

Value Co-Creation: Transitioning From “Binary Interactions” To “Networked Systems”

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Abstract. The study viewpoint on value co-creation has gradually changed over the past few years from one that solely considers value creation between customers and businesses to one that also takes into account the value creation processes of numerous participants in a socio-economic network system. This shift reflects the essence of value co-creation, i.e., all parties' joint participation and collaborative value creation. This paper follows this research trend and explores the bilateral interactions between firm-firm, customer-customer and firm-customer, and the multiple interactions among all participants in the socio-economic network system. This study compiles domestic and international research results related to value co-creation. In the meantime, it provides an outlook on future research directions. It is anticipated that a thorough examination of these interactions will help better understand the various participants' responsibilities in the value co-creation process and offer insightful advice for future value creation and business model innovation. This research will provide insights for companies and academics to help them achieve continuous innovation and success in the ever-changing business environment.

Keywords: Value co-creation; Service-dominant logic; Service ecosystems; Binary interactions; Networked systems.

1. Introduction

Under the background of increasing business competition, value co-creation has become a buzzword in academic research on corporate business models and consumer participation in corporate innovation activities. Under the initial concept of value co-production, firm-customer value co-creation occurred only in the production domain, and consumers were regarded as a production factor that could help the firm create value [1]. Later, under the service-dominant logic, Vargo et al. produced a value co-creation theory that contends that the consumer, as an operative resource, generates value with the company while interacting with it [2]. Since then, the centre connotation of value co-creation has been formalized and developed in subsequent studies. In recent years, with the emergence of business service ecosystems, the interactions between participants involved in socio-economic activities have become more complex. Researchers' attention has gradually shifted from the initial context of Gu-enterprise dichotomous interaction to the network system made up of socio-economic participants in order to clarify how value is created in the ecosystem. They have attempted to use the theory of value co-creation under the service-dominant logic to address the question of how value is created among the various participants in the socio-economic network system [3].

To better understand how value is created in the ecosystem, researchers' focus has steadily evolved from the basic context of Gu-enterprise dichotomous interaction to the network system composed of socio-economic participants. The question of how value is created among the various actors in the socio-economic network system has been attempted to be answered using the theory of value co-creation under the service-dominant logic. Although academics have previously conducted overview research on the research findings of value co-creation, the majority of articles primarily summarize the pertinent research on value co-creation in the boundaries of the production and consumption fields. For example, Wan et al. put forward and summarized the value co-creation research paradigm in the production field and the consumption field, and review the value co-creation in the consumption field

of the Research Frontiers [4] by analyzing and comparing the evolution process of the theory of value co-creation. Lou et al. noted that the majority of current research on value co-creation concentrates on the three areas of production, consumption, and the virtual brand community [5]. Studies on value co-creation in online brand communities in the production and consumption sectors are among them. In contrast, fewer studies on value co-creation exist from the standpoint of the value co-creation development trend. Consequently, this essay first recounts the development of the theoretical meaning of value co-creation; secondly, in order to sort the domestic and foreign research literature on value co-creation, it combines the trend of gradually changing the research perspective of value co-creation from the binary perspective to the network system perspective; and finally, looks forward to the future research, to provide references to the domestic and international academics in the future research on value co-creation.

2. Evolution of the Meaning of Value Co-creation

The connotation of value co-creation was first articulated by Ramirez from an economic perspective. He pointed out that value can be created by firms bringing consumers into production, i.e., consumers can play the role of producers in the production process and are a source of productivity [1]. At this stage, Ramirez proposed the "co-creation of value," which emphasizes that firms can consider consumers as a kind of production factor resource, and by adding them into the production process of firms, they can produce products that are more likely to satisfy consumers, and thus create value for the firms. Ramirez's current definition of value co-creation does not incorporate the fundamental concept of value co-creation; rather, it only introduces a new paradigm for businesses to adopt in producing value.

Vargo et al. elaborated on the notion of value co-creation under the concept of "service-dominant logic" based on examining social and economic activities at the start of the twenty-first century. The idea that all commercial operations fall under the umbrella of the service economy; that is, services form the basis of trade in commercial activities; and that during service exchange, customers work alongside businesses to jointly produce value [2]. Under the service-led logic, enterprises and customers provide services to each other, and value is created by integrating the resources of both enterprises and consumers. At this point, the fundamental concept of value co-creation has been explicitly proposed and has drawn the attention and approval of numerous researchers.

Subsequently, Vargo et al. indicated that the value co-creation connotations they proposed dissected the value creation process among the direct interactors involved in market-based economic activities mainly from a marketing perspective, ignoring the other stakeholders in the economic activities [6]. As a result, he adds 11 basic propositions to the existing 10 basic propositions outlining the logic of the service-dominant and the meaning of value co-creation, and he suggests the idea of service ecosystems. Vargo et al. argue that a self-adjusting service ecosystem can participate in value co-creation at diverse levels by coordinating resources. This perspective emphasizes that value creation does not only exist between firms and customers but also occurs between economic or social agents. They integrate resources and provide services to each other at different structural levels coordinated by institutional and social norms, highlighting the interaction between participants [7].

