FROM SELLING ASSETS TO DELIVERING EQUIPMENT-AS-A-SERVICE

Johanna Knapp, Claudio Lamprecht, Heiko Gebauer, Felix Wortmann

RESEARCH MOTIVATION

More than ever, megatrends such as digitalization, Industry 4.0, and servitization continuously challenge traditional value creation and capturing (Porter & Heppelmann, 2014). Especially the capital intensive manufacturing industry witnesses such a disruption, hence, faces enormous global competitive pressure forcing companies to implement innovative business models (Baines, Lightfoot, Benedettini, & Kay, 2009; Helo, Gunasekaran, & Rymaszewska, 2017). Moving from solely selling assets to delivering solution-oriented service models offers promising paths to embrace digital servitization. Intrigued by the enormous growth benefits of Internet of Things (IoT) enabled outcome-oriented solutions, both academic and practical discussions intensified immensely during the last century.

However, in reality, the implementation of industrial result-oriented product-service models (Ng & Nudurupati, 2010; Tukker, 2004), such as Equipment-as-a-service (EaaS) concepts, can pose a challenging, complex, and often overwhelming task for product-focused equipment manufacturer (Baines et al., 2009; Helo et al., 2017; Parida, Sjödin, Wincent, & Kohtamäki, 2014). Hesitations rooting in an insufficient understanding of the customer role within the EaaS ecosystem and of the potential customer value (Cusumano, Kahl, & Suarez, 2015; Kohtamäki, Henneberg, Martinez, Kimita, & Gebauer, 2019; Tuli, Kohli, & Bharadwaj, 2007) impede exploration efforts in practice. Until today, only a few capital equipment manufacturers successfully offer outcome-based contracts meeting relevant market demand, primarily based on financial results (Grubic & Jennions, 2018).

Despite acknowledged growth benefits and challenges, the fundamental question of *how* companies can utilize EaaS remains widely unanswered to practitioners. Aiming to unlock the enormous potential of industrial product-service offerings, recent research emphasizes the need for a deeper understanding of customers and their involvement in strategic choices as well as in the process of value creation and capturing (Kohtamäki et al., 2019). To obtain a holistic picture, leading changes in customer demand, processes, product usage, and, hence, the underlying value-stack deserve special dedication in future research.

CONTRIBUTION TO THEORY AND PRACTICE

This ongoing research addresses the identified gap between the acknowledged growth benefits of outcome-based service contracts and the limited diffusion of successfully released offerings of capital equipment manufacturers. Aiming to understand how EaaS offerings should be designed in order to deliver an attractive value proposition, a multiple case study approach applies. Sources of data consist of semi-structured interviews (15-20) with managing directors, digital service portfolio managers, and product owners employed at capital equipment manufacturers, who are either already experienced in EaaS offerings or are in concepting and piloting phases. Further, emphasizing the customer perspective, current EaaS users are interviewed (5-10). Completing the ecosystem of EaaS, the study includes additional expert interviews (5-10) within the area of financial services, software companies, system integrators, and consultants.

The study complements existing academic efforts as well as provides managerial implications and guidance. The shift from product to service-dominant offerings, thus, from traditional to innovative

business models entails a wide range of challenges and organizational changes. While those find profound attention in current literature (Jardim-Goncalves, Romero, & Grilo, 2017; Matschewsky, Kambanou, & Sakao, 2018; Ulaga & Loveland, 2014) detailed insights on the design of the underlying solution value stack are insufficiently discussed (Kohtamäki et al., 2019). For instance, interviews with industrial manufacturers in the transition phase from product to service-centric offerings, point to a missing understanding of the value proposition of future concepts. With shifting market boundaries and increasing uncertainties, the customer demand for industrial equipment evolved and turned the exploration of product-service contracts to some extent to a "pandora's box". Complimenting those indications, interviews with companies already offering outcome-oriented concepts report a gap between offered value propositions and actual customer demand. In many cases, this results in disappointing market attraction and, thus, inefficient allocation of resources. Proving the need for a deep understanding of main changes in the value proposition, applying a customer-centric view, and analyzing each part of the value stack. Acknowledging the central position of customers, the analysis of their role within the ecosystem of EaaS forms an essential part of this study.

