

Contextualising servitization – the shaping of the organisational transformation

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Abstract

This study has set out to build the evidence base underpinning the context of the SME servitization transformation. It explores how the organisational environment forces manufacturing SMEs to move towards service provision through depicting their perception of the business environment. The study contributes to the understanding of servitization by populating the selected conceptual model with insights drawn from collective experiences of 25 senior executives from 17 servitizing SMEs. The findings summarise how internal and external organisational environment factors shape servitization transformation and how they differ when considering the stages of transformation.

Keywords: Servitization, Organisational Environment, Transformation

Introduction

Traditional manufacturers increasingly shift their priorities from a product-orientation towards a service-orientation, a strategic transformation termed ‘servitization’ (Raddats et al., 2016). Servitization provides manufacturers with opportunities to extend their customer-relationships from transactional sales to long-term outcome-based contracts, which also broadens their revenue streams. Such contracts, however, not only call for the development of new service-offerings, but also require far-reaching organisational transformations to be able to deliver these services.

The success of a servitization transformation depends on the manufacturer’s ability to leverage its internal capabilities and resources to drive the transformation, as well as the manufacturer’s ability to direct the transformation within the constraints of its external environment (Parida et al., 2014). The interplay between the manufacturer’s internal and external organisational environment makes the transformation complex, resource-consuming and risky and requires a careful orchestration of activities (Adrodegari and

Saccani, 2017, Turunen and Finne, 2014). In particular, correctly interpreting the determinants, or factors, of the organisational environment and effectively translating these into organisational requirements is critical for orchestrating successful transformations (Tushman and Anderson, 1986). While servitization research has started to recognise the importance that individual factors of the internal (circumstances within the organisation) and external (circumstances outside of the organisation) organisational environment play in servitization, authors have called for a systematic investigation of the implications these factors create to clarify how their interaction affects the manufacturer's transformation effort (Baines and Shi, 2015).

The servitization literature, so far, has focused extensively on the difficulties (i.e. risks, barriers, limitations) manufacturers face when seeking to servitize and possible drivers (see e.g., Oliva and Kallenberg (2003), Dimache et al. (2013) Rabetino et al. (2016), or Coreynen et al. (2017)). More recently, individual authors have started to focus specifically on the longitudinal organisational transformation effort manufacturers engage in on their journey towards becoming service providers (Kindström and Kowalkowski, 2014, Baines et al., 2017). Authors have also started to propose models that structure and explain this longitudinal process by focusing on the transformation stages that characterise the manufacturers servitization efforts (Kowalkowski and Ulaga (2017), Martinez et al. (2017), Bigdeli and Baines (2017)).

The shift from conceptualising servitization as a discrete strategic decision to conceptualising servitization as a longitudinal multi-stage transformation challenges the extensive prior research on servitization barriers and enablers (Bigdeli and Baines, 2017, Martinez et al., 2017, Kindström, 2010, Gebauer et al., 2006). The conceptualisation of servitization as a longitudinal multi-stage transformation and the recognition of the range of internal and external factors of the organisational environment as important determinants of the multi-stage transformation unveils a significant research gap which this study seeks to explore. To guide this examination, the present study focuses on addressing the following research questions: *(1) how do internal and external organisational environment factors shape servitization transformation, and (2) how do these factors differ when considering the stages of transformation?*

Literature review and conceptualisation

Servitization transformation

Servitization is widely portrayed as an organisational transformation in the form of planned, or intentional transformation (Martinez et al., 2017, Kowalkowski and Ulaga, 2017, Brax and Visintin, 2015, Weick and Quinn, 1999). The transformation generally implies changes in the organisation's structure, competencies and culture (Baines et al., 2008; Oliva and Kallenberg, 2003) which are facilitated by different supporting measures, new partnerships and operation models (Pawar et al., 2009).

From a theoretical perspective servitization, based on its nature and objectives, can be categorised as an organisational 'metamorphosis' (Meyer et al., 1990). Metamorphic transformations categorise changes that are confined within the boundaries of a single organisation, which transitions, in a frame-breaking manner, from one life-cycle stage to another (Meyer et al., 1990). Such frame-breaking transformation takes place when organisational configurations that are held together by inertial forces are reconfigured to create a better fit between the organisation and its environment (Meyer et al., 1995, Meyer et al., 1990). Such a metamorphic perspective is adopted by a number of servitization studies which (explicitly or implicitly) use life-cycle stages to structure the longitudinal nature of the transformation (e.g. Kowalkowski and Ulaga (2017) Martinez et al. (2017), Bigdeli and Baines (2017)). For example, Kowalkowski and Ulaga (2017) have

developed a roadmap for service growth highlighting 12 stages across four areas of strategic considerations (foundations, strategy, implementation and structure). Martinez et al. (2017) identify 36 steps in a manufacturer's service adoption, which authors have clustered into 12 stages. Lütjen et al. (2017) developed a three-stage model of service initiation, service anchoring and service extension to map out the manufacturer's service transition.

