

FOCUS ON INTERACTION: APPLYING SERVICE-CENTRIC THEORIES IN IS

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Abstract As Information Systems (IS) have already become a crucial part of everyday life, the need for new and innovative digital services for businesses is still growing. The combination of service-centric theories and IS has the potential to create appropriate services for the digital age. Despite the popularity of the service-centric theories, there are still literature gaps, especially in combination with IS. This paper aims to address these gaps by introducing an Interaction Model for designing new and improving existing services in the domain of IS. Interaction is within the service-centric perspectives an essential component to create value. At the same time, together with the technological progress, it is an essential part of IS research. Therefore, we propose a Value in Interaction Model consisting of three interconnected layers. On each of these layers, values are created. This approach is intended to make the service-centric theories from marketing more applicable to IS.

Keywords:

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creation,
interaction
design.

1 Introduction

In addition to Service Logic (SL) from the Nordic School of Marketing, Vargo and Lusch in particular have redefined the way of thinking and looking at the process of value generation in the service world (2004). The service dominant logic (S-D logic) is not only used in Marketing but also in Information Systems (IS), where it is particularly suitable for building theories (Barrett et al., 2015). This becomes more and more relevant as the advances in technology driven by the digital transformation lead to increased interaction, e. g. between suppliers and consumers (Yadav & Varadarajan, 2005), as digital networks enable and create new opportunities for communication between even more partners. Interaction is the glue that binds actors together (Fyrberg & Jürriado, 2009) in order to create value and thus, in our view, is essential for designing IS-supported services. But interaction in the context of service-centric theories as a central design element in current IS literature attracts too little attention (Brust et al., 2017). Particularly considering the background of continuous innovations in the IS field and the resulting new services and service possibilities, it is worth closing the existing research gap. For this purpose, we want to introduce a *Value in Interaction*. Interactions in the current discussion are mostly seen only as means to an end, for example as a basis for value co-creation (Breidbach & Maglio, 2016; Heinonen et al., 2010) or as a simple mechanism to facilitate exchange (Håkansson et al., 2010). In order to address this issue this contribution is structured as follows. After the conceptualizing of our research framework in the second chapter, we will shortly explain and discuss our *Value in Interaction Model* in Chapter 3. In chapter 4 we will explain the individual interrelationships of the model before concluding with a brief summary and outlook on further research in Chapter 5.

2 Conceptualizing the Research Framework

On the one hand, recent literature shows that research regarding the role of IS in service is up-to-date and highly relevant (Lim & Maglio, 2019; Ostrom et al., 2015) while at the same time technologies like while at the same time technologies like Internet of Things (IoT) or artificial intelligence (AI) demonstrate this relevance. The service-centric theories offer a possibility to create new knowledge and a better understanding of services based on IS (Barrett et al., 2015). Despite the popularity of S-D logic and SL there are still literature gaps, especially in combination with IS.

As Brust et al. (2017) were able to demonstrate through extensive literature analysis, the topics “Designing Service Experiences” and “New Service Development” were dealt with very little or not at all. Our paper aims to address this in combination with the focus on interactions by introducing a new interaction model for designing services in the domain of IS. The components of an interaction have their own value for the actors, which goes beyond increasing the density (best possible combination of resources for a particular situation) (Normann, 2001) or learning from previous interactions. In order to be able to work effectively with the IS, the interaction must be actively and individually designed to evoke these experiences. For this reason, we propose to introduce a *Value in Interaction*. Our research in progress paper is guided by Design Science Research (DSR) (Hevner et al., 2004). We are following the DSR research process by Peffers et al. (2007) consisting of 6 stages. (1) Identify Problem: The interaction between actors is essential for the design of innovative digital services. As mentioned, the analysis of Brust et al. (2017) showed a general research literature gap at the intersection of service-centric theories and IS research. As far as we know, there is no basic model that focuses on interaction as the basis for designing services. (2) Define solution objectives: Our solution objective is the introduction of a new service model for IS that explains the interaction during a service based on service-centric theories to create valuable interactions. (3) Design and development: Based on the service-oriented theories we suggest focussing on the interactions to be shaped by IS. Thus, we locate the task of the IS in influencing the layer **relationships** (see Chapter 4.1) and the **service** itself (see Chapter 4.3) with IS in such a way that the best possible result can be achieved from the actors perspective (later called **matching**; see Chapter 4.2). Therefore, we will propose the *Value in Interaction Model* consisting of three levels at the intersection of IS and service. Since this is a research in progress paper, we will initially discuss the first three steps of the process.

3 The Value in Interaction Model

The basis of any interaction is a link between actors, which exists in a common *Interaction Space* (Grönroos, 2006). It represents a potential provided by one actor, which another actor can perceive by "entering" this space. Such an *Interaction Space* can be the provision of an app (e.g. Nike+) or – more generally – an automated flow of information between actors (e.g. external monitoring of the heating system).

Through interactions in this *Interaction Space*, the actors have the opportunity to deal with the other actor and influence his or her behavior.

The proposed *Value in Interaction* arises within such an *Interaction Space* – independently for all participating actors. The value develops through and during the interaction itself. It unfolds its effect at the moment and thereby influences the further processes of value co-creation. It is thus the value of an interaction with another actor perceived by one actor. *Value in Interaction* is composed of three partial values: *Relationship Value*, *Matching Value* and the *Service Value* of the interaction itself. They emerge on three different layers: The *Relationship Layer*, the *Matching Layer* and the *Service Layer* (see Figure 1). In order to be able to design valuable interactions, to provide interactions with as much value as possible and to avoid useless or even negative interactions, actors must therefore be able to demonstrate competencies at all three layers. These are in particular collaboration and social competences (*Relationship Layer*), so-called matching competences (*Matching Layer*) and service competences (*Service Layer*).