3. Research Status of Value Co-creation

This paper compiles and organizes the existing literature domestically and internationally and categorizes it into value co-creation research of binary relationships and value co-creation research of pluralistic relationships in network systems, taking into account the changing trend of previous scholars' perspectives on value co-creation research.

3.1. Research on Value Co-creation in Dualistic Relationships

Value co-creation realized by the interaction between enterprises and customers once became the mainstream of value co-creation research because Vargo et al. concentrated on the dichotomous interaction between enterprises and customers in the connotation of value co-creation under the service-dominant logic at the early stage. Some academics have examined the mechanism of value co-creation in binary partnerships and included it in their research on inter-firm and inter-customer connections.

3.1.1 Value co-creation between enterprises and customers

The main focus of value co-creation research over the years has been on value co-creation realized through interaction between businesses and customers. On the one hand, value co-production is still a large part of how many academics view the interaction between firms and their customers, which mainly explores the mechanism of customers' influence when they participate in the value creation process such as research and development, design, and production of enterprises' products and the impact that value co-production brings to enterprises. Tan Guowei et al. and colleagues conducted an analysis from the standpoint of individual capabilities and discovered that various customers' capabilities have a large beneficial impact on the co-production of value [8]; Franke et al. (2006) analyzed the innovation process within the enterprise and found that innovative ideas originating from consumers reduce the enterprise's investment of time and economic costs in product development and that products co-produced by the enterprise and consumers tend to show high expected returns. Products tend to show high expected returns [9]; Li et al. found that in an e-service environment, the interaction between customers' cognitive resources and the technological resources provided by the enterprise is an important means of realizing value co-creation [10]. However, other academics adhere to the customer-centric reasoning promoted by the enterprise-customer value process. Co-creation of value is mainly determined by the customer's concept, pointing out that the value is not all created by the enterprise and the customer but also includes a part of the customer's creation of value; they will engage in this type of value-creating action, which is referred to as the customer's original value creation [11]. consumer-created value is described by Li Yao et al. as the value-creation process that is carried out independently by the consumer without the enterprise's involvement during the customer consumption stage. The phenomenon of customer-created value has been described as two types: the first type is that consumers form a better consumption experience by reposting content created by others, and the second type is that consumers create further experiential value based on the use of a product in the context of their lives and needs [12].

3.1.2 Research on inter-firm value co-creation

In the business-to-business dichotomy, co-creation of value refers to one organization working with other independent organizations to accomplish a specific objective. Its manifestations include cooperation and innovation with other enterprises due to the limitations of its resources and capabilities, outsourcing a certain business within the enterprise to a third-party enterprise, etc. [13]. In this process, enterprises mainly provide services to a certain party to realize value co-creation. Research in this area currently focuses on the impact of inter-firm cooperation and outsourcing models on firm performance [14]. At the same time, this mode of cooperation between individual enterprises has a certain degree of universality for enterprises, i.e., an enterprise can cooperate with related individual enterprises in many aspects. Therefore, scholars' theoretical discussions have also laid the foundation for researching win-win cooperation among enterprises in some business ecosystems.

3.1.3 Research on value co-creation among customers

Scholars' study towards value co-creation among customers mainly focuses on the experiential value created by customers through interactive behaviors such as communicating with each other and sharing experiences. According to the social identity theory, Li et al. pointed out that customers' communication and interaction with others online is a social exchange process. Customers with more

knowledge, skills, and other resources can obtain the recognition and support of others through the provision of information and the publication of more professional remarks in the process of communication and interaction with other customers, which in turn creates a good experience. Through learning and understanding, the receiver of the information can be the recipient of the information and can self-improve while obtaining the required information. The value co-creation among customers is thus realized [15]. By constructing a structural equation model, Shen et al. found that customer interaction and communication about products and interpersonal behaviors significantly positively affect customers' emotional and social experience value. Customers are more likely to contribute to the process of value creation in the company's production area when they have a positive experience, which promotes a win-win scenario for both customers and businesses [16].

3.2. Research on Value Co-creation in Networked Systems

With Vargo and other scholars expanding value co-creation theoretically under the binary relationship proposed at the beginning of the study to the socio-economic network system, some scholars extend based on the existing research and conduct a more macroscopic study towards value co-creation. The following two features primarily reflect the research done in this field.

3.2.1 Research on value co-creation mechanisms in platform business models

The growth of the digital economy has removed time and place constraints from customer and business interactions, so many enterprises are committed to creating an Internet platform through which they interact with customers and other stakeholders and create value. In this environment, the online platform may be built by the enterprise integrating internal resources and resources of third-party technology providers, and the main participants in the platform include the enterprise, customers, service providers, channel providers and other stakeholders. Therefore, the service exchange and resource integration in the platform are promoted by multiple participants, which is a value co-creation activity among multiple relationships in the network system. Qiao et al. point out that the value co-creation mechanism in the platform business model will be the focus of attention of enterprises and academia in the future by combing the research results on enterprise business model innovation in recent years [17]; Gawer's study shows that in a looser platform ecosystem, the resource integration behavior among stakeholders is mainly governed by the rules within the platform and the value provided by it. Proposition constraints, thus ensuring that all participants benefit [18].