Bigdeli and Baines (2017) 'organisational transformation towards servitization' model explicitly structures the servitization transformation along the four stages of: exploration, engagement, expansion and exploitation. The **exploration** stage describes the manufacturer's initial learning about the servitization concept and its implications. The subsequent **engagement** stage captures the manufacturer's systematic evaluation and communication of the business potential of servitization to create readiness throughout the organisation. The **expansion** stage describes the development of specific product-service offerings and changes in the organisational structures until significant value from servitization is demonstrated. Finally, in the **exploitation** stage the manufacturer continuously targets the optimisation and delivery of its servitization portfolio to ensure that service offerings provide a viable basis for competitive advantage.

The role of the organisational environment in transformation

Organisational transformations take place at the intersection between context, process and content of change (Pettigrew, 2012, Pettigrew, 1988, Whipp et al., 1989, Pye and Pettigrew, 2005). Pettigrew (1985) describes the context as the circumstances of change and differentiates between the internal and external environment of an organisation. External environment is concerned with the political, economic, social and sector environments in which the organisation is positioned. Internal environment captures the structural, political and cultural environments through which change actions and ideas proceed within the organisation (Pettigrew, 1985, Pfeifer and Salancik, 1978, Hannan and Freeman, 1977, Meyer and Rowan, 1977). While organisational transformations are affected by the internal and external organisational environment, the two are not necessarily independent from each other in their resultant impact. Hence, organisations can be influenced by the external environmental factors, but the internal factors, such as rules and programs that govern the organisational development, may mediate this impact (Van de Ven and Poole, 1995). Furthermore, an organisation's internal development may also be dependent on its external environment for scarce resources and, oftentimes, must cope with unpredictable external events (Daft et al., 1988).

Although the servitization literature has explored the notion of the internal and external factors impacting the transformation, considerations of the implications of these environmental factors are limited. Finne et al. (2013) found that conditions of the external environment are critical in shaping the development paths of servitizing manufacturers and argued that environmental factors might force manufacturers to go back to product focused strategies. Gebauer (2008) explored the role of the manufacturer's external environment for identifying favourable service strategies. Turunen and Finne (2014) examined how manufacturer's servitization success might be affected by the competing actions of other population members, as well as available resources, relevant institutions, employed technologies, and political conditions. Although these studies consider factors of the internal and external organisational environment with their impact on the manufacturer's servitization effort, they fall short of exploring the wider range and interaction of internal and external factors and their impact on the longitudinal servitization transformation.

The multi-dimensional organisational environment perspective on servitization

The present study draws on Bigdeli and Baines (2017) four-stage servitization transformation model as it provides a well-developed structure to investigate the impact of the internal and external organisational environment on the transformation (RQ1). With the transformation stages representing specific management considerations and efforts, we propose that the internal and external organisational environment factors create a distinct impact in each of these stages (RQ2). To integrate the most salient factors and their suggested transformation impact into the present theorisation we follow the suggestion of Bigdeli and Baines (2017) to focus on the manufacturer's technology, market, ecosystem, and organisational capability and maturity dimensions that comprise the internal and external organisational environment. Figure 1 summarises the conceptual background of the research.

