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Service Logic in Digitalized Product Platforms

A Study of Digital Service Innovation in the Vehicle Industry

Soumitra Chowdhury
School of Information Technology
Halmstad University
&
Department of Applied of Information Technology
University of Gothenburg
soumitra.chowdhury@hh.se



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Kristian IVs Väg 3
Halmstad

Abstract

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Author: Soumitra Chowdhury

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The digitalization of products has become an important driver for service innovation in manufacturing firms. The embedding of digital technology in previously non-digital products creates digitalized product platforms that enable digital service innovation. Digital service innovation offers new business opportunities for manufacturing industries, as well as challenges established premises for value creation. While digital service innovation can be found in many manufacturing industries, this thesis studies service logic in digitalized product platforms in the vehicle industry.

Existing Information Systems (IS) literature presents challenges in digital service innovation relating to value, architecture and generativity. The design of the architecture of digitalized product platforms requires the identification and combination of digital and non-digital assets. Understanding the architectural aspects is useful in digital service innovation. Moreover, with growing instances of generative digital technologies, it is challenging to develop strategies to leverage generativity for service design in digitalized product platforms. While digital technologies are embedded in products, the role of technology-embeddedness in value creation of digital services is relatively unexplored. Drawing on these challenges, this thesis describes and conceptualizes the underlying premises brought by the architecture and generativity to the value creation of services in digitalized product platforms. The research question addressed in this thesis is: What are the underlying premises for services in digitalized product platforms?

To address the question, an interpretive qualitative research approach was adopted in a collaborative research project concerning services enabled by digitalization of vehicles. Drawing on digital innovation and service literature, this thesis presents a theoretical perspective on the role of the architecture and generativity of digitalized product platforms for value creation of digital services. This perspective is conceptualized as underlying premises for this specific class of services. The premises frame the service logic in digitalized product platforms and provide a ground for understanding services in digitalized product platforms in relation to value dimensions, architecture and generativity. The premises are based on five concepts: value-in-architecture, value-in-connectivity, fundamental asset for value creation, mutual dependence of modular and layered modular assets, and re-evaluation of value propositions. The proposed premises offer a basis for understanding value creation of this class of services, and guidance for manufacturing firms designing digitalized product platforms.