JUNGLE OF "CO"

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Abstract

Purpose – In this paper we examine the concepts used to describe the collaboration between different actors (e.g. customer and service provider) in the context of service innovation. Today, several concepts exist related to this phenomenon that all include the prefix "co" (such as co-creation, co-production and co-design). These "co-concepts" are often mixed up and used in a confusing manner in both the academic and managerial discussions. The idea for this paper stems from the experiences of three researchers who all examine collaboration in the context of service innovation, but come from different disciplinary backgrounds and have repeatedly faced the challenge related to the ambiguity of the terminology. Hence, the purpose of this paper is to bring forth the existing confusion related to the "co-concepts", examine their background and provide clarifications for the used terminology in the context of collaborative service innovation.

Design/Methodology/approach – The paper is conceptual in its nature. It is based on a literature review that examines how the "co-concepts", have been characterized in the marketing, design, innovation and human computer interaction literature to date in the context of collaborative service innovation. We highlight the existing confusion around the terminology and examine the differences and similarities of the ways the concepts are used in different discussions.

Findings – The paper gives an overview of the confusion related to the "co-concepts" in service innovation context and provides clarifications for the used terminology by discussing how the concepts differ from and intersect with each other.

Research limitations/implications – The paper provides clarifications for the used terminology in both academic and managerial discussion by gathering different definitions of the "co-concepts" into a single paper. This helps researchers understand the different background and various meanings of the concepts.

Practical implications – The paper facilitates multidisciplinary service innovation by mapping the concepts of various fields to a common view.

Originality/value – This is one of the first papers gathering all these concepts in one research paper and discussing about them systematically.

Key words (max 5) – Co-creation, co-production, co-design

Paper type – Conceptual paper

Introduction

Well over ten years ago Prahalad and Ramaswamy (2000, 2004) first introduced the concept of co-creation and defined it as joint creation of value by the company and the customer, which allows customers to co-construct the service experience to their own context. Since then, the idea of co-creation has inspired many researchers from various scientific backgrounds, and during this time the meaning of the concept has gotten many new nuances. During the past decade the scientific discussion around the related concepts of co-production and co-design has also increased enormously.

Nowadays, these "co-concepts" are widely used in several fields without a real consensus of their scope and definition. The need and idea for this paper stems from the experiences of three researchers who are all interested in collaboration in the context of service innovation, but come from different disciplinary backgrounds and have repeatedly faced the challenge related to the ambiguity of the terminology. Within one scientific discussion, the researchers may have shared understanding of the meaning of different co-concepts, but in multidisciplinary collaboration researchers find themselves in a jungle of various definitions and nuances of the same concepts. To date, there are only a few papers that address this confusion around the concepts. For example, in the context of design and design research, Mattelmäki and Sleeswijk Visser (2011) have made an effort to clarify the tangled nature of the terms co-design and co-creation and Saarijärvi, Kannan and Kuusela (2013) have focus on examining the different facets of the value co-creation concept in marketing and management literature.

Hence, the purpose of this paper is to bring forth the existing confusion related to the "co-concepts" and examine the different interpretations and meanings of the concepts in different scientific discussion. As a starting point for our work, we conducted a literature search using Scopus database for the three co-concepts: co-creation, co-design and co-production. The search was restricted to the following fields: computer science, engineering, business, social sciences, decision sciences, psychology, economics, health professions and multidisciplinary, and it included papers published between 2000 and 2012. Altogether over 4000 papers were found – co-design (2707), co-creation (878) and co-production (737), which highlights the vast use of these concepts in the academic literature (Figure 1).
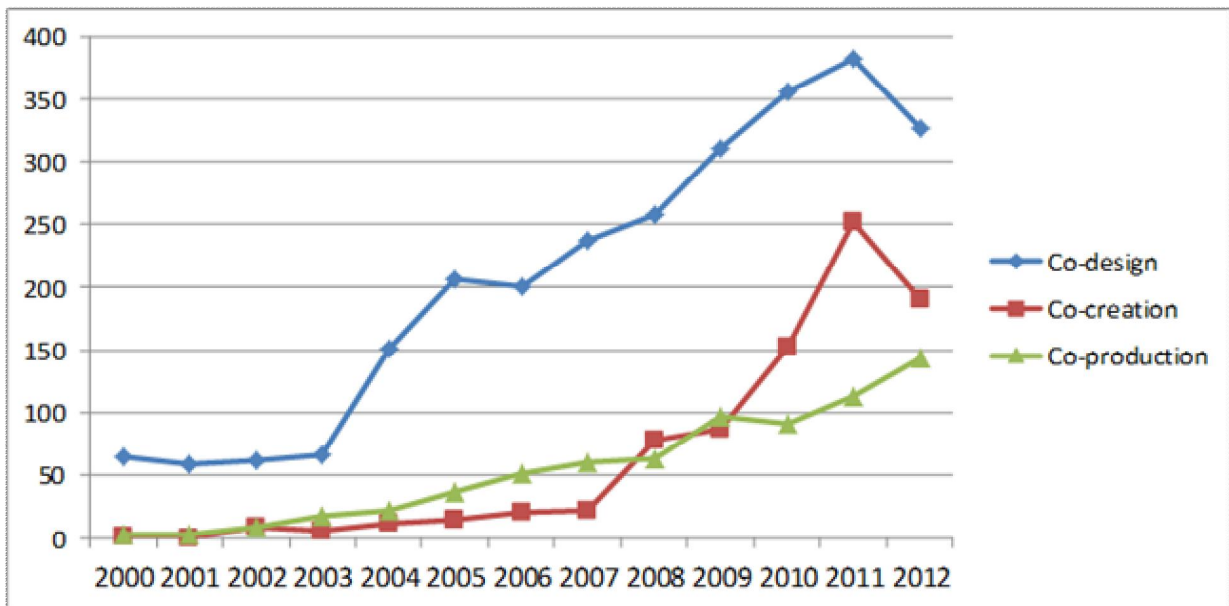
Figure 1. Amount of publications related to the "co-concepts". Source: Sample of over 4000 papers between 2000-2012 retrieved from Scopus February 2013.

