

17th Industrial Product-Service Systems Conference - PSS, industry transformation for sustainability and business

Change of culture or culture of change? Introducing a path-agency-culture (PAC) framework to servitization research

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Abstract

Right from the beginning of servitization research, one of the depicted organizational challenges of this transformational process resided in the realm of culture, especially concerning an organizational culture that is bound to a dominant product culture that prohibits the transformation to an integrated PSS provider. Therefore, the underlying concept of culture within current servitization studies promotes predominantly cultural consistence and coherence, possible variability's, ambiguities and paradoxes are to a greater extent omitted. Analysing and questioning the underlying concepts of culture within servitization research to this point, this paper will shed light on the question, how a comprehensive understanding of organizational culture can offer further insights to support the servitization process of companies. Two concepts of culture that are linked to path research serve as a theoretical foundation: The first concept identifies organizational culture as a promoter of path dependence and therefore as an inhibiting factor within the servitization process. The role of agents is perceived rather passive within this view. The second concept of organizational culture stresses the role of culture as a promoter of path creation and therefore as an enabling factor within the servitization process. According to this view, social agents can actively use cultural means to create new paths for the organization. On this basis a conceptual framework for analysing organizational culture within servitization will be introduced that comprises the dimensions a.) path constitution, b.) role of agents and c) manifestations of culture. This framework embraces the ambiguity of culture within the transformation process as both, an inhibiting factor, as a culture that needs to be changed, and as an enabling factor, as a culture of change.

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Peer-review under responsibility of the International Scientific Committee of the 7th Industrial Product-Service Systems Conference - PSS, industry transformation for sustainability and business

Keywords: servitization; organizational culture; path theory

1. Introduction

Over 25 years ago the term “servitization” was created by Vandermerwe and Rada to describe the movement of companies to add value to their core corporate offerings through service [1]. More precisely servitization is defined 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]. Within the last years, the understanding of servitization has increased. As one of the major challenges for companies the acquisition of a new organizational culture was depicted [2,3,4,5]. Only recently, researchers began to take a closer look at the cultural

phenomena that proceeds the usage of the term “culture” as an umbrella term for all intangible challenges within the servitization process [3,6,7]. As Nuutinen and Lappalainen claim, although the importance of culture in the transition is evident, it appears to be difficult on the one hand to define the service culture phenomenon and on the other hand to have an impact on it [6].

Within this paper existing approaches will be reviewed and developed further to create a new framework that will combine concepts of organizational culture, path theory and agency. The epistemic interest of the paper is therefore to address the role of organizational culture(s) within the servitization process by deconstructing and reframing underlying discourses of culture

in order to establish a conceptual framework for future research that inherits the specific challenges of organizational culture within the servitization process in interrelation with path dependency and role of agents.

2. Bridging organizational culture and path dependency

The anthropologists Clifford Geertz defined culture as “social established structures of meaning” [8]. In this sense, meaning is constructed not just individually, but within a specific social context. One possible social context are organizations, for which Edgar Schein stated a more specific definition, which is widely accepted. He understands organizational culture as “basis 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” [9]. Schein furthermore describes three fundamental levels at which culture manifests: 1. Artefacts; 2. Espoused beliefs and values; 3. Underlying assumptions [9].

According to Schein, artefacts are apparent on the surface as visual organizational structures and processes whereas espoused beliefs and values reside within the middle level of his model and refer to organizational strategies, goals and philosophies which may or may not actually guide behaviour. The core of an organizational culture is constructed by underlying assumptions that members unconsciously perceive and take for granted and are generally unquestioned or unexamined. [9].

This shared way of understanding, the “taken-for-granted ways” relate to the concept of “routines”. On the one hand, routines as “action-patterns” [10] contribute to the way how work is carried out in organizations [11,12], they foster structural stability and patterning, on the other hand they can foster path-dependencies [13] due to self-reinforcing mechanisms.

To analyse existing organizational cultures and its effects Gerry Johnson [14] developed Schein’s approach further and described organizational culture as a network of internal structures and processes, which continuously creates and enhances the self-perception of an organization. The core of his concept of a cultural web is the “paradigm”, the taken-for-granted assumptions and beliefs of a certain organization culture, composed out of a number of elements that can be used to describe or influence organizational culture: Routine behaviours, organizational rituals, stories, organizational symbols, power structures, organizational structures and control and reward systems [14,15].

