



# Dialogic co-creation and service innovation performance in high-tech companies☆



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## ABSTRACT

*Purpose:* This study aims to investigate how customer co-creation affects the performance of service innovation through the operant resources.

*Design/methodology/approach:* This study uses survey methodology to examine a research model with six hypotheses. Data from 149 high-tech firms are analyzed using structural equation modeling.

*Findings:* The dialogic co-creation affects customer relationship strength (relational resource), valuation of knowledge (informational resource), and capability of customization (organizational resource), facilitating service innovation.

*Research limitations/implications:* Findings offer novel insights into how service innovation co-creation takes place within a dialogic context leading to organizational changes. The results clarify the influences of operant resources on service innovation and indicate that companies should emphasize dialogic communication with customer in developing service innovation.

*Practical implications:* Managers have to understand that co-creation is an effective approach in business to stretch business boundaries, and that customers are the crucial external party that co-creates. According to the mutual influences of co-creation, businesses not only can exploit knowledge from customers but also strengthen the relationship bond with them. For the investment programs on service innovation of businesses, managers should allocate budget to relation-specific investments and knowledge acquisition with customers.

*Originality/value:* This research model, guided by the R-A theory and S-D logic, might serve as a template for scholars exploring issues of service innovation. Findings of this study identify important implications that benefit service innovation research in several ways.

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## 1. Introduction

Because of the gradually emerging limits of product-focused innovation (Chesbrough, 2011), manufacturing industries are emphasizing service innovation (Navarro, Andreu, & Cervera, 2014). According to the service-dominant view, service innovation relies more on operant resources than on operand resources (Chen, Tsou, & Huang, 2009). In particular, customers are the human resources from outside organizations; companies can engage in co-creation with customers to generate value (Lusch & Vargo, 2006; Navarro et al., 2014). Although scholars investigate customer co-creation in service innovation (e.g., Melton & Hartline, 2010), the extant literature may demonstrate bias because of the one-way communication scholars use in addressing customers' knowledge acquisition. Furthermore, few empirical studies focus on

how to leverage operant resources to facilitate service innovation, especially in the high-tech manufacturing industry.

Accordingly, the study aims to investigate the relationships among operant resources and service innovation. The study draws on service-dominant (S-D) logic and resource-advantage (R-A) theory, which highlight four types of operant resources to develop a research model (Hunt, 2004; Lusch & Vargo, 2006). To reflect the customers' role as the primary operant resource in S-D logic (Vargo & Lusch, 2004), the research model describes human resources (i.e., dialogic co-creation with customers) and those resources' relationships with three other operant resources (i.e., relational, informational, and organizational resources), which in turn affect service innovation.

The study employs survey methodology to collect data from the high-tech manufacturing industry and analyzes data through structural equation modeling. The study identifies the antecedents of successful service innovation and advances the current understanding of customer co-creation. The new construct, dialogical co-creation, emphasizes that dialogue is the essence of co-creation. Finally, the study gives insights into the relationships among operant resources and service innovation by delineating a framework that draws on S-D logic and R-A theory.

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## 2. Theoretical background and hypotheses

### 2.1. R-A theory and service innovation

The R-A theory highlights the positive relationship between operant resources and a company's competitive advantage (Hunt & Morgan, 1996). In practice, businesses find that service innovation can provide market-leading offerings to obtain advantages (Storey & Kahn, 2010). Using the R-A theory, researchers group resources into two categories: operand resources (i.e., physical, financial, and legal) and operant resources (i.e., human, relational, informational, and organizational) (Hunt, 2004). According to R-A theory and S-D logic, operand resources are the fundamental source of a competitive advantage (Chen et al., 2009). The degree of service innovation in companies depends on the application of their operand resources (Michel, Brown, & Gallan, 2008). Therefore, enhancing operand resources may facilitate service innovation. However, few empirical studies focus on the relationships among operand resources regarding service innovation.

The study focuses on operand resources. Customers are a primary operand resource in the S-D logic (Vargo & Lusch, 2004). Skillful and knowledgeable customers are human resources acting upon other operand resources (Lusch, Vargo, & O'Brien, 2007). Therefore, the study explores the effects of human resources acting upon relational, informational, and organizational resources in service innovation. The study treats customers as the external source of human resources, and leverages customers through co-creation. Furthermore, the manipulations of three other operand resources also affect customers. The study manipulates relational resources as relationships with customers, informational resources as knowledge valuation of customers' input, and organizational resources as the customizing capability.