As we will demonstrate, the "co-concepts" are used in very varying ways in different discussions. In this paper, we especially focus on how the terms are used in different scientific discussions by first going through varying perspectives on the co-concepts in the literature related to new product development (NPD), design research and service-dominant (S-D) logic discussions. Based on this overview, we analyze how the meaning of the terms depends based on the underlying worldview, i.e. how they concepts are used differently under a more goods-dominant orientation or more service-dominant orientation.

Co-concepts in different scientific discussions

In this chapter we examine how the concepts of co-creation, co-design and co-production are conceptualized and defined in different scientific discussion. It is not always easy to draw clear borderlines to the scientific discussions and we are not claiming that our classification is all-inclusive or the only one possible. We have, however, collected three different viewpoints that address the co-concept and see their meanings and relationships differently. We take closer look on the use and meaning of the co-concepts in scientific discussions related to new product development (NPD), design research and service-dominant (S-D) logic.
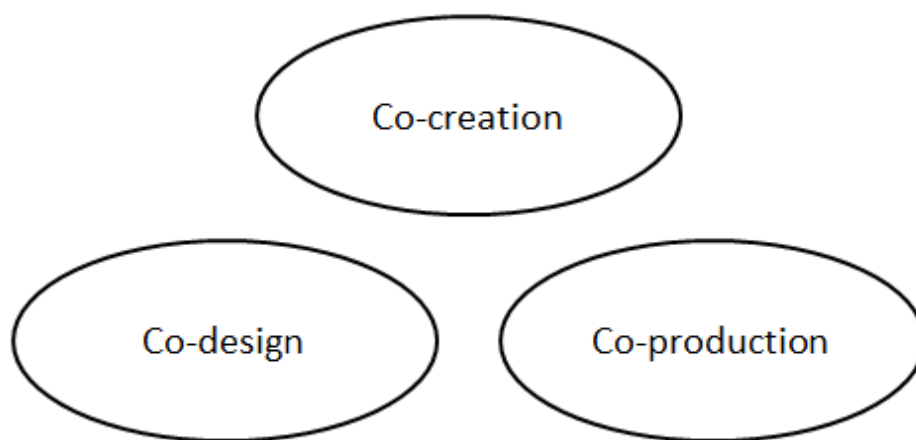

Figure 2. The co-concepts under study.

New Product Development (NPD)

In the scientific discussion related to new product development (NPD), the term customer co-creation is used as a general concept that refers to company-customer interaction, where customers take actively part in the design or development process of an offering (O'Hern and Rindfleisch, 2009, Hoyer et al. 2010, Weber 2011). This desire of consumers to play a greater role in the process of value creation is seen as an outcome of the increased consumer empowerment (Hoyer et al. 2010). Companies value consumers as sources of innovation and involve them in co-creation activities such as the generation, design, refinement, and testing of ideas and new product concepts (Füller 2010). Hence, co-creation is considered as an important manifestation of customer engagement behaviour (van Doorn et al. 2010).

