

Personalization in Digital Services: Information Technology Supporting Service Personalization Process

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Abstract Personalization technologies are widely applied for providing appropriate products and services for individual users. Service providers utilize personalization technologies for understanding the individual user needs, and for personalizing their service offerings for those needs. That perspective follows the value models of manufacturing, wherein service provider personalizes the services for the user, and where the roles of service provider and user are distinct. However, propositions that markets have transformed to services, wherein services are co-created between actors, is not supporting the traditional personalization perspective properly. For example, healthcare services are not only personalized for the user, but in co-creation with the user. Therefore in my research proposal, the aim is to examine service personalization, and the role of IT in the service personalization process, from the perspectives of different actors.

Keywords: • Personalization • Service Design • Healthcare Service • Service-Dominant Logic • Human-Computer Interaction •

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<https://doi.org/10.18690/978-961-286-043-1.52>
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Available at: <http://press.um.si>.

ISBN 978-961-286-043-1

1 Introduction

Personalization has remained an increasingly intriguing concept among scholars (Sunikka and Bragge, 2012). Through the digitization of everything (Brynjolfsson and McAfee, 2014), more and more information about user preferences is available for service providers (Salonen and Karjaluoto, 2016). Rapidly evolving digital technology provides novel platforms and channels for service delivery (Vehmas et al., 2015), and consequently for personalization (Sunikka and Bragge, 2012). In principle, personalization consists of two core components: 1) The understanding of user needs and 2) personalization of services based on those needs (Kaptein and Parviainen, 2015). In both these components, a wide variety of personalization technologies, such as recommendation systems are utilized. In other words, the purpose of personalization is to adapt standardized products or services to the individual user needs, and that personalization is carried out by the marketer on behalf of the user (Montgomery and Smith, 2009).

The concept of personalization is often used interchangeably with another one-to-one marketing concept, customization, which on the contrary is user-led, and where the user proactively “personalizes” the service elements from the marketing mix, based on their own preferences (Kwon and Kim, 2012; Salonen and Karjaluoto, 2016). In this research, we follow the viewpoint from Sunikka and Bragge (2008) who view personalization as an umbrella term, including other closely related concepts like customization.

Based on the aforementioned personalization principles, it can be argued that personalization is a service provider-led concept, where service provider decides the suitable services for an individual user, based on the information gathered. These viewpoints follow the value models of manufacturing (Lusch and Vargo, 2014), where the service provider personalizes the services for users, who then receive the services, for example in the forms of product recommendations. However, unlike manufacturing and tangible products, services, often intangible by their nature, are carried out in collaboration (co-creation) between actors (Vargo and Lusch, 2004). The service delivery may also involve more actors than service provider and the user only. Therefore, instead of emphasizing the distinction, where the marketer carries out personalization and the user receives the personalization, it is important to examine personalization from the different actors’ viewpoints, as with services, the actors together construct the personalized service.

2 Problem Definition

Personalization has remained a puzzling concept among scholars for decades (Sunikka and Bragge, 2008). The scholars in information systems (IS), computer science, economics, services, and marketing have studied the concept through different lenses, with an aim to optimize services to the individualized user needs (Fan and Poole, 2006; Kwon and Kim, 2012). In the IS field, personalization is typically technologically

emphasized, studied in the web context and examined from the perspective of a single software (Sunikka and Bragge, 2012). That viewpoint has typically included two primary actors into the personalization process. 1) The service provider, who personalizes the service offerings, and 2) the user, who receives the personalized service offerings. This distinction follows the value models of manufacturing (Goods-Dominant Logic, G-D), where companies produce (create) value and users consume (destroy) that value (Lusch and Vargo, 2014). Companies try to understand users' needs, and to personalize the service offerings for those needs. In order to do so, different information technology (IT) solutions, such as personalization technologies are widely adopted.

However, Service-Dominant Logic (S-D) has challenged this thinking by proposing that markets have shifted from manufacturing and goods-dominance to services (Vargo and Lusch, 2004; Lusch and Vargo, 2014; Häikiö and Koivumäki, 2016). Unlike tangible products, services can be defined as: “the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another actor or the actor itself” (Vargo and Lusch, 2004). In other words, any act done intentionally for benefiting an actor can be considered as a service. Services are often intangible by their nature, but are occasionally supported by tangible products. In contrast to products though, the value in services is bound to knowledge and skills that are delivered (co-created) in exchanges between actors.

In my research plan, the aim is to examine personalization of digital services through S-D logic lens, and the role IT plays in the service personalization process. Unlike concrete products, intangible services can consist of multiple steps and phases, and often involve multiple actors in the service delivery process. That can be illustrated with a healthcare example, where the primary purpose of a healthcare company is not to sell tangible products to patients, but to serve the patients' needs collaboratively with by the patient. Furthermore, this service can be supported by tangible devices, like monitors for self-measurements, and involve multiple actors, such as medical doctor, patient, or the healthcare service provider that together construct the personalized service. The aim of my research is therefore to answer to the following questions:

- How IT supported personalization can be viewed from the perspective of different actors taking part in the service delivery?
- How and what support IT can provide for different actors in the service personalization process?