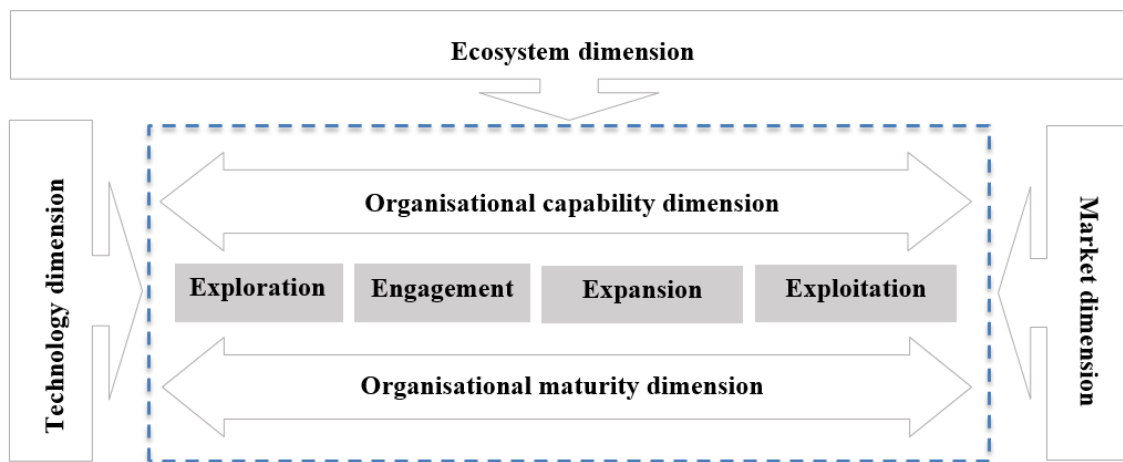


Figure 1 Conceptual model: organisational environment in servitization transformation

Research method

The study focuses on small to medium sized manufacturing organisations (SMEs) to obtain insights on the servitization transformation. As transformations can sometimes stretch over several years acquiring necessary data on such a long-term process is not always feasible. SMEs, however, are more embedded in their environments (Kowalkowski et al., 2013, Gebauer et al., 2010), their servitization transformation time-span is more compressed and the number of decision-makers evaluating the organisational environment is smaller.

The exploratory nature of this study called for a data collection method that allows for new ideas to emerge and evolve and for informants to reflect on them. The Delphi technique allows to address this by incorporating both structure and flexibility for the data collection designed to depict and consolidate a real-world expertise on a complex matter, and for reflecting on both past experiences and future events (Donohoe and Needham, 2009, Hsu and Sandford, 2007, Rowe and Wright, 1999). The three major components of the conventional Delphi are: (1) creating a panel of anonymous experts on an issue of concern, (2) conducting a series of rounds by using questionnaires to get expert opinions on that issue and (3) sharing feedback of respondents with the participants (Woudenberg, 1991, Bardecki, 1984). To tailor the study to the nature of SME's and the servitization context we adjusted the Delphi process as described below.

The formation of the expert panel was guided by the level of expertise of the panellists (Baker et al., 2006), level of a manufacturer's servitization maturity and considerations

of the number of panellists. To ensure the expertise required we followed the established panellist qualification criteria (Baines and Shi, 2015), seeking to involve experts who (1) are associated with the servitizing organisation, (2) had themselves been involved in facilitating the servitization transformation, (3) had knowledge of organisational structures and functions. Additionally, we sought to include manufacturers with a range of servitization maturity stages (i.e. from exploration to exploitation) to ensure that there are senior panel experts who can make accurate claims about both past experiences and future scenarios. To ensure the appropriate number of panellists we considered the literature guidance which suggests a range from seven or more members (Dalkey and Helmer, 1963), to 10 to 50 (Turoff, 1970), or up to 80 members (Rowe and Wright, 1999). Taking practical constraints into consideration, the research could draw on an expert panel made up of 25 representatives (across different functional areas) from 17 SMEs that pursue servitization as their competitive strategy.

Based on the insights gained from the literature review, the focal questions were formulated to establish the most influential factors comprising each environmental dimension. These questions were compiled into an inquiry form and piloted with the expert panel member in an exploratory workshop and subsequently refined (Rowe and Wright, 2011). The panel member was made aware of the conceptual model that identifies the servitization transformation as a four-stage process and was asked to attribute the progress of the company's transformation to a specific stage, while naming the environmental factors that affected it and explaining the nature of the impact. The resultant refined enquiry form was used in three rounds of the modified Delphi.

The inquiry form was distributed to all panellists in the first round of the modified Delphi. Each expert panel member was asked to identify main environmental factors as they became apparent in their servitization transformation journeys. Moving through the four stages, starting with the exploration and leading up to the exploitation, experts were naming key factors supporting their statements with a reflection as to what has made them significant. The answers of each panel member were captured by the research team, transcribed and anonymised for performing the controlled feedback.

The communication in the iterative process of Delphi is controlled by the researchers (Meijering et al., 2013). The controlled feedback takes place between the iterations when the researchers present a form of qualitative feedback in the organised manner, allowing the panel members to provide further input (Rowe et al., 1991). Responses to the first round were coded in accordance with the suggested conceptual framework and clustered around the four stages of servitization transformation. Once the allocation has been confirmed, consolidated and coded responses were combined and presented to the panel members to gather additional feedback.

