

ORGANISATIONAL TRANSFORMATION TOWARDS SERVITIZATION

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ABSTRACT

Purpose: The aim of this paper is to develop a model, which illuminates the transformation journey towards servitization in the manufacturing context.

Design/Methodology/Approach: This is a theoretical paper based on extensive review of literature on organisation change and transformation, and servitization. This was followed by a series of structured engagement workshops with senior executives of 10 multinational manufacturers in order to synthesise the propositions and further inform the development of the framework.

Findings: Our analysis demonstrates that the organisational transformation can be explained as four stages of development, which the manufacturers proceed through according to the impacts of five forces.

Originality/Value: Previous studies on servitization succeed at identifying different stages towards servitization. However, the stages are loosely defined and struggled to demonstrate the relevant transformation pathways. This paper has, therefore, addressed this issue.

KEYWORDS: Servitization, advanced services, transformation, organisational change.

1. INTRODUCTION

Understanding how the transformation should take place for manufacturers to compete through provision of services is a significant challenge facing both researchers and practitioners (Baines et al. 2017). There are a few notable contributions to this topic (see (Baines and Shi 2015, Bustinza et al. 2015, Lightfoot et al. 2013)), and research is generally fragmented and discursive. The aim of this paper is, therefore, to illuminate the evolution of manufacturing towards servitization. An examination of the servitization process is, however, fundamentally dependent on the form of services being developed and offered. As Baines and Lightfoot (2013) discovered, there are three types of services a manufacturer could offer towards its customer: (1) *base services* in which the outcome focuses on the product provision (e.g. product/equipment provision, spare part provision, warranty, etc.), (2) *intermediate services* in which the outcome focuses on the product condition (e.g. scheduled maintenance, technical help-desk, repair, overhaul, delivery to site, etc.), and (3) *advanced services* in which the outcome focuses on capability delivered through performance of the product (e.g. customer support agreement, risk and reward sharing contract, revenue-through-use contact, etc.).

Advanced services form a special case in servitization. They are appealing because they deliver a capability as an outcome. This alone can be attractive for the customers as, for example, it removes not only the need for product ownership, but also the concerns for maintaining and repairing it. In literature, these have been examined by researchers in various forms, such as outcome based contracts (Kowalkowski et al. 2009), performance based contracts (Kindström and Kowalkowski 2014), and capability contracts (Gebauer et al. 2011). These services demand significant changes to the relationship between the customer, provider and network partners and adoption of new technologies and organisation designs in each business (Baines and Lightfoot 2013).

Previous studies are instrumental in suggesting the types of barriers, actions and capabilities relevant to the transformation journey (see for instance Baines and Shi (2015), Raddats et al. (2015), and Story et al. (2016)).

Yet, in spite of the significance of servitization and advanced services, the key questions remains as; *What organisational transformation stages are expected in the journey towards servitization? What are the key forces that impact the transformation?, and How do these stages and forces interact as a model that represents the pathways towards servitization?* In this paper, we have attempted to answer these questions by developing a framework, which ultimately illuminates the transformation journey towards servitization. The method is based on: (1) extensive review of servitization and change management literature as well as established theoretical frameworks that focus on the breath and dynamics of organisational change, and (2) a series of structured engagement workshops with senior executives of 10 multinational manufacturers in order to synthesis a comprehensive and yet relevant framework.

