization encourages the outsourcing of those activities that are not a core competence for the manufacturer. The lack of internal capacity and specific capabilities at the initial stages of transformation is supported through the outsourcing of low value activities and integration of high value competences. Likewise, Payne et al. (2008) argue that servitization requires information and communication exchange in order to be able to offer the right solution. The newness risk experienced at the initial stage of the transformation is supported through the exchange of knowledge among partnership associations. Finally, Story et al. (2017) portrayed how collaboration with



intermediaries can lead to innovation. The development of more intensive partnerships with OEMs/distributors appears as a strong support for the development of innovations at the early stages of transformation through the integration of specific customer knowledge.

To conclude, findings show how partnerships acquire a more relevant role with the acquisition of experience in the market, where innovation becomes the focus of attention and knowledge sharing requires stronger and more intensive interactions. Besides, servitization does not necessarily imply a change in the current ego-network partnerships (i.e. current suppliers remain the same) as portrayed in the literature. However, a crucial point at the initial transformation stage refers to the pilot solution, which represents the moment when potential partnerships are identified as well as the door to achieve a tipping point through the reduction of uncertainty among potential customers.

## **Conclusion**

This research contributes to the servitization literature and provides academics with a reference point regarding a specific fast growth stage of the transformation journey in a multi-actor context. At the same time, the extension of research boundaries from the organisation to the ego-network allows for an integrated view on value capture in servitization whose application varies from a micro- to a macro-level of analysis.

From a managerial point of view, findings also represent a novel and relevant contribution for organisations. Understanding the implications of partnerships associated with the initial transformation stage will allow managers to better manage their own position in the ego-network to accomplish their short and long term goals and efficiently capture the emerging value outcomes. The study also contributes to management practice by establishing a precedent regarding a type of organisation – the SME – with a hidden view in the current overcrowded literature of multinational organisations' lenses.

This research is not exempt of limitations. Even though the selection of SME is representative of the initial stage of the servitization transformation, findings are limited to the perspective of an individual organisation which may overlook the effects of factors such as the type of industry or country-based culture. Likewise, the evaluation and understanding of value outcomes and partnership support may be bias by personal interpretation; however, the analysis has been made in constant comparison between answers and the theoretical background and specific quotations have been provided as a source of credibility. Future research may be done in this area including SMEs from several industries/countries. Likewise, a mirroring research based on SMEs with vast experience in servitization could be done in order to understand the other side of the transformation continuum.

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