3.2.2 Research on value co-creation in service ecosystems

With Vargo et al. further deepening the theory of value co-creation in service ecosystems, the research topic on service ecosystems has become the focus of scholars at home and abroad. A service ecosystem is made up of various social and economic entities connected by appropriate institutions and value co-creation through service exchange. It is a reasonably autonomous and self-regulating system [19]. According to Vargo et al., value is created through integration, and service exchange-related entities in service ecosystems that are constrained by certain institutions are involved in value creation at various levels of aggregation. Within certain institutional limits, they participate in value creation at various levels of aggregation. Value is generated by the integration of resources, which are provided by a number of sources, including a variety of private and public players with a market-oriented mindset [7]. The majority of current research on service ecosystems concentrates on examining the fundamental workings of these systems, the factors that influence value co-creation within these systems, and case studies of relevant businesses. Research results in other aspects, such as Linghu et al. analyze the interactive structure of service ecosystems from the micro, meso and macro levels [20]; Chen et al. discuss how enterprises should effectively manage service quality from the perspective of service ecosystems and point out that service ecosystems have the roles of stabilization, constraints, integration and innovation, and that these characteristics help service ecosystems in which All parties in the service ecosystem to realize synergistic development [21].

4. Conclusion

Through literature combing and analysis, this paper finds that the current mainstream scholars have two levels of understanding of the core connotation of value co-creation; scholars whose research focuses on value creation activities in the area of enterprise production still understand value co-creation in the scope of value co-production, while some scholars who support the co-creation of value by socio-economic participants recognize the connotation of value co-creation under the service logic domination; Secondly, the paper combines the development trend of scholars' research perspective on value co-creation gradually shifting from the binary perspective to the perspective of complex socio-economic network system, and compares the past study on value co-creation, in which scholars studying value co-creation in binary relationship mainly focus on the aspects of how to create value between customers and enterprises, enterprises and enterprises, and customers and customers and the impacts brought by value co-creation behaviors, while those scholars studying the value co-creation in network system focus on the more macroscopic aspects of value co-creation in network system. Scholars studying value co-creation in network systems have analyzed the mechanism of value co-creation from a more macro level of business model innovation as well as service ecosystem. In general, however, most scholars have gradually realized the importance of value co-creation among multiple participants in social and economic network system under the development of the digital economy. It will become a novel research paradigm to explore the value co-creation mechanism in business model innovation of enterprises and service ecosystem.

Based on the above analysis, this paper proposes the research outlook as follows.

First, the dichotomous relationship explores the value co-creation between firms and internal employees and between firms' employees and customers. Existing literature on value co-creation under the duality perspective focuses mainly on the firm and customer levels, ignoring the value created by the firm's employees. First, as an important constituent of the enterprise, employees' value-creating behaviors and results often help solve the existing problems. Secondly, employees can interact directly with customers, the value created by customers will be affected by the enterprise employees, and the customer's brand impression of an enterprise will also be indirectly affected by the experience of their interaction with the enterprise employees. Currently, scholars have studied the civic behavior of corporate employees from the concept of value co-creation; future research can further extend the research content on this basis, define the value co-creation behavior and value created by employees within the enterprise, and analyze the influencing factors of the value co-creation behavior of the employees to formulate a reasonable strategy to motivate the employees, customers, and the enterprise to co-create value.

Secondly, research on value co-creation in indirect interaction between enterprises and customers. Research has emphasized value creation is in the interaction between customers and enterprises. Still, the interaction between enterprises and customers can be divided into direct and indirect interactions, such as customers receiving the enterprise's services when purchasing the product belonging to the direct interaction between the enterprise and the customer. In contrast, customers browse the product advertisement released by the enterprise before purchasing the product. The diversified product use after obtaining the product belongs to the indirect interaction between the enterprise and the customer. Interaction. Most current studies have mainly explored value co-creation in the direct interaction between enterprises and customers, and they need to pay more attention to value co-creation in their indirect interaction. Therefore, it is necessary for future research to explore the deeper forms of value co-creation between firms and customers in indirect interactions and the factors that influence it to enrich the research on value co-creation.

Thirdly, the realization mechanism of value co-creation is clarified based on clarifying participating subjects of value co-creation in service ecosystems and their interrelationships. Unlike the value co-creation realized by two participants in the binary interaction process, value creation in service ecosystems is jointly accomplished by multiple different types of participants in the dynamic evolution of the ecosystem. However, the existing literature needs to sufficiently analyze and explore the roles played by each subject and the interrelationships among them in the continuous evolution

of service ecosystems. Therefore, subsequent research can be based on the perspective of the synergistic evolution of the subjects in the service ecosystem, construct a game model to discuss the roles and functions played by the subjects and identify value co-creation realization mechanism in the service ecosystem on this basis, to make the theoretical study on value co-creation more complete and have stronger practical reference significance.

Authors Contribution

All the authors contributed equally, and their names were listed alphabetically.

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