2. THEORETICAL BACKGROUND: EXPLORING THE DYNAMICS OF ORGANISATIONAL CHANGE

Dynamics of organisational change is concerned with the change process, which encompasses the phases through which successful organisational changes progress (Self et al. 2007). In the last decade, several prominent studies tried to explain the consequences of an organisational change effort. These studies have their roots in the primary model that was proposed by Lewin (1947) that compromised unfreezing, moving, and freezing phases. Building on this, Judson (1991), Kotter (1995), Galpin (1996), Armenakis and Bedeian (1999), Armenakis et al. (2000) have proposed multi-staged frameworks to be followed in implementing changes. Judson (1991), for instance, proposed a five-stage change model consisting of (i) analysing and planning the change, (ii) communicating the change within the organisation, (iii) explore the new behaviour towards the change, (iv) change from the status quo to a desired state, and (v) establish the new situation by institutionalising the new state. Each stage concerns with possible internal reactions to the change effort, and the recommendation and techniques (e.g. reward programmes, persuasion, etc.) to minimise resistance. Galpin (1996), also building on Lewin's change model, proposed a model consists of nine blocks: (i) establishing the need to change, (ii) developing and disseminating a vision, (iii) understanding and analysing the current state of the organisation, (iv) generating recommendations, (v) detailing the recommendations, (vi) testing the recommendations, (vii) preparing the recommendations for rollout; (viii) rolling out the recommendations, and (ix) measuring, reinforcing, and refining the change. The model highlights the importance of understanding the organisational culture as reflected in the policies, rules, and norms.

In a similar strain, Van de Ven and Poole (1995) proposed four process models of organisational change: teleology model (planned change), life cycle model (regulated change), dialectics model (conflictive change), and evolution model (competitive change). These four models represent different sequences of change events and differ in terms of the level of analysis i.e. single or multiple organisational entities and whether the change process follows a prescribed sequence or is emerged (Van de Ven and Sun 2011).

The various models reviewed all incorporate some form of on-going process. Among these models, however, the most comprehensive and best-known change process is the Kotter and Cohen (2002) change model. Their model consists of eight steps to follow in implementing fundamental changes: (i) establishing a sense of urgency by relating external environmental realities to real and potential crises and opportunities facing an organisation, (ii) forming a powerful coalition of individuals who embrace the need for change and who can rally others to support the effort, (iii) creating a vision and strategy to accomplish the goals and objectives (iv) communicating the vision through numerous communication channels, (v) empowering others to act on the vision by changing structures, systems, policies, and procedures in ways that will facilitate implementation; (vi) creating short-term wins by publicising success, thereby building momentum for continued change, (vii) consolidating improvements and changing other structures, systems, procedures, and policies that aren't consistent with the vision; and (viii) anchoring the new approaches by publicising the connection between the change effort and organisational success. For the purpose of this paper, we have applied this model as the reference point to form our ideas about the key

stages in the organisational transformation and the principle forces that affect progression through these stages.

3. RESEARCH METHOD

Critical to the success of this study was the identification and engagement of manufacturers that were in their transformation journey towards servitization. Search, selection, and engagement processes reflected these factors. A short-list of companies was formed and prioritised, and then companies were approached in that order. This relied on informal networks for introductions to key personnel. We have had to engage with those companies, which were willing to (1) participate at a senior level, (2) take part in several round of interviews, meetings, etc., and (3) grant access to their manufacturing and development facilities for the researchers to observe the day-to-day operations. In all, 10 manufacturers were identified and preliminarily engaged by August 2015; they were visited, and negotiations concerning access and confidentiality were undertaken. We then organised and run a 2-day workshop every 3 months (a total of 8 workshops till April 2017) among the senior executives of the identified manufacturers. The preliminary stages of organisational change based on the Kotter and Cohen's model presented at the first workshop, and thereafter, a series of hands-on workshops were carried out to identify the stages, key activities within each stage, and forces in practice. The workshops focused on both engagement and exploration in order to ascertain (1) whether the proposed stages resonate with the actual service operations undertaken within the manufacturers represented, (2) what activities and processes are carried out in each stage, and (3) what were considered to be the forces (inhibitors and enabler) in each stage. In reporting the findings we must emphasise that our goal has been to gain a foundational understanding of the transformation rather than critique individual organisations.

4. ANALYSIS AND FORMATION OF THE TRANSFORMATION MODEL

The aim of this paper was to answer three question: *what organisational transformation stages are expected in the journey towards servitization? what are the key forces that impact the transformation?, and how do these stages and forces interact as a model that represents the pathways towards servitization?* This section uses both analysis of the relevant literature and the evidence from the engagement workshops with the companies to address each question in turn and so develop a model for transformation towards servitization.