Within this understanding organizational culture functions predominantly as a promoter of path dependence. It fosters self-reinforcing loops, rooted in control structures, shared mindsets and search for best practices with limited opportunities and incentives to take alternative courses of actions, inheriting the potential threat of a lock-in. The main criteria of this conceptualization are consistence and coherence [16,17,18].

Another understanding of culture conceptualizes it as a “toolkit” of heterogeneous elements that individuals can flexibly draw on [19]. It derives from the “theories of practice” discourse [20] that led to the practice turn in social theory and

is closely linked to the concept of cultural repertoires [21] and Bourdieu’s notion of habitus and cultural capital [22]. In this view culture is able to provide actors with the tools for navigating their environment and solving problems [19]. Distinctive toolkits consisting of concepts, actions, stories and symbols are associated with particular actors and collectives [19].

This concept of culture stresses the role of agents as they can actively change the path of an organization with cultural means. Therefore this understanding can be perceived as a promoter of path creation.

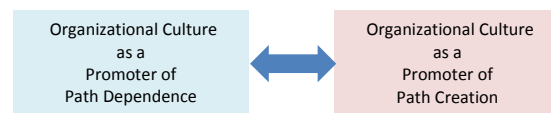


Fig. 1. Potential roles of organizational culture within a transformation process

Differentiating these two ways of conceptualizing culture and path constitution both inherit beneficial aspects for their application to the servitization process. Whereas the understanding of culture as promoter of path dependency can foster the understanding of the inhibiting impact of a dominant product culture [23,24,25], the role of organizational culture as promoter of path creation offers opportunities for initiating a change process towards a strategic goal, in this case to become an integrated product and service provider.

Current discourses about change within the complexity theory stress its emergent characteristics. They focus on the interactions between agents in the system and negate the deterministic thinking of a transformation to a desired state [26]. Changing how people think is a difficult endeavour as their mental representations or mindsets are often deeply embedded below the surface of conscious thought. Therefore, one major task is to surface cultural determinants to understand the prevailing culture and to provide the agents with the possibility to change it [26].

3. Organizational culture within servitization research

Although there is a broad understanding of organizational culture being one of the most important levers for organizations within the servitization process [2,3,4,5], only a few authors so far commenced to establish a taxonomy of organizational cultures within servitization [3,6,7].

3.1. Underlying concepts of culture in current servitization research

Gebauer and Friedli [3] were among the first researchers to introduce a cultural perspective to servitization research. They retrieved two main dimensions for the service orientation: company values and employee behaviour. Furthermore they stressed the importance of service awareness and service culture. According to them a prerequisite for servitization is to overcome inherited cultural habits on both managerial and employee level [3]. They stress the role of employees as important agents for the transformation. Their research served

as a starting point and foundation for further research from Nuutinen and Lappalainen [6] as well as Dubruc, Peillon and Farah which will be further analysed in this section.

Nuutinen and Lappalainen [6] applied the organizational culture perspective in further detail to gain new insights concerning the barriers companies face within the servitization process. They conceptualize the process as a transformation from product-oriented culture towards a more customer- and service-oriented culture [6]. They ground their approach on two main concepts: industrial service culture and capability (ISCC). Industrial service culture is defined “as an organisation’s learned way of responding to perceived changes in demands on the core tasks when aiming at developing service business” [6]. It can be divided in the three main manifestations: 1. Service capability, 2. Experienced and ideal values within the work community and 3. Customers and work-motivational and professional identity development-related factors [6]. Within their framework they separate three subcultures according to their respective core tasks: a product-oriented culture, a product and service oriented culture and a customer value-oriented and service-oriented culture.

Dubruc et al. [7] conceptualize a specific corporate culture as a prerequisite for the transformation process of servitization. They draw upon activity theory and the cognitive and psychological dimensions that support the transformation, esp. the socio-constructivist approach of Vygotsky [27], enriched by Engeström [28], hence stressing the roles of subjects and objects within the activity system. They understand the transformation as a learning process consisting of three major elements: 1. The contract, 2. The awareness of the customer needs and 3. Being able to have time [7]. Their classification is based on Schein’s dimension “artefacts”, “espoused beliefs and values” and “basic underlying assumptions” [9].

