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## Perceived cultural enablers and inhibitors of the organizational transformation towards PSS

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### Abstract

The servitization of production towards product-service systems (PSS) is a challenging transformative endeavor. It demands a shift of deeply rooted manifestations like shared assumptions, values and beliefs framing the understanding about and performing of core tasks of value creation. Whilst the existing body of research agrees on the pivotal factor of these deeply manifested elements of organizational culture, we argue that there is still little research elucidating actors' perceptions of the role of culture in servitizing organizations. This paper aims to address this research gap by introducing an explorative cultural analysis at the company Ericsson. The main objective is to retrieve and further specify cultural facets and their potential role as enablers and inhibitors of servitization as perceived by actors. The key results of the study provide an advanced understanding of organizational culture as a critical factor within servitization of production. On the one hand, the results reveal that perceived separation-oriented values and beliefs emerge as specific cultural facets which enforce the exploitation of established product-oriented and service-oriented routines and practices. On the other hand, perceived facets of integration-oriented values and beliefs underpin the mutually organized processes of value co-creation. Based on these results, the authors finally argue that the integration- and separation-oriented values and beliefs of organizational culture make up a specific field of opposing forces within the servitizing organization of Ericsson. In order to make progress in servitization we argue that one approach of addressing or managing this specific field of opposing demands might be the nurturing of path-breaking initiatives.

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*Keywords:* Organizational culture, PSS transformation, value co-creation, path-breaking

### 1. Introduction

The transformational shift towards Product-Service Systems (PSS) that can be conceptualized as servitization, servicisation or service infusion has been on the research agenda for over a quarter of a century [1]. Baines defined servitization as “the innovation of an organization’s capabilities and processes to shift from selling products to selling integrated products and services that deliver value in use” [2]. As such, servitization contributes to organizations’ capability to successfully become PSS providers, e.g. by reorganizing traditional transaction-based customer interactions towards co-creative interactions in order to offer

highly customer-specific services and solutions [3-6]. In addition, servitization can also be understood as a transformation which equips organizations with the capabilities to adapt the business model continuously to internal and external needs [7,8].

The need to shed further light on the transformational process of organizations aiming to servitize their core business is stated both from academics and practitioners [7]. Looking at the wide set of challenges, it is prevalent that organizations ask for specific models, approaches, and best practices in order to understand and manage the transition more successfully. The retrieved challenges range from financial aspects (e.g. [3]), operational challenges such decoupled or

isolated product and service deliveries [2,10,11], cultural and mindset challenges [4] and contradicting service- and product-oriented logics [12-16].

Nevertheless, there remains still a research gap concerning the actual process with the inclined organizational changes and transformations [17,18] to build up an integrative product and service system.

The role of “culture” is stressed for the successful transformation, yet it remains in wider parts an umbrella term for all intangible challenges within the servitization process [3,19,20]. This article seeks to address this gap in research by exploring specific cultural facets perceived as crucial enablers or inhibitors for a servitizing organization. Our empirical results are gained during investigations at the case company Ericsson, a company which is regarded as a servitizing organization [21].

## 2. Theory Foundation

### 2.1. Organizational Culture in Servitization Research

Organizational culture can be conceptualised as “basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously and define in a basic taken-for-granted fashion an organization’s view of itself and its environment” [22]. Following Schein [23], one can divide organizational culture into three different levels: at the bottom, the invisible basic assumptions in which the culture is rooted, followed by the rules and standards that are not completely visible, but can be identified and operationalized, and at the top, the visible symbols and artefacts the culture represents to others. As Schein [23] argues, the transition of organizational culture is a challenging and time-consuming process. It should be addressed at every level, for example, by introducing new symbols and artefacts and reconfiguring the corresponding rules and standards to influence and transform shared beliefs over time [24].

Researchers in the field of servitization and PSS literature began to take a closer look at cultural phenomena that proceed the usage of the term “culture” as an umbrella term for all intangible challenges within the servitization process [3,19,20]. As Nuutinen and Lappalainen [19] claim, although the importance of culture in the transition is evident, it appears to be difficult, on the one hand, to define the phenomenon and, on the other hand, to have an impact on it.