### 2.2. Customer co-creation and co-creation as dialogue

Co-creation is the central concept in the S-D logic, which asserts that the customer is always a co-creator of value (Lusch & Vargo, 2006). From development to production and commercialization, customers participate in co-creation (Melton & Hartline, 2010). Previous studies demonstrate that customer co-creation is beneficial to service innovation (e.g., Melton & Hartline, 2010). However, researchers pay little attention to dialogue, an important building block of co-creation that highlights mutual influence and understanding, rather than one-way listening (Prahalad & Ramaswamy, 2004).

The company and customer can co-create value at multiple interaction points. Company and customer's mutual influence allows a dialogue and hence co-creation (Grönroos & Voima, 2013). Prahalad and Ramaswamy (2004) emphasize that dialogue refers to learning and communication between companies and customers – two equal problem solvers – rather than to merely listening to customers. A dialogue needs both parties' participation and communication to generate common consensus about what the two parties can do with and for each other (Grönroos, 2004). The mutual communication and engagement between parties in an interesting issue are the features of dialogic co-creation. Accordingly, the study identifies co-creation as a dialogic process.

### 2.3. Dialogic co-creation with customers

Dialogic co-creation with customers enhances customers' understanding of new services and may implicitly contribute to customers' sense of the company's mission. Dialoguing and socially interacting with customers can help customers bond and identify with companies (Karpen, Bove, & Lukas, 2012). Because customers' perceptions of relationships are holistic and cumulative, exchanging information and interactions in the collaboration process is an important part of customers' perceptions (Grönroos, 2004). Alam (2006) further claims

that the participation of potential customers can improve the relationship between potential customers and companies.

**H1.** Dialogic co-creation with customers positively affects the company–customer relationship.

Customers' knowledge may assist companies in developing solutions for problems; therefore, customers can act as knowledge providers and offer feedback on specific service issues. To enter into a dialogue, one party must not only benefit from existing knowledge, but also participate in creating new knowledge to address problems and opportunities (Ballantyne, 2004). Therefore, dialogic co-creation with customers during service innovation is an important source of organizational knowledge (Blazevic & Lievens, 2008).

**H2.** Dialogic co-creation with customers positively affects knowledge valuation.

The ultimate goal of customer participation in companies' innovation activities is to satisfy customers' needs. Offering custom products and services is an effective approach to meeting customers' needs (Xie, Bagozzi, & Troye, 2008). Businesses can adopt an engagement strategy emphasizing co-creation to support customizing capability (Wind & Rangaswamy, 2001; Zhang, Ye, Chen, & Wang, 2011). Customization is a buyer-centric viewpoint that incorporates customers' opinions into development processes before manufacturing (Wind & Rangaswamy, 2001). Zhang and Chen (2008) show that involving customers in value co-creation assists companies in developing customization. Interaction with customers facilitates the company's capability to customize services.

**H3.** Dialogic co-creation with customers positively affects customizing capability.

### 2.4. Company–customer relationship

A company that builds good relationships with customers reinforces positive attitudes toward the company, resulting in higher repurchases and recommendations (Grisaffe & Nguyen, 2011; Palmatier, Dant, Grewal, & Evans, 2006). According to the diffusion of innovations theory (Rogers, 2003), these loyal customers may be potential innovators or early adopters of new service offerings. Therefore, maintaining a good relationship with customers is a critical operand resource for facilitating service innovation's success. Relationship marketing literature provides evidence that co-creation with customers is useful for service innovation. Building better relationships with customers leads to attitudinal and behavioral loyalty, which may improve new services (Mitrega & Katrichis, 2010). Lin, Chen, and Chiu (2010) suggest that maintaining close partnerships with customers positively affects service innovation. Companies with stronger customer relationships can learn from the market more effectively than their competitors, creating superior performance (Adjei, Griffith, & Noble, 2009).

**H4a.** Company–customer relationship positively affects service innovation's performance perception.

**H4b.** Company–customer relationship positively affects service innovation's comparative performance.

### 2.5. Knowledge valuation

Valuable knowledge with rareness, inimitability, and non-substitutability is a crucial source of innovation and competitive advantage (Grant, 1996; Yang, 2010). Learning about customers' preferences and capturing customer knowledge can facilitate innovation outcomes (Blazevic & Lievens, 2008). Innovation relies on knowledge and, in particular, tacit knowledge (Gloet & Terziovski, 2004). Knowledge is helpful for generating innovative thoughts, innovation, and creativity (Borghini,

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