3 Research Methodology

My research will apply qualitative research methods, but also quantitative methods may be used to support the findings. The primary material for my research comes from two case studies (Eisenhardt, 1989), conducted in collaboration with two large service providers. The data from those case studies consists of service documentations and the interviews (semi-structured interviews and focus groups) with the people who have been

designing the services under analysis. The data is collected and analyzed iteratively throughout the studies using qualitative data analysis approach (Miles and Huberman, 1994), with an aim to interpret and construct understanding of the situation where the examined phenomenon takes place (Klein and Myers, 1999). For example, in the case study (paper 3), two focus groups were conducted first, for getting an overview of the problem area. In the focus groups, more general and open-ended questions were discussed, with an aim to gain understanding of the unit of analysis (which in that case was a depression care pathway). Second, the findings from the focus groups were used to formulate the themes for the semi-structured interviews, where the aim was to ask detailed questions from the key informants that were selected by selective sampling technique (Sandelowski, 1995). In practice, those were the medical doctors that had been designing the examined care pathway. After the semi-structured interviews, the findings were categorized thematically and summarized into a table form. Third, a validating interview was conducted for validating the prior findings and to provide potentially complementary data.

In the future, the plan is to utilize similar settings in another case study (paper 4) regarding to the service provider perspective. For the user perspective (paper 5), user experiences (e.g. Forlizzi and Battarbee, 2004) will be collected using different types of interviews (as it was done in paper 1). That data can also be supported by quantitative data, in the forms of surveys that the service provider has already conducted with the service users.

In addition to aforementioned case studies, other qualitative analysis methods are used in single papers, such as Nexus analysis (Scollon, 2004) to deepen the understanding on user experiences about motivation for exercising (paper 1) and Interaction analysis (Jordan and Henderson, 1995) for studying service interaction between user and service clerk in a context of technology-mediated car rental service (paper 2).

4 Preliminary/Expected Results

In overall, by covering the viewpoints of different actors, the aim of my research is to increase the understanding of value creation between different actors for personalized services in the framework of S-D logic and to examine the role of IT in the service personalization process. As a technology-emphasized concept, personalization is mostly studied using the G-D logic principles and with the value models of manufacturing. Due to the idea of market transformation to services, it is important to examine personalization 1) in the service context, 2) from the different actors' perspectives, and 3) to provide knowledge on the versatile role of IT in the service personalization process. Therefore the planned articles for examining the phenomenon are presented in the Table 1.

Regarding to the preliminary findings, we have conducted an interpretive case study (Klein and Myers, 1999) for examining IT support for personalization in the healthcare service context (paper 3). In healthcare services, personalization is provided as a premise as individual conditions and needs vary between healthcare users (Berry and Bendapudi,

2007). As medical doctors are specialists in the healthcare domain, the services are typically personalized based on their professional knowledge for individual healthcare users, with support from IT and other tangible technology (such as laboratory measurement devices). In other words, IT is used as an artefact to provide the right information for the right person, in the right format (Von Thiele Schwarz, 2016). Therefore our study focused on examining the role of IT in the healthcare service personalization process. Our results from that study illustrate that personalization intertwines automatized support from IT with a more collaborative nature where service personalization occurs in co-creation and interaction between actors.

Therefore, for illustrating our findings (from paper 3), we categorized different personalization types under three main categories, based on the automatization level provided by IT: 1) Coercive personalization is automatized and does not allow interpretation of the human actor, 2) Data display personalization is automatized, but interpreted manually by medical doctors, 3) Collaboration-based personalization is supported by automatization, but the emphasis is on interpretation and co-creation between actors.

Table 1: Planned articles for the doctoral research

Paper	Perspective	Role of technology	Results
#1 Personalized Gamification: Narratives for Supporting Motivation for Exercising.	User (experiences)	Application, designed to entertain/support exercising	The focus on examining the use of narratives as a motivational feature – proposing three techniques for narrative personalization
#2 Service Interaction Flow Analysis Technique for Service Personalization.	Analysis of the technology-mediated interaction between user and service clerk	Enables technology-mediated communication	The focus on capturing evidence on how variations of service flows can be made visible in the technology-mediated service environment.
#3 Identifying Personalization In A Care Pathway: A Single-Case Study Of The Finnish Healthcare Service Provider	Medical doctor (service designer)	Intertwining the role from support that is primarily automatized, to supportive, that provides interpretative data for co-creation between actors	IT support for healthcare service personalization, based on the automatization level provided by IT: 1) Coercive personalization, 2) Data display, 3) Collaboration-based personalization
#4 Personalization in the healthcare service: Case study of a remote measurement device ½ (DRAFT)	Service provider perspective (Either designer or company)	Technology enables remote measurements and communication between actors (patient and service provider)	In the future (2017)
#5 Personalization in the healthcare service: Case study of a remote measurement device 2/2 (DRAFT)	User (patient) perspective	Technology enables remote measurements and communication between actors (patient and service provider)	In the future (2017-18)
#6 (Optional) Synthesis of the case study findings (DRAFT)	Holistic (all actors)	Framework of the IT support for service personalization	In the future (2018)

5 Future Development

In the near future, we have plans to conduct another case study in collaboration with a large service provider (paper 4 and 5). The aim is to examine both the user and service designer (or company) perspective and to provide insights how the personalized services are constructed in co-creation between these actors, and what is the role IT plays in the service co-creation. For the final paper (paper 6), the aim is to draw an overview, a holistic framework regarding to service personalization. That framework covers the perspectives of different actors and presents the diverse role of IT in the service personalization process.

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