Table 1. Manifestations of org. cultures within servitization literature

Author(s)	Term/Classification	Manifestations/Indicators
Bowen, Siehl, and Schneider 1991 [29]	Product-oriented culture	<ul style="list-style-type: none"> <li>• Efficiency</li> <li>• Economies of scale</li> <li>• Beliefs that variety and flexibility are costly</li> </ul>
Baines et al. 2009 [21]	Service-oriented culture	<ul style="list-style-type: none"> <li>• Service as core offering</li> <li>• Mission – value through service business</li> </ul>
Gebauer, Edvardsson, and Bjurko 2010 [30]	Corporate culture	<ul style="list-style-type: none"> <li>• Value of services as perceived by the employees</li> <li>• Degree to which employees and managers behave in a service-oriented way</li> </ul>
Nuutinen and Lappalainen 2012 [27]	Industrial service culture	<ul style="list-style-type: none"> <li>• Service capability</li> <li>• Service as a core task</li> <li>• Experienced and ideal values within the work community and customers</li> <li>• Work-motivational and professional identity development-related factors</li> </ul>
	Service mindset	<ul style="list-style-type: none"> <li>• Organizational structures</li> <li>• Management styles</li> <li>• Daily practices</li> <li>• Capabilities</li> <li>• Language</li> <li>• Attitudes towards service</li> </ul>
Dubruc, Peillon, and Farah 2014 [28]	Service mindset	<ul style="list-style-type: none"> <li>• Artefact: Service contract</li> <li>• Espoused beliefs and values: Integrating the client in the service proposal</li> <li>• Being able to have time for new approaches</li> </ul>

Table 1 provides an overview of the indicators for different organizational cultures as outlined in the servitization literature.

According to Gebauer and Friedli [3], a prerequisite for servitization is to overcome inherited cultural habits on both managerial and employee level [3], the inner layer of Schein’s culture model [23]. They stress the role of employees as important agents for the transformation. Their work served as a starting point and foundation for further research from Nuutinen and Lappalainen [19] as well as Dubruc, Peillon and Farah [20].

Nuutinen et al [19] embrace the ambiguity of organizational culture in their findings as they state that the organizations seemed to live in “two worlds” with a still dominant product and an emerging service orientation. The industrial service culture is not only a culture that is to be achieved at the end of the servitization journey, as they define it, “it is the organization’s learned way of responding to perceived change in demands on the core tasks when aiming at developing service business” [19].

### 2.2. Understanding Inhibitors of Cultural Change

Organizational culture can shape key actors’ cognition about the purpose of firms’ existence and how resources are distributed or allocated, for example, to nurture a specific logic of value creation [25]. Linder and Cantrell [26] argue that successful companies do not necessarily have to change their structure to address a new business logic, but they should rather (re)shape their mindset to focus on new customer needs or changing business trends. All concepts address a collective phenomenon, a shared and unquestioned understanding of how to run a business successfully (in the present and the future). Even though a mindset is often related to individual actors, it gains high relevance for the group and organizational level by ongoing exchange processes across all levels. Consequently, an organizational mindset can be considered as a collection of shared beliefs, symbols, practices or assumptions which may be transformed iteratively over long periods of time, for example, by collective learning processes [27].

Path dependency explains an organization’s resistance in situations demanding change due to missing or unrecognised alternatives to act in a new way. If offerings, investments or performance evaluations are taken for granted, because they tend to fulfil the expectations of powerful institutional actors within a field [28], they will survive as deeply rooted manifestations “even in the absence of hard evidence on the efficiency of conducting business in a particular way” [29]. This enforces rigidities, hinders the adoption of new movements and can lead to a lock-in state describing a deterministic action pattern which results from the loss of alternatives during organizational development and learning [30]. This core pattern promotes replicative mechanisms that can be depicted as routines [31].

A new path of potentially different choices demands a path-breaking approach. Path-breaking is defined as the re-constitution “of choice for the actors who follow the current path but succeed in deviating from it in some significant way” [p. 191, 30]. By that, the activities can lead to the creation of a new path, and at least may restore the possibility of having alternative and superior options for decisions in a pre-lock-in

phase [32]. Important aspects for path-breaking have been delineated especially according to a) the interaction between technology and power [33], b) the organizational culture [34,35] and c) the involvement of key actors [36]. Applying these considerations to servitization literature seems promising to, on the one hand, identify cultural aspects, such as standards, rules or beliefs, that enforce path dependencies and, on the other hand, identify those variables that drive path-breaking for the transition towards PSS.

### 2.3. Research Framework

Based on our theoretical conceptualisation of integrating the views of servitization literature with organizational culture, we structure our empirical investigation into a sequence of four research steps we named “STEP 1” to “STEP 4” as shown by Figure 1.