3.2 Research objectives & methodological approaches in current servitization research

Nuutinen and Lappalainen [6] state two research objectives: a tool to analyse the development state of a company from an organization culture point of view and a framework to evaluate the progress in the long run within a company. With this approach they embrace two important dimensions of servitization, as introduced by Servadio and Nordin [29], the organizational dimension and the procedural dimension.

Nuutinen and Lappalainen [6] applied a case study based approach in a dynamic and iterative process to test and develop their framework further. Their research question was “how can the transition from product to services be analysed and supported from an organizational culture perspective?”

Two companies, both technology manufacturers, in different but relatively early phases within the servitization process were chosen to conduct the study relying on both quantitative and qualitative methods followed by an analysis of the individual cases and a cross-case analysis.

The research objective of Dubruc et al [7] is to develop a conceptual framework for analysing the impact of servitization on corporate culture from a cognitive and psychological point of view. They rely also on case studies for their research, but focused especially on SMEs with the use of primarily

qualitative methods. They established in cooperation with SMEs in their region an action-research device including regular meetings, workshops and interviews of managers and other people that are involved in the servitization process within a two year time scale.

3.3 Results of current servitization research related to underlying culture concepts

Nuutinen and Lappalainen [6] approach embraced the organizational culture point of view as transformation from a product-oriented culture towards a service oriented culture. The product and service oriented culture resides in-between both cultures with the service culture as anticipated goal (see Fig. 2.: transformation II + transformation III). Dubruc [7] case study focused on a company within the starting period in the transformation, first service culture specific elements could be observed but the restricted time frame limited the degree of clarification. Nevertheless, both papers stress the importance of clients or customers to achieve a service-orientation in corporate culture as well as a mindset that anticipates the value creation potentials of integrated services for the company.

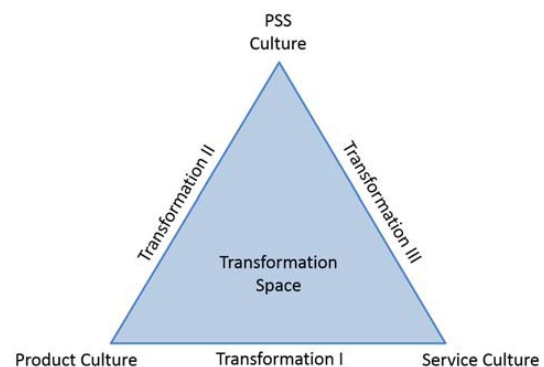


Fig. 2. Transformations of Cultures within Servitization

Nuutinen and Lappalainen [6] presented on the one hand the comparison of the results concerning the current state of ISCC within the two cases and the evaluation of the framework. Concerning the 5 basic elements of their framework they were overlapping and this led to difficulties concerning the factor analysis. Nevertheless the relevance of the elements of the framework was confirmed within the workshops. Furthermore the complexity of the phenomena concerning the conceived states, their differences and variances within one organization could be corroborated. The function of the workshops to create a common understanding proved to be supportive.

Dubruc et al [7] structured their results on the basis of Schein’s dimension. They state that the contract between the case company and its client served as the most important artefact as it defined and helped to embody the services and retrieved different perceptions of the artefact. Concerning espoused beliefs and values they stress the role of the customer relationship management as key for the transformation. Underlying assumptions concerned especially a specific mindset. In this case the general manager of the case company did consider service as pure add-on and not as an integrated

part. Another result concerned “time and training” retrieving that sufficient time is essential to adapt to a new mindset. One of the key aspects of this study is the focus on both managerial and employee level. The benefits of the SME case study is the possibility to gain insights from the top level decision maker. They focus on the “change of culture” to become a PSS provider stating that a cultural change will occur when service activity is fully integrated in the case company.

Nuutinen et al [6] 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”. As such it can be defined as a “culture of change”.