4.1 Stages in the transformation process

It was apparent that the manufacturers shift through various stages of maturity in the adoption, implementation and expansion of advanced services based strategies. Indeed, all of the manufacturers, aligned with Kotter and Cohen's model, started their journey by creating the sense of urgency and forming a group of colleagues to explore servitization through search for industrial exemplars which they could study in detail. From their research they perceived such exemplars to be businesses such as Rolls-Royce, Caterpillar, and Alstom Train-Life Services. Subsequently, and after various visits to these companies and conversations with a range of personnel, the manufacturers started to create a preliminary vision for their respective organisations. By the time of the final workshop (April 2017) a few of the engaged manufacturers were in the stage of communicating their developed vision towards more senior executives within the organisation, while a number of other manufacturers had passed this stage and started to further gaining traction by developing and experimenting several advanced services offerings with their customers. For instance, in the case of one of the manufacturers (Tyre Manufacturer), three main objectives were defined: repeatedly enhancing the relationship building with relevant stakeholder inside the organisation, empowering the smaller teams to develop innovative ideas as part of the advanced service offerings, and creating short term wins by testing the offerings with the relevant customers in different region. After the success with several rounds of experimentations with the selected customers

(for nearly 18 months), the manufacturer launched their first advanced services offering. The offering focused on taking care of the entire tyre-related operation for the road haulage companies through sensor enabled monitoring of tyre pressure and alerts, based on a monthly service fee model in Europe. This was followed by a period of expansion, where a dedicated team from the R&D, marketing, and sales came together to work closely in identifying new relevant customer across the continent.

The collective positioning of the engaged manufacturers, and those manufacturers that were well ahead in terms of their development and delivery of advanced services business (companies such as Rolls Royce, GE, MAN Truck & Bus UK, Xerox, etc.) led us to propose four stages of maturing for servitization, namely: **Exploration**, which concerns with searching and finding out about advanced services and how the vision for competing through these services may look like, **Traction**, which concerns with the idea that advanced services are a valuable way to compete, gains popularity and acceptance, **Acceleration**, which concerns with an increase in the speed at which advanced services are developed and implemented for a wider market segments, and **Exploitation**, which focuses on the idea that advanced services form the basis of competitive advantage.

4.2 Key forces affecting the progression of the transformation

The manufacturers were progressing through the transformation stages at differing rates, and these rates were affected by a selection of forces. Immediately apparent were those relating to (i) the customer's appetite for services in general and advanced services in particular, and (ii) the development of technological competences to enable the development and delivery of advanced services. The analysis of the relevant literature demonstrates that Rolls Royce and Alstom Train-Life Services, for instance, are both manufacturers whose move into advanced services was a direct consequence of their customers (American Airlines and Virgin trains respectfully) demanding such proportions (Baines and Lightfoot 2013). By contrast MAN Truck & Bus UK became aware of technologies that could record how a truck was being driven and transmit this data back to the owner, and this capability provided a platform for the development of their services strategies. The innovation literature acknowledges such forces, by explaining that innovation is considered to occur through an interplay of technology push and demand pull (Cohn 1980, Howells 1997).

Other contextual factors were, somewhat, more elusive and affecting the progression beyond the forces of push and pull. Across the engaged manufacturers, it was evident that they all were successful businesses before they commenced on a services trajectory; in other words none were seeking to adopt services as a proposition for poorly performing production facilities. All the cases had a degree of readiness to change, and the extent of this affected whether the business would commence on the transformation. Furthermore, a similar set of contextual forces reflected the positioning of the manufacturers within the wider value network. They were, to a different degree, affected by the existence of distributors, suppliers, etc. and the willingness of these to support advanced services. Collectively these factors provide a rich description of the context external to the organisational transformation. Hence, the fifth set of factors that affect the rate of progression was apparent to be internal to the manufacturer. These concern the general approach to the adoption of innovation, such as willingness of manufacturers to innovate, seniority of engagement, and the skill-sets and openness of management. In summary, five sets of factors were recognised, namely: **Market Pull**: external context factors about market and the market environment; **Technology Push**: external context factors predominantly related to technological competencies; **Organisational Maturity & Readiness**: internal context factors about the organisations performance and focus; **Ecosystem Structure & Organisation Positioning**: external context about the value network structure; and **Organisational Commitment & Capability**: common internal factors that act across all stages.

