

## Chapter 2

# A Concept of a Service Field and its Applications to Create Service Value

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### ABSTRACT

*A new concept of a service field for creating service values is proposed. This concept is analogous to the field theory in physics and corresponds to the “value in use” concept in Service Dominant Logic (SDL). First, the service field is applied to customer choice as an enterprise countermeasure. Then, the service field is applied to service value creation, where it is essential to identify the service field to create high service values. Based on identification of the service field, a service value creation model called the “KIKI model” is proposed and applied to a B-to-B collaboration framework.*

### 1. INTRODUCTION

The importance of service innovation has recently been discussed in various areas. This is because the ratio of service industry in GDP has been increasing due to the expansion of information industry or knowledge industry. Under such circumstances, new concepts related to service science such as Service Dominant Logic (SDL) (Lusch & Vargo, 2006), Persona Marketing (Pruitt & Adlin, 2007) or Service as a theater (Fisk, Grove & John, 2008),

have been proposed. Such concepts emphasize the idea of “value in use”; that is, that service receivers feel the value of provided services is an essential issue. The creation of service value is of key interest to every service business, and it therefore requires extensive investigation.

Previous researches related to service value creation have focused on service quality, as shown in service marketing (Lovelock & Wirtz, 2007), because service quality is a significant measure of service value. Hatakeyama (2004) proposed that service quality depends on the difference between the pre-expectation of a service and the

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after evaluation of provided service. If the after evaluation is better than the pre-expectation, then the customer feels satisfaction and the service quality is high. However, the pre-expectation and the after evaluation depend on human's feeling and it is difficult to formulate this relationship theoretically. Also, context-aware service (Kolari, et al., 2004) is one of the services that aim for a higher service value by considering the situation (time, place, people, cost, etc.).

Generally, the value of a provided service is different depending on the situation (human characteristics, place, time, cost, etc). Even if an identical service is provided, the service value can be different depending on the specific human characteristics involved and the particular situation. The "value in use" concept in SDL, for example, depends on the situation. Also, context-aware service considers the relationship between service value and situation. However, to the best of our knowledge, there is no previous research that offers a theoretical framework for service value creation in which the situation-dependent characteristics of service value are considered.

In this chapter, a concept of a service field in service systems is proposed for creating high service value which depends on the situation. There are two aspects to explain the concept of the service field. The first aspect is an analogy of the field theory in physics such as the gravity field. The products of one brand consist a universal gravitation field and attract the customers. The customer has his own potential, and he will choose the product that maximizes his potential. The second aspect comes from the electro-magnetic field where the electro-magnetic power is determined by the relationship between the charge of an electron and the electro-magnetic field. According to this analogy, the service value can be determined based on the relationship between a service and a service field. In this research, a new mathematical model for service value creation is introduced based on this concept. Further, we

provide an identification method of service field for high service value and the KIKI model for a B to B collaboration framework.

## **2. A CONCEPT OF SERVICE FIELD AND ITS MATHEMATICAL MODEL**

### **2.1. Proposal of a Service Field Related to "Value in Use" Concept**

Lush & Vargo (2006) proposed a new concept of service called Service Dominant Logic (SDL), argued that our economy has shifted from a goods economy to a service economy. The key point of SDL is that its determination of value is different from that of Goods Dominant Logic (GDL). In GDL, the value is determined by the producers, whereas in SDL, the value is determined by the customer on the basis of "value in use." Many service science researchers are examining the SDL concept and looking for ways to maximize human satisfaction by combining it with the concept of "value in use." SDL lends a new viewpoint to service and by extension to goods, which are some of the factors in services provided to customers from the point of SDL. The 'value in use' concept in SDL greatly depends on the contextual situation. In general, the value of a provided service differs depending on the situation (human characteristics, place, time, cost, etc). Even if an identical service is provided, the service value will be different due to the customer's characteristics in that case or to the unique situation.

A concept of service field (Kosaka, Shirahada & Ito, 2011; Kosaka, Zhang & Doan, 2011; Kosaka, Zhang, Dong & Wang, 2012) has been proposed for creating service value depending on the situation, which is deeply related to "value in use." This concept is an analogy of the electro-magnetic field, where electro-magnetic power is determined by the relation between the charge of an electron and the electro-magnetic field.

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