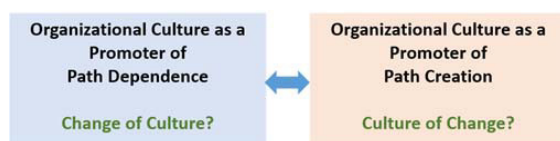


Fig. 3. Possible conceptions of organizational culture within a transformation process

Both papers stress the importance of clients or customers to achieve a service-orientation in corporate culture as well as a mindset that anticipates the value creation potentials of integrated services for the company

4. Introducing a conceptual framework for analysing organizational culture(s) within the servitization process

What is the role of organizational culture within the servitization process? Is it a product culture that needs to be changed into a service culture or integrated into a PSS culture? Is a culture of change a prerequisite to proceed further to an anticipated goal? First insights about important cultural dimensions within this transformation process could be traced, nevertheless servitization research has still to shed further light on possible interrelations and path specific characteristics. Based on the presented concepts, a tentative framework consisting of three key dimensions is proposed in the following section. “Path constitution” stresses the procedural or evolutionary character of servitization and the relevance of the history of the organization, “cultural dimensions” mirrors the perceived manifestation of a dominant organizational culture and of the subcultures whereas “role of agents” takes into account the role of the individual actors within the organization, their possibilities to actively change a path or

culture and – vice versa – their limited ability to act because of a dominant culture and/or a path.

4.1. Path constitution

A path is understood as a “course of events interrelated on different levels of analysis, such as a single organization or an organization or technological field, and in which one of the available technological, institutional or organizational options gains momentum in time-space, but cannot automatically be determined from the onset” [31]. Important for the analysis are actions and events that induced or have the potential to induce former, current and/or future trajectories of the path. The trajectories of paths within servitization are manifold, next to the first linear understanding of the process as a series of incremental steps [1,5], researchers took a closer look at the interruptions and frictions within this process [32,4,3]. Some authors provide evidence of non-linear [33] or even reversed transition processes [34].

4.2. Role of agents

Agency is the capacity of individuals to act independently and to make their own free choices [35]. The dilemma of the role of agents within path trajectories mirrors the primacy of structure versus agency in shaping human behaviour [35] as it opens the debate in how far agents can change a path, break an old path and/or create a new path. Paths are at the same time the means and results of competent actors [36]. Applying this perspective to the servitization context the question remains open, who are the competent actors and in how far can they act respectively? Some evidence could be retrieved concerning the agents, esp. concerning the important role of both management and employees as well as product and service personnel [3,6,7]. Nevertheless the complexity of the phenomena within an organization, the role of product divisions and service divisions and with stakeholders outside the organization needs further research to enrich the picture.

4.3. Manifestations of culture

As portrayed, the nature of culture is Janus-faced, a dominant product culture can foster path dependence and limits the possibilities of the social agents to act. On the other hand, manifestations of culture can be changed, e.g. former separated product and service KPIs can be transformed to integrated KPIs with an imputed huge supporting impact for the servitization process [25]. Based on Nuutinen [6], the perceived core-task of the company and the perceived core value that is offered to the customer as well as the level of customer integration are important facets of this dimension. It is important for research to anticipate interruptions and the various shades within the perception of the dominance of a specific culture related to the different agents (product-related vs. service-related, hierarchy level, etc.).

4.4. Path-agency-culture (PAC) framework

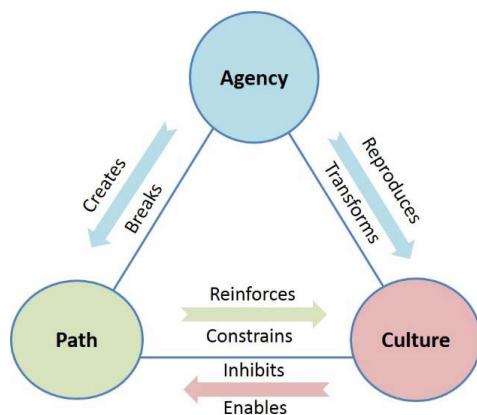


Fig. 4. Path-agency-culture (PAC) framework

Every dimension by itself can have an important impact on the servitization process, nevertheless the specific interplay of path, agency and culture offers a high potential to shed further light on the limiting and enabling factors within the servitization process.

A certain path of a company, a long tradition within a product offering, can constrain an evolving new organizational culture, on the other hand, it can reinforce the traditional culture of the organization. With cultural means a change of a once taken path can be enabled whereas a dominant culture can hinder the organization to proceed within the servitization journey. Agents are important forces within this framework, as they are not only being shaped by both path and culture but can actively change both dimensions. Culture in this view is not an epiphenomena, but constitutes itself within the relation of structure, here as a path, and agency [37].