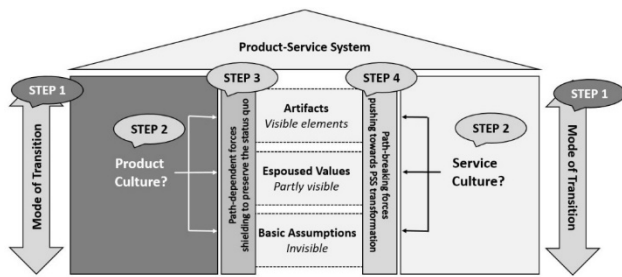


Figure 1. Research Framework

At the beginning of “STEP 1” we find it essential to understand the current mode of transition within the servitization process of the case company Ericsson. We explore context-specific information about current challenges regarding servitization. During “STEP 2” we aim to investigate visible and invisible levels of organizational culture (see also [37]) from a product and service perspective to grasp an overall picture about distinct cultural facets regarding dominant logics or mindsets. Based on a consolidation of the information gathered during the first two steps, in “STEP 3”, we are then capable of exploring cultural facets or forces which are perceived as preventing the transition towards PSS by creating or keeping path dependencies. Finally, in “STEP 4”, we seek to identify distinct cultural facets which are perceived as nurturing path-breaking in order to drive servitization. This theoretical-based conceptual framework, illustrated in Figure 2, makes up the four key categories that serve as the guiding principles in the empirical setting for the aim of exploring distinct variables of organizational culture during the transition towards PSS. In our case study analysis, we will address these categories to identify and deduce cultural variables in relation to the current progression of the servitization process.

## 3. Method

### 3.1. Case Company

The conceptual approach introduced by the theoretical framing (see Figure 1) guides the research design and data collections of the case study. As a case company served Ericsson, a global company, situated in 180 countries and more than 100.000 employees [38]. Looking at the servitization journey so far, Ericsson is in the middle of the

transition as described by Oliva and Kallenberg [5], between expanding to relationship-based or process-centered services, e.g. value-propositions and consulting capability, and taking over end-users’ operation, e.g. managed services solutions [39]. Ericsson is facing multi-facet challenges in their transformation and it is difficult to trace what effects exactly lead to the deceleration of even standstill of the transformation [40].

### 3.2. Data Collection

Empirical data for the four key research categories named mode of transition; product- and service-related rules, standards, beliefs and assumptions; path-dependent forces and path-breaking forces were collected at the case company Ericsson to shed further light on the reasons of the standstill.

The methods of data collection in use within the case study analysis at Ericsson are threefold (Table 2).

Table 2. Key categories, Operationalization and Data collection

Key categories	Operationalization	Data collection
1. Mode of transition	• Evaluation of the progression of servitization according to existing classifications or schemas	Document analysis
2. Rules, standards, beliefs and assumptions	• Indicators of a product-oriented culture (e.g. product as core value, transaction-based customer interaction) • Indicators of a service-oriented culture (e.g. service as core value, relationship-based customer interaction)	Pilot interviews (2) Interviews (14) Expert panel (3) World Café (40)
3. Path-dependent forces shielding to preserve the status quo and enhance potential lock-in effects	• Cultural elements that hinder alternative practices, e.g. specific values and beliefs, stories or symbols • Assumptions that are taken for granted	Pilot interviews (2) Interviews (14) Expert panel (3) World Café (40)
4. Path-breaking forces pushing towards PSS transformation	• Value and beliefs, stories or symbols that foster alternative practices and show potential for cultural change • New wording (company language)	Pilot interviews (2) Interviews (14) Expert panel (3) World Café (40)

As a first method, a document analysis was performed where company data was analysed to mirror the current mode of transition concerning solution business, the understanding of the customer and the value offered. As a second method, interviews were conducted, two semi-structured pilot interviews and 14 semi-structured in-depth interviews, at the Ericsson headquarters to retrieve attributes for the cultural analysis, leading to 172 pages of transcriptions. The interviewees were chosen to represent both service- and product-related divisions and various managerial levels. Subsequently, an expert panel was created with participants from the service systems research unit to mirror and evaluate the first findings. As the interviews also ask for the interviewees’ perceptions and the reasons for a struggling development, they allow the exploration of ideal pictures and attributions of the interviewee’s own department and of other departments. As a third method, we followed the tradition of action research [41-44]. This approach was chosen due to its integration of applied behavioural science knowledge with existing organizational knowledge and its focus to solve real organizational problems. It is simultaneously concerned with

bringing about change in organizations, in developing competencies in organizational members and in adding to scientific knowledge [45].

Within a world café format, first findings were presented, enabling participants to discuss and share their cognitions of the current state and possible inhibitors and enablers of the transformation. This is a way of analysing not only rules and standards, but also considerations, basic assumptions and deeply rooted shared beliefs of organizational members which are taken for granted. At the same time, it allows one to explore whether there is an open mind for new practices and change and to figure out how the actors are going in new directions and, thus, drive path-breaking activities. It functioned as an approach for frame building in the tradition of action theory approaches [46] to actively overcome notions of inertia and to support the organization to overcome path dependent tendencies. Large group methods are a common and widely spread tool to support cultural change, offering a collective experience based on building a common ground of a future vision of the organization [47-50].