In the subsequent round, the panel members received an overview of the previous round of the modified Delphi, together with the list of factors allocated under the servitization transformation stages and a request to elaborate more on the factors they deemed more significant to their transformation. The abovementioned discussion and prioritisation session resulted in the most critical environmental factors being re-assessed, after which the results were synthesised for the third and final round of the iteration. Third round followed the outline of the second round of the modified Delphi. After each round, an anonymised summary of the experts' feedback was being gathered and presented back to the expert panel seeking additional commentary.

We used this modified Delphi design to validate the conceptualised construct as we asked the panel members to confirm their initial responses making sure that the researchers understand the meaning of the listed factors and the nature of their implications. A total of 88 factors were generated in the rounds of data collection and

feedback. Subsequently, to ensure validity, two researchers have consolidated the responses and removed duplicates, which has led to a total of 70 factors used in the analysis.

Findings

Organisational environment factors affecting servitization transformation

The expert panel members identified ‘technology immaturity’ as the only technology dimension factor considered to impact (i.e. inhibit) the servitization transformation. Arguably, it could be that as the technology opens new opportunities, the challenges of the actual realisation of these opportunities are not of technological nature, making this environmental dimension insignificant for the SMEs.

The expert panel provided numerous contributions to the market dimension (9), but they were largely focused on the narrow aspect of ‘customer requirements and tastes’. Customer’s increasing acceptance of the new kind of offering and the success with initial pilots enable the transformation process. However, comments also show how the ‘lack of market interest’ has an immediate inhibiting impact on the transformation, and that ‘favouring regulation’ can have a positive push for the transformation.

Several contributions from the panel refer to the ecosystem dimension (8), which captures the value network structure of the servitizing manufacturer. The majority of contributions hereby relate to aspects of the internal collaboration platform which describes the close ties manufacturers create with their partners and customers. Servitization implies a close partnership between customer and manufacturer which not only makes the customer highly dependent on the manufacturer but the manufacturer is also very exposed to the customer (Oliva et al., 2012). A number of testimonies from the panel related to the fact that the transformation has slowed down, or even stopped, as the ‘customer with whom the product-service offering was being piloted did not see the value’ in the continued engagement. Hence, ‘changes in the customer’s internal organisation’, or the ‘backing out of customers’, affects the manufacturer who has prepared for a long-term engagement. On the contrary, the ‘strong relationships with the customer’ has been confirmed as a robust enabler for the servitization effort.

The organisational capability dimension represents one of the two internal environment dimensions and captures the competencies that facilitate the servitization. It has attracted the second highest number of contributions (25). The ability to ‘identify a sound value proposition’, for example, is an essential factor for developing the servitized offering. Understanding the ‘specific needs of the customers’ and being able to translate this knowledge into the proposition and ‘deliver on what has been offered’, were named among key capabilities that facilitate the SME servitization. The value identification process is often held in a form of a pilot with the strategically selected customer. Accordingly, a ‘failure to identify the value’ prevents the manufacturer from moving forward. The ‘lack of resource and knowledge base’ for transforming their organisations was often mentioned. Principal in the recourse management for servitization is the resolution of the conflict between supporting the current business operations and addressing the challenge of ‘innovating the current business model’, so servitization might be overlooked by the day-to-day business demands.

The organisational maturity represents the second internal environment dimension and captures the manufacturer’s focus and overall level of development. This dimension has received the highest number of contributions (27). The leadership aspect has obtained a high level of interest with comments highlighting how the macro-vision of the initiative strongly ‘supported and led by the CEO’ is essential because of the efforts required for coordinating and integrating the processes in the transformation. The expert panel

highlighted the role of ‘championing’ the servitization initiative within the organisation as the one facilitating ‘increased agreement and organisational buy-in’, but also as the one inhibiting the efforts, should the ‘change of direction take place initiated by the top management’. The power and politics exercised by the internal stakeholders, in cases, were said to lead to ‘internal scepticism undermining the readiness of the organisation to follow through with servitization’, and to confusion in the ‘role or resource allocation’. The findings stress the importance of a ‘supportive company culture and enthusiasm’, with the ‘shared understanding of the transformation as a way to increase sales’, which facilitate moving through the stages of servitization.

Organisational environment factors in different servitization transformation stages

The mapping of the factors identified by the expert panel to the corresponding transformation stages resulted in the vast majority of the contributions targeting the **exploration** stage to focus on the organisational maturity and capability dimensions. Other environmental dimensions have attracted only minor contributions. Learning about servitization and seeking to understand if it is a viable strategy seems to be largely an inward-looking activity with concerns focusing on the internal competencies and resources available and the processes and overall business sophistication in place. The factors (e.g. ‘senior management buy-in’, ‘team push’) also point to the need for leadership as a critical factor to obtain the confidence that a shift to a service-oriented business model is feasible.