4.4.1 Research proposal

Within a next step, this conceptual framework will be applied within a qualitative research design at a case company in order to retrieve the “real-life” manifestations of the dimensions and to gain a deeper insight of their interrelations within the servitization process. According to Yin [38] “the distinctive need for case studies arises out of the desire to understand complex social phenomena” because “the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events”. In this sense, case study is an appropriate approach for the application of the PAC framework as it is able to address servitization as a specific change effort of organizations with high complexities and process-characteristics.

In order to get a comprehensive picture the case company should have a long tradition as a product provider and should reside at an advanced stage within the servitization process; this heightens the likelihood of path dependencies and a dominant product culture. Furthermore, to get hold of the possible cultures and their manifestations as well as their demarcations,

the research design should address various perspectives, including both service and product related divisions and various managerial levels.

For the research a cognitive-evolutionary perspective will be inherited to focus on changes over time concerning the value proposition and the interaction with customers as perceived by the agents. This approach acknowledges the process-related character of servitization, the option of non-linearity, the role of the human agents and the possibility of multiple different paths of different sub-organizations. Within a world café event [39] the findings will be presented and discussed with the interviewees and further company members. This does not only lead to an enriched picture and evaluation of the results, but also supports the change process within the company. The event will be organized annually to support the process in a long run.

The outcomes of the study will lead to an increased insight about the possible rigidities organizations have to overcome when they pursue a servitization process

4.4.2 Possible managerial implications

Although the introduced framework is still preliminary and needs to be applied and further underpinned, first implications for management can already be deduced. First of all, managers have to be aware of the impact of a strong organizational culture and the challenges to build a new and/or enriched integrated product and service culture. Secondly, the Janus faced role of culture as both enabling and inhibiting factor can be further utilized to support change processes within the company, especially concerning the recognition of the relevance of services and customer integration. Last but not least, the PAC framework seems to be promising for an enhanced understanding as it sheds light on the interrelations of culture with the dimensions of path and agency. Managers can be enabled to heighten their awareness of possible pitfalls when addressing an integrated offering without an understanding that “history matters”.

5. Limitations and outlook

As proposed and underpinned in the former section, path, agency and culture and their interplay have the potential to function as important levers to gain further understanding about the servitization process. The tentative framework as proposed has to be further specified concerning the servitization facets of the dimensions of the PAC framework and their interrelations in a real-life environment. Furthermore the proposed interrelations are not yet tested within a servitization context. As a next step the research proposal will be applied within a case company to gain further specifications concerning the framework and to generate hypotheses concerning their relations. On this basis a questionnaire will be developed that will shed light on the current situation of a company and especially to retrain important levers to support the change process.

Acknowledgements

I extend my sincere thanks to the German Research Foundation (DFG) for funding the research project TR29 and to all who contributed to the paper.