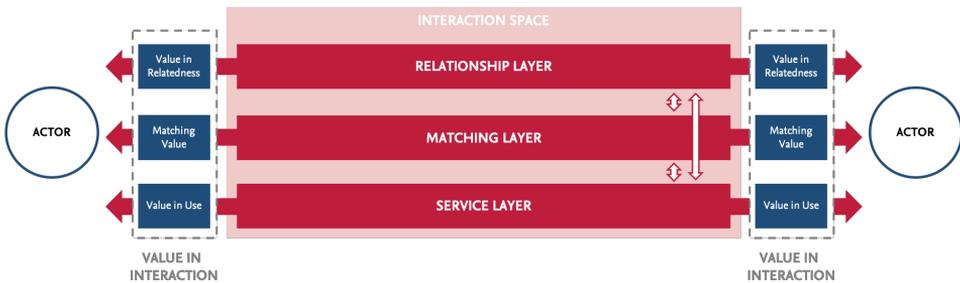


Figure 1: Value in Interaction Model.

However, the mere existence of an interaction does not always have to lead to co-creation with a positive value. Rather, it depends on the quality of the interaction (Fyrberg & Jürjado, 2009). An interaction characterized by mediocre or even negative aspects (lack of quality) will have negative effects on the value co-creation and the subsequent values. An actor should therefore always consciously design his interactions on all three layers.

Relationship Layer

The Relationship Layer deals with the emergence, influence and maintenance of the *Relationship Value*. It describes the quality of the relationship influenced by interactions between the relationship participants and can also be interpreted as a cumulative value across successive interactions (Gummesson, 1987). It results, among other things, from the social and relationship-relevant advantages that the actor claims, but also from the potential disadvantages (Cronin et al., 1997; Grewal et al., 1998). The *Relationship Value* has the possibility for both actors to increase and decrease during any interaction. Therefore, the aim of the actors is to expand or re-open the Interaction Space. Only then it can be filled with valuable interactions, so that a *Relationship Value* is created.

Matching Layer

The *Matching Value* is the ability of the two actors to anticipate the needs of the other and to "match" these with their own abilities and competencies. The actors thus select the appropriate resources and competencies for the existing needs of the other actor at (a) the *Relationship Layer*, (b) the *Service Layer*, but also (c) the right approach (e.g. inspiration, advice) for finding this appropriate resources and competencies. The aim is to offer the best possible service (high density) with the appropriate interaction at the *Relationship Layer*. This is a prerequisite for the interaction to be continued, for it to function in the best possible way and for the value to be created at the *Service Layer*.

Service Layer

The *Service Value* arises directly within the interaction or during the simultaneous processes of the actors in the value co-creation. It describes how the interaction itself influences the actual service. It arises during the entire process of service provision itself but differs from the underlying objective of the service.

4 Effect of Value in Interaction

The three layers of the *Value in Interaction* and the resulting values are closely linked and influence each other (see Figure 1). Specifically, the *Relationship Value* has a direct influence on the *Matching Value*. If the *Relationship Value* is positive, which is equivalent to one or more previous, successful interactions at the *Relationship Layer*, the actors are willing to provide more detailed information. This contributes to a better matching and thus a higher *Matching Value*. If the service provider is able to create the right offer (high density) together with the customer in co-creation on the basis of the existing matching competences through appropriate interaction (e.g. inspiration, consultation), the requirements for value at the Service Layer are given. This in turn has a positive influence on the *Relationship Layer* through increased trust in the abilities and competencies of the other. If, on the other hand, the demanding actor notices that the competences at the *Matching Layer* of the service provider are not sufficient to achieve the best possible result (low density and low *Matching Value*), this will have a negative influence on the *Service Value* directly (*Matching Value* on the *Service Value*) and indirectly (*Matching Value* on the *Relationship Value* and the latter on the *Service Value*). In addition, the interactions on the *Service Layer* can on the one hand influence the *Relationship Value* positively or negatively and on the other hand be used to further adapt the service in the process to the needs of the actors (*Matching Layer*). If one assumes that interactions always take place when all actors can increase their *Service Value*, then the big difference between *Service Value* and *Relationship Value* is that the *Service Value* must differ meaningfully among the actors. This is because the competences and resources of one actor should each contribute to the *Service Value* of another. An actor thus experiences value precisely because it receives other competences and resources than he already has. The *Relationship Value*, on the other hand, can and must be comparable in many areas in the long term (Fyrberg and Jürriado, 2009).

5 Conclusion and Outlook

In the context of this paper we have pointed out that interaction is the glue between actors. We therefore propose to place interaction at the center of action and to introduce a *Value in Interaction*. This approach offers the opportunity to simplify the design of valuable interactions in IS by actively designing the individual levels of the model. With the *Value in Interaction Model*, we have made service-centric theories from

marketing more applicable to IS research. By this means we implemented Barrett's (2015) recommendation for the development of new theories in IS on the basis of these service-centric theories and will use them ourselves in the future to further simplify the way of designing IS-supported services. First, however, the empirical proof of the theoretically derived model must be provided by further research. Following the DSR research process by Peffers et al. (2007), we have to apply the model to existing services respectively to design several new services (Phase 4: demonstration). These services will be located in as many different contexts as possible. Furthermore, we will have to show the general accuracy of our model in an evaluation (Phase 5: evaluation). To achieve this, we need to make the individual layers and the values they create measurable.

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