In a more specific stream of research related to mass customization, the term co-design has been used to refer to a more limited perspective, meaning that users define, configure or modify their individual solutions from a list of options and components. Research on mass customization addresses different issues around developing, producing, and selling individualized products and services for rather large customer segments. In this context, co-design means customer collaboration that allows them "to express their product requirements and carry out product realization processes by mapping the requirements into the physical domain of the product" (Piller et al. 2005). Mass customization is also referred to as a mode of co-production, since customers take part in the production of a good or service and adapt it into their own purposes (Franke and Piller 2003, Weber 2011).
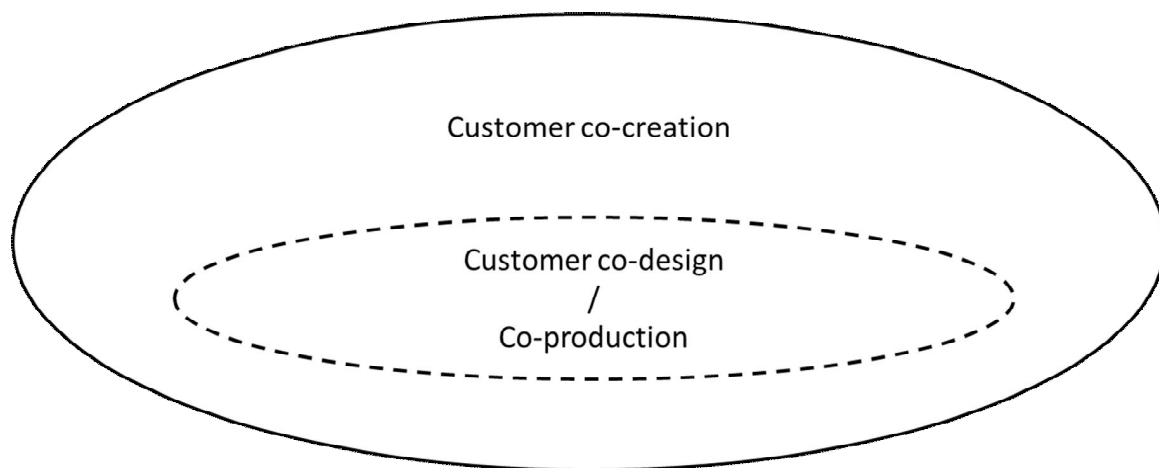

Figure 3. In new product development (NPD) discussion, co-creation is considered as an important manifestation of customer engagement behaviour.

Design research

In design related research, the term "co-creation" is associated with creative processes aiming at creating something new: new idea, new products, new services, new digital content etc. Co-creative activities combine the efforts of different actors, i.e. two or more people, in the process of collective creativity (Sanders and Stappers 2008). Much of design literature has explored co-creation especially in the context of creating new ideas and concepts which can then be realized in new products and services, emphasizing the role of design professionals in the process. However, there is increasing body of research discussing co-creation in the context of collaborative creativity enabled by digital content creation platforms, virtual worlds etc. which provide people with tools to co-create and share rich multimodal content with each other

(Kohler et al. 2011). In this context, the role of the designer is more to (co-)create platforms allowing co-creation experiences.

On the other hand, co-design is used for describing activities where people participate in design activities together (Mattelmäki and Sleeswijk Visser 2011). Co-design may be seen to happen when more than one designers work together in a collaborative way (Fuh and Li 2005), but it often emphasizes the participation of users or other stakeholders in the design process, especially collaboration between designers and non-designers (Sanders and Stappers 2008; Binder and Brandt 2008; Zimmerman et al. 2011). However, as the focus is usually on design practice, the role of the designer in the process is important in inviting the representatives of "users" to utilize their competence, experiences and creativity in the design process.

The relationship between co-creation and co-design is not straightforward. Some authors see co-creation as a holistic mindset of creating new ideas or artefacts and co-design as specific events, such as workshops that are used during the creative process (Sanders and Stappers 2008, see Figure 3).

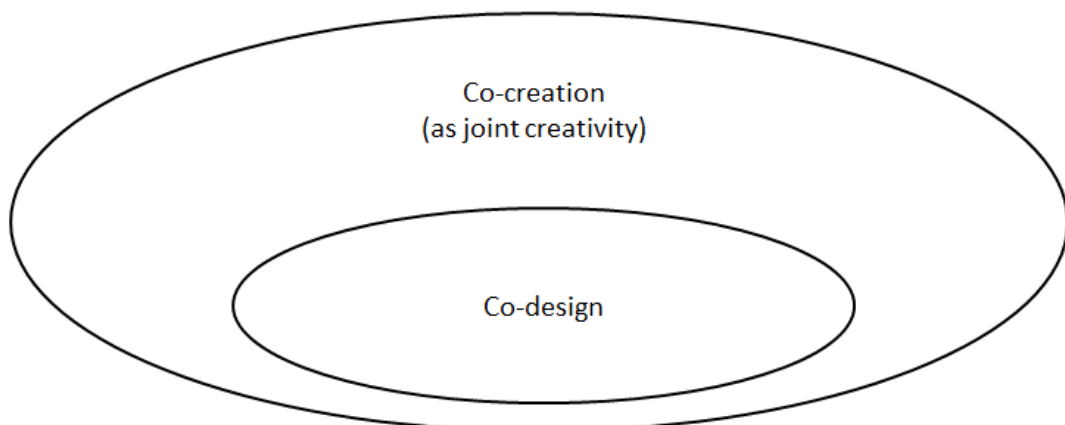**Figure 4. In design research co-creation and co-design are concepts related to the creative process.**

Others see co-creative activities as creative periods taking place during the process of co-design (Mattelmäki and Sleeswijk Visser 2011), and co-design as a process where many methods can be used, including co-creation for creating new ideas and solutions (van der Lugt et al. 2009). This is illustrated in Figure 4.