4.3 Pathways towards servitization

From the engagement workshops, a picture started to emerge that a manufacturer progresses through four stages of transformation, and the rate of progression is determined by five principle forces. Looking in more detail, each of these stages consists of a range of activities, ranging from developing customer value proposition(s) and experimenting it with relevant customer(s) through to re-integration of the production and service organisation. Yet, not all manufacturers progress through all activities in the same order. The analysis of the literature as well as empirical engagements with the selected manufacturers demonstrate three principal pathways.

As discussed earlier, Rolls Royce were pulled into the development and delivery of advanced services by their customers especially American Airlines. The strength of this pull was such that it affected the activities with which they engaged; for instance it was not necessary to scan and analyse the market sector to identify customers with which to work. Rather, the challenges centred more on developing the traction internally to take this opportunity, along with putting in place technologies to enable power-by-the-hour to be delivered. We, therefore, consider Rolls Royce to have taken a '*customer-centric*' pathway through the transformation process. MAN Truck & Bus UK was different. The Chief Executive of the company was, by his nature, inquisitive about technology and how this may be exploited. In the exploration phase, the manufacturer started to collaborate with a telematics provider to experiment how their technology systems might be exploited. Unlike Rolls Royce, it was necessary to identify and engage with customers. However, where Rolls Royce then had to go formally engage in joint-ventures and acquisitions to create their engine health management systems, MAN had implicitly moved through many of these decisions. Here, we consider MAN to have taken a '*technology-centric*' pathway. A third pathway started to emerge through the engagement with the manufacturers in the workshops. Different to Rolls Royce and MAN, few of them started their journey neither through the customer's pull nor exploring technological capabilities. Rather, their senior personnel were exploring the ways to stimulate growth, and came to recognise that business model innovation around capability-oriented services provides a possible route. Consequentially, they had to engage in a range of activities from developing and experimenting with customer value propositions, through to deciding upon relationships with technology suppliers. However, they came to the process with a relatively higher level of organisational engagement and a more structured methodology for innovating the propositions. Here, we consider them to have taken an '*organisational-centric*' pathway.

We therefore suggest three pathways that manufacturers can follow through the four stages of transformation, and reflecting bias towards customer, technology and organisation. We also suggest that these may interacted in different stages of transformation, meaning that a manufacturer can start off the journey from an organisational point, but then as the journey progresses, it moves towards more technological or customer-centric pathways. Collectively therefore, these stages, forces and pathways combine to form a theoretical model (Figure 1) that explains the transformation process towards servitization.