Factors targeting the **engagement** stage spread across all the identified environmental dimensions. The emphasis is both on the internal capability and maturity dimensions - building the ‘trust’, as well as on the external dimension where the outlook is on the customer (pilot target) and the close-located ecosystem, the structure of which becomes more relevant as the manufacturer seeks to test the value proposition on the market. The ability to report on customers commitment, at this stage, is very important for achieving the organisational buy-in, while ‘customer backing out’ is detrimental. The factors also show that this stage can become very political with the importance of leadership being highlighted. To create the required readiness the development of ‘internal communication’ is important, but so is the political backing of powerful individuals.

Mapping the contributions at the **expansion** stage indicated that in both internal and external environmental dimensions the factors contain a degree of reflection on the work undertaken so far. This stage is critical for creating the base for the specific service proposition and its economic viability. Specific factors, such as ‘restructuring’ or ‘rethinking the strategy’ based on the insufficient progress, or on the contrary, regained confidence in servitizing as a result of ‘broader market acceptance’ define this stage. The ecosystem dimension obtains more attention at this stage. The implementation of product-service offering is only successful when both suppliers and customers deploy them (Tuli et al., 2007), making the intra-, as well as inter-firm linkages, particularly important for servitization. As the servitization progresses to the next stage from achieving a sufficient ‘momentum with the internal engagement’, the broader structures of the ecosystem, such as partnerships and collaborations, become more important to the manufacturer.

The factors identified by the expert panel at the **exploitation** stage show that organisational capability and maturity become essential to the delivery of the product-service offering and minor misalignments might undermine the entire work performed to get to this stage. The expert insights revealed the concerns over the ‘competencies to deliver the offering’, such as ‘suitability of organisational arrangements, communication channels and planning, management practices’. The wider outlook on the ecosystem also characterises this stage. This could, arguably, be attributed to the fact that as the

organisations proceed with fully integrating the product-service offering into their portfolios, seeking to ‘exploit’ them, the ecosystem emphasis moves from the closely cooperating organisations participating in the piloting, to the wider market. As the new stakeholders are being sought for expanding the customer base the potential ‘threat from the competitors’ might become more apparent.

Conclusion

This study has set out to build the evidence base underpinning the context of the SME servitization transformation. Our interest was to unveil how the external and internal organisational environment forces SMEs to move towards service provision, or, on the contrary, prevents them from doing so, through exploring how SMEs perceive their business environments. The findings provide an insight into the multitude of factors populating the internal and external environmental dimensions that SMEs deem defining to their transformations, with only the technology dimension resulting with an insignificant amount of contributions. Arguably, the fact that there are more contributions to the suggested internal dimension categories of the organisational capability and maturity could mean that the servitizing SMEs are simply more aware of these environmental factors. However, when we consider how these findings are distributed across the four stages of servitization maturity, we see that they also largely point to the significance of internal environmental dimensions highlighting aspects of manufacturer’s organisational capability and maturity all throughout the transformation process.

The findings, however, need to be considered in the light of the limitations of the study. The initial model developed by Bigdeli and Baines (2017) from which this research draws the categorisation of servitization stages and environmental dimensions was based on the information received from the large manufacturing organisations, whereas this research focuses on the SMEs. The present study, nevertheless, benefited from having a theoretically conceptualised approach. The data collection method and the selection of the expert panel members might have also affected the results as the manufacturers involved were at different stages in their respective servitization transformation journeys.

This study sought to provide additional theoretical grounding for exploring servitization. We integrate an established metamorphosis perspective (Meyer et al., 1990) to link the servitization research to the organisational change theory. To advance our understanding of the role of the organisational environment in servitization further enquiry could explore the extent of strategic choice servitizing organisations exercise in response to environmental pressures (Aldrich and Pfeffer, 1976, Child, 1972, Hannan and Freeman, 1977, Goodstein, 1994); possibly focusing on external pressures in the form of economic, social, or industrial controls (Romanelli and Tushman, 1986) and how they restrain organisational behaviour (Goodstein, 1994), or highlighting how servitizing organisations adapt to, respond or modify their environments (Hitt and Tyler, 1991, Child, 1972). With regards to the managerial practice contribution, this study does not claim that the organisational environment affecting the servitization transformation of the SMEs is limited to the environmental factors highlighted in the analysis, but rather suggests that managers could learn about the findings and consider them when navigating the organisational environment in their respective servitization transformations.

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