### 3.3. Data Evaluation

We applied a content analysis as this method is widely recognised in management research to access deep individual or collective structures, such as values, intentions, attitudes and cognitions [51,52] and, thus, serves as an appropriate instrument to analyse organizational cultures. In addition to the transcribed interviews, company data was used to retrieve inherited rules and standards [53].

The first round of coding was based on the variables (see Table 3, column 1) within the theoretical framework, the second set of codes was inductive, therefore, it was an interactive process based on directed content analysis [54].

## 4. Findings

### 4.1. Assumptions on the Mode of Transition

Although the state of transition can be described as advanced, the reflections about the state reveals a differentiated picture. Two contradicting perceptions can be observed. On the one hand, the transformation is approached in a confident manner, revealing the strong identity as technology leader for over a century. These interviewees see the transformation as rather advanced and share a strong optimistic feeling of the future of Ericsson.

The optimistic view of the future is based on the belief in the competencies of Ericsson and their applicability to other business areas outside the traditional telecommunication customer segment. The core assumption is that Ericsson can act as an enabler for all industries when it comes to the internet of things and digitalisation.

On the other hand, the transformation is perceived as deferred, the future as a potential threat, especially concerning the adaptability of the organization to market demands:

*Yes. I don't see how we can survive just doing what we used to do with the scale of company, so we need to move into new areas and really make them work as well.*  
(Interviewee 7, Market unit)

These two perspectives can be retrieved both in service-

and product-oriented environments and stresses the need to build up a new cultural identity that bridges the past with the future.

### 4.2. Understanding Rules, Standards and Beliefs

We could retrieve two underlying patterns of perceived values and beliefs in product and service divisions. Firstly, an integrative pattern of values and beliefs which entails interviewees perceptions of working together and competencies of both sides as highly beneficial. Ways of working are perceived as depending highly on mutual collaboration inside and outside the company driven by equality and respect. Secondly, the separative pattern of values and beliefs mirrors interviewees' perception of product or service as "the others". In consequence ways of working are rather perceived as silo building while inequality is regarded as key challenge for cooperation and change. Actors perceive higher need to install further instruments to overcome the silo-thinking and build up an integrated product and service culture.

### 4.3. Path-dependent Forces

The traditional power structures, according to Schein's model the second layer of culture, are based on the separation of product and service divisions and on deeply rooted practices and routines, such as separated cost structures that foster perceived silos as well as goal and target setting processes that are perceived as drivers of internal competition:

*We have a cost structure that fits very well for rolling out a radio base station in an organization that fits very well for that. If you try to roll out something that has less margins or is less costly, or things like that, we fail [...] it's much more beneficial for me to sell another radio base station than to sell something new.* (Interviewee 3, Product unit)

The central database (system Integrated Talent Management, ITM) is seen especially as a centralised form of power that limits the scope specifically of middle managers. Path dependency on the managerial level cascades down with the central database to the employee level. The unquestioned value and beliefs fostering path dependencies are set around structures, processes and people practices while technology plays a crucial role. These perceived path-dependent forces may prevent the organization from building up a new cultural identity.

### 4.4. Path-breaking Forces

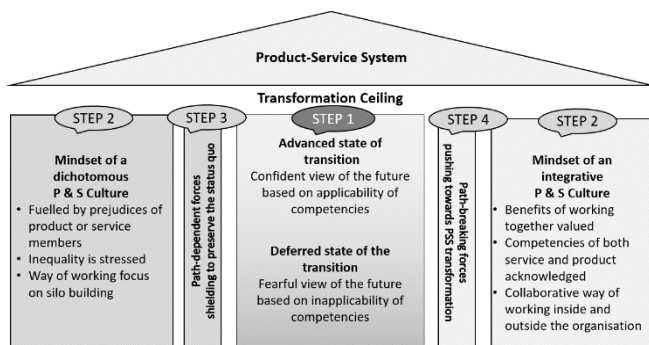
Customisation is perceived as key enabling element within the emerging practices to support path-breaking approaches. An example illustrates the new practice of "one face to the customer" thinking, ensuring stability and consistent communication:

*We are, however, starting a little bit to involve solution architects and subject matter experts from the delivery organization already in the pre-sales, which is really good, and then when we do that, we overbridge these gaps.* (Interviewee 2, Market unit)

Some newly emerging values and beliefs are perceived as supporting facets for the path-breaking approaches. The focus on customisation appears to be perceived as a mind shift for the organization, as the former perspective focused more on the internal view. The measurement system adapted is perceived as supporting the shift to the customer focus. In addition, based on this perception of customisation, the emerging practice of creating the image of an integrated product and service view seems to be developing, especially in the official publications, whereas this image did not find its ways into an organization-wide perception of a new cultural identity.

#### 4.5. Overall Picture of Cultural Enablers and Inhibitors of Servitization

Referring to the aim of our analysis we could retrieve both, perceived path dependencies deeply rooted in cultural elements which potentially hinder the servitization at Ericsson by fostering the manifestation of the transformation ceiling and perceived cultural elements enabling path-breaking forces towards PSS. Figure 4 shows a consolidated picture of these findings based on actors' perceptions.



**Figure 2.** Consolidated picture of cultural enabler and inhibitors of servitization at Ericsson

On this basis, it can be argued that manifested perceptions of path dependencies at Ericsson can be a result of the structural and logical separation of products and services. This is also mirrored by a separative mindset of organizational members. It shows that these processual and structural manifestations follow rather traditional business logics. This may foster a mindset of a more *dichotomous P versus S culture*. In parallel it can be derived from our findings that there is a change in perceptions at Ericsson regarding the appreciation of a more *integrative P & S culture* which is potentially gaining increasing importance in the future. Based on these results it can be argued, that the perceived cultural facets at Ericsson make up a field of opposing forces. These forces may mutually cancel each other out for the benefit of a current balance, named the transformation ceiling. Coping with the dynamic interplay of these forces can be considered as a challenging task but may be one key success factor to drive servitization at Ericsson further.

## 5. Discussion and Conclusion

### 5.1. Theoretical Contributions and Implications for Further Research

The integration of servitization research and organizational culture together with path dependency fostered an enhanced understanding of the role of cultural facets for the servitization process. Instead of following the traditional dichotomy of product versus service cultures, adding attributions to product, respectively, service culture, we could retrieve path dependencies residing in a separative mindset and path-breaking approaches based on an integrative mindset. The separative mindset is reinforced both on the organizational level through structures and process and on the individual level through attributions and perceptions, which might reinforce each other to foster silos. Technology and power are important triggers of path dependence, as technological means can be used to accumulate or increase power over another party [33].

From the perspective of conceptualizing servitization as an organizational transformation process, it is argued that organizations should eliminate key facets of a rather product-oriented culture as they are interpreted as inhibitors to servitize further. However, as the findings in this article revealed, the newly emerging integrative mindset at Ericsson supports the more recent conceptualization of a servitizing organization which can be described by a constant and dynamic reconfiguring process of the business model shifting between service infusion and service defusion (e.g. [55,56]). More precisely it can be argued that the integrative mindset serves as an enabling factor for constantly reshaping, redefinition, adjusting and adaption of the business model [55]. With our research, we aim to support the dual approach of understanding servitization in two ways; as a challenging transformation and change process as well as a capability that enables organizations to constantly adapt to individual customer demands by reconfiguring the business model.

Furthermore, we suggest that current servitization research could even foster the separation of a product and service, based on a self-referencing of the dichotomy of product versus service mindsets. As such, we highlight the perspective that current research might incline to elements of path dependence. The new conceptualization of a servitizing organization has the potential to serve as a path breaking approach in servitization research that contributes to a novel perspective on product & service that extends the view of the dichotomous paradigms in research and practice.

### 5.2. Managerial Implications

Our analysis highlights the role of organizational culture for servitization. To introduce specific interventions, it is necessary to first analyse the variety of existing rules, standards, assumptions and beliefs. It seems to be of great importance to value and integrate the different views instead of creating a dominant culture. In this case, the research led to first actions to support the transformation that incorporates the possibility of recognising and breaking through the transformation ceiling and organizational persistence. Large-scale interventions focussed on integrative structures and processes, such as installing shared key performance indicators and mixed P&S team structures. Small-scale interventions focussed on the awareness of the importance of the daily language.

## 6. Limitations and Outlook

The single case study analysis is faced with a lot of critique in research discourse, leading to a bias that it is a “synonym for freeform research where anything goes” [57, p.164]. The lack of methodical guidelines [58] was addressed through the application of different methods, interviews and the World Café setting, yet further research is needed to retrieve potential specifics of the states of the transformation, industries and company sizes, as this case was limited to a large telecommunications corporation. Regarding this research, we could delineate first indicators that need to be further addressed by future research. Especially the link to change management approaches and the role of a dominant logic [59] seem to be fruitful for further insides concerning the facilitation of the transformation.

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