Further, enabling companies to open "pandora's box" of outcome-based contracts, this study identifies best practice approaches and highlights essential key performance indicators for attractive offerings. During recent interviews, successful EaaS providers continuously emphasized the essential customer role during exploration and exploitation. Building on further voices in the literature on the importance of such co-creation (Grönroos, 2011; Tuli et al., 2007; Vargo & Lusch, 2008), this multiple case study approach includes a description and analysis of the collaboration of customers and providers. The study aims to provide an understanding of the customer itself, attractive value propositions, and of the impact of key customers and collaborations during each phase of exploring and exploiting IoT enabled business models. By incorporating hands-on experiences, thoughts, and best practice approaches from practitioners, the work further improves accessibility and usage of academic insights in real-world fields of application.

KEY DISCUSSION POINTS

- Despite intense discussions of IoT enabled outcome-based contracts in manufacturing industries and recognized potential growth benefits, diffusion of actual offerings is still limited.
- Hesitations arise mainly from lacking expertise, limited customer understanding, and the fear of unattractively designed value propositions.
- Capital equipment manufacturing firms lack sufficient understanding of their customers to navigate through new opportunities brought by servitization and Industry 4.0.
- A link between the utilization of EaaS and unlocking new value streams enables manufacturers to address customer demand.
- Special attention is payed to the design of EaaS offerings aiming to deliver an attractive value proposition.
- In response to new innovative business models for manufacturers, customer co-creation and collaborations pave the way towards attractive value propositions.

AUTHOR CONTACT DETAILS

Johanna Knapp, University of St. Gallen, johanna.knapp@student.unisg.ch
Claudio Lamprecht, University of St. Gallen, claudio.lamprecht@unisg.ch
Heiko Gebauer, University of St. Gallen & Linkoping University, heiko.gebauer@unisg.ch
Felix Wortmann, University of St. Gallen, felix.wortmann@unisg.ch

REFERENCES

Baines, T. S., Lightfoot, H. W., Benedettini, O., & Kay, J. M. (2009). The servitization of manufacturing. *Journal of manufacturing technology management, 20*(5), 547-567.

Cusumano, M. A., Kahl, S. J., & Suarez, F. F. (2015). Services, industry evolution, and the competitive strategies of product firms. *Strategic management journal, 36*(4), 559-575.

Grönroos, C. (2011). Value co-creation in service logic: A critical analysis. *Marketing Theory, 11*(3), 279-301.

Grubic, T., & Jennions, I. (2018). Do outcome-based contracts exist? The investigation of power-by-the-hour and similar result-oriented cases. *International Journal of Production Economics, 206*, 209-219.

Helo, P., Gunasekaran, A., & Rymaszewska, A. (2017). *Designing and Managing Industrial Product-Service Systems. by Petri Helo, Angappa Gunasekaran, Anna Rymaszewska*: Springer International Publishing.

Jardim-Goncalves, R., Romero, D., & Grilo, A. (2017). Factories of the future: challenges and leading innovations in intelligent manufacturing. *International Journal of Computer Integrated Manufacturing, 30*(1), 4-14.

Kohtamäki, M., Henneberg, S. C., Martinez, V., Kimita, K., & Gebauer, H. (2019). A Configurational Approach to Servitization: Review and Research Directions. *Service Science, 11*(3), 213-240.

Matschewsky, J., Kambanou, M. L., & Sakao, T. (2018). Designing and providing integrated product-service systems - challenges, opportunities and solutions resulting from prescriptive approaches in two industrial companies. *International Journal of Production Research, 56*(6), 2159-2168.

Ng, I. C., & Nudurupati, S. S. (2010). Outcome-based service contracts in the defence industry–mitigating the challenges. *Journal of Service Management, 21*(5), 656-674.

Parida, V., Sjödin, D. R., Wincent, J., & Kohtamäki, M. (2014). Mastering the Transition to Product-Service Provision. *Research Technology Management, 57*(3), 44-52.

Porter, M., & Heppelmann, J. (2014). How Smart, Connected Products Are Transforming Competition.[online] Harvard Business Review. In.

Tukker, A. (2004). Eight types of product–service system: eight ways to sustainability? Experiences from SusProNet. *Business strategy and the environment, 13*(4), 246-260.

Tuli, K. R., Kohli, A. K., & Bharadwaj, S. G. (2007). Rethinking customer solutions: From product bundles to relational processes. *Journal of marketing, 71*(3), 1-17.

Ulaga, W., & Loveland, J. M. (2014). Transitioning from product to service-led growth in manufacturing firms: Emergent challenges in selecting and managing the industrial sales force. *Industrial Marketing Management, 43*(1), 113-125.

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science, 36*(1), 1-10.