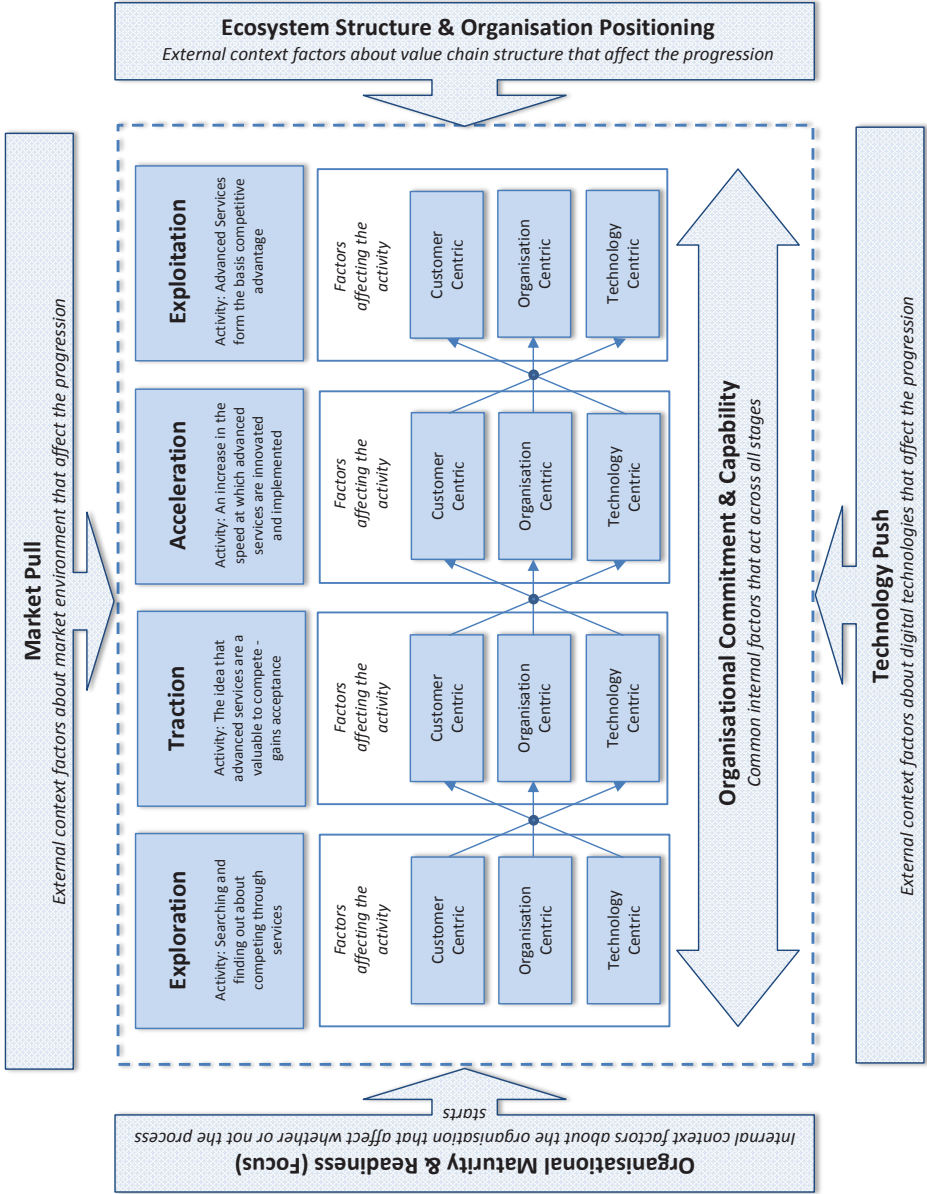


Figure 1: Organisational Transformation towards Servitization

5. CONCLUSION, CONTRIBUTIONS AND FUTURE RESEARCH

This study has explored the processes undergone as a manufacturer moves towards servitization. This is a complex and multi-faceted process, which we have examined through (i) extensive review of relevant literature, and (ii) a series of comprehensive and structured engagement workshops with senior executives of 10 multinational manufacturers.

The resultant model presented in this paper contributes to both research and practice. From the theoretical perspective, this research will contribute directly to our knowledge of organisational transformation in manufacturing arena. This is the first attempt in identifying and proposing the transformation stages and pathways towards servitization, which is consistent with Baines et al (2017)'s calls for putting forward a prescriptive case in organisational transformation.

From practical perspective, executives in manufacturing firms seeking to servitize are inspired by the success of leading companies in the field. The organisations that are commonly agreed to have successfully servitized have followed emergent strategies and through organic growth find themselves to be seen as exemplars. Detailed accounts of the pathways they followed are elusive and subject to post-rationalisation opinions. However, what executives of the firms that have recently started the transformation journey are actually looking for is a robust and step-by-step approach drawn from the experiences of the leading companies, which provides prescriptive strategies towards servitization. The proposed model presented in this paper focuses in narrowing down this gap. This is however an exploratory study, providing a platform for future work in which the propositions need to be further tested through more empirical research.

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