References

- [1] Vandermerwe S, Rada J. Servitization of business: adding value by adding services. *European Management Journal* 1989;6:314-324.
- [2] Baines TS, Lightfoot, HW, Benedettini O, Kay JM. The servitization of manufacturing: A review of literature and reflection on future challenges. *Journal of Manufacturing Technology Management* 2009;20(5):547-567.
- [3] Gebauer H, Friedli T. Behavioral implications of the transition process from products to services. *Journal of Business & Industrial Marketing* 2005;20:70-78.
- [4] Brax S. A manufacturer becoming service provider – challenges and a paradox. *Managing Service Quality: An International Journal* 2005;15(2):142-155.
- [5] Oliva R, Kallenberg R. Managing the transition from products to services. *International Journal of Service Industry Management* 2003;14:160-172.
- [6] Nuutinen M, Lappalainen I. Towards a service-oriented organizational culture in manufacturing companies. *International Journal of Quality and Service Sciences* 2012;4(2):137-155.
- [7] Dubruc N, Peillon S, Farah A. The Impact of Servitization on Corporate Culture. *Procedia CIRP* 2014;16:289-294.
- [8] Geertz C. *The Interpretation of Culture*. Basic Books; 1973.
- [9] Schein E. *Organizational Culture and Leadership*. San Francisco: Jossey Bass Publishers; 2004.
- [10] Sydow J, Schreyögg G, Koch J. Organizational paths: Path dependency and beyond. Paper presented at the 21th EGOS Colloquium 2005, Berlin.
- [11] Pentland BT. Conceptualizing and measuring variety in the execution of organizational work processes. *Management Science* 2003a;49:857–870.
- [12] Pentland BT. Sequential variety in work processes. *Organizational Studies* 2003b;14:528–540.
- [13] David PA. Path dependence and the quest for historical economics: one more chorus of the ballad of QWERTY. *Discussion Papers in Economic and Social History* 1997;20, University of Oxford.
- [14] Johnson G. Rethinking incrementalism. *Strategic Management Journal* 1988;9:75-91.
- [15] Johnson G, Scholes K, Whittington. *Exploring Corporate Strategy*. London: Prentice Hall; 2007.
- [16] Sydow J, Schreyögg G, Koch J. Organizational path dependence: Opening the black box. *Academy of Management Review* 2009;34(4):689-709.
- [17] Martin J. *Organizational culture: Mapping the terrain*. Sage; 2002.
- [18] DiMaggio P. Culture and cognition. *Annual review of sociology* 1997;23:263-287.
- [19] Swidler A. Cultural repertoires and cultural logics: can they be reconciled?. *Comparative and Historical Sociology* 2002;14(1):1-6.
- [20] Schatzki TR, Knorr-Cetina K, von Savigny E, editors. *The practice turn in contemporary theory*. London: Routledge; 2001.
- [21] Lamont M, Thévenot, L 2000. Rethinking comparative cultural sociology. *Repertoires of Evaluation*. Cambridge University Press; 2000.
- [22] Bourdieu P. *The logic of practice*. Stanford University Press; 1990.
- [23] Finne M, Tanskanen M, Brax S. Path Dependence Approach to Servitization: A Case Study with Two Companies. In: *Proceedings of the 17th International working seminar on production economics 2012*; Innsbruck, Austria.
- [24] Elfving SW, Washington N, Lienert A, Mänz K, Wilkens U. (2014). At a Crossroads: Case Study Analysis of the Organizational Challenges within the Transformation Path to an IPS?. *Procedia CIRP* 2014;16:326-331.
- [25] Lienert A, Elfving SW, Washington N, Wilkens U. Enabler or Inhibitor – Understanding the Role of KPIs within the Servitization Process. In: *3rd International Business Servitization Conference Servitization 2014*, Nov 13-14, 2014, Bilbao, Spain.
- [26] Seel R. Culture and complexity: new insights on organisational change. *Organisations & People* 2000;7(2):2-9.
- [27] Vygotzky LS. *Thought and Language*. Cambridge MA: MIT Press; 1962.
- [28] Engeström Y. Activity theory as a framework for analyzing and redesigning work. *Ergonomics* 2000;43(7):960-974.
- [29] Servadio L, Nordin F. Critical issues during servitization: an in-depth case study. Paper presented at AMA Servsig, International Service Research Conference 2012, Hanken School of Economics, June 7-9, 2012, Helsinki, Finland.
- [30] Reiman T, Oedewald P. Measuring maintenance culture and maintenance core task with CULTURE questionnaire – a case study in the power industry. *Safety Science* 2004;42(9):859-89.
- [31] Sydow J, Windeler A, Müller-Seitz G, Lange K. Path Constitution Analysis: A Methodology for Understanding Path Dependence and Path Creation. *BuR - Business Research* 2012;5(2):155-176.
- [32] Windahl C. *Integrated solutions in the capital goods sector - exploring innovation, service and network perspectives*. Linköping Studies in Science and Technology, Dissertation No. 1098, Linköping University, Linköping, 2007.
- [33] Fang E, Palmatier RW, Steenkamp, JBEM. Effect of Service Transition Strategies on Firm Value. *Journal of Marketing* 2008;72:1-14.
- [34] Finne M, Brax S, Holmström J. Reversed servitization paths: A case analysis of two manufacturers. *Service Business* 2013;7:513-537.
- [35] Barker C. *Cultural Studies: Theory and Practice*. London: Sage; 2005
- [36] Windeler A. Kreation technologischer Pfade: ein strukturations-theoretischer Analyseansatz. *Managementforschung* 2003;13: 295–328.
- [37] Hays S. Structure and agency and the sticky problem of culture. *Sociological theory* 1994;12:57-57.
- [38] Yin RK. *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage; 2003.
- [39] Vahs D, Weiland A. *Workbook change management*. Stuttgart: Schäffer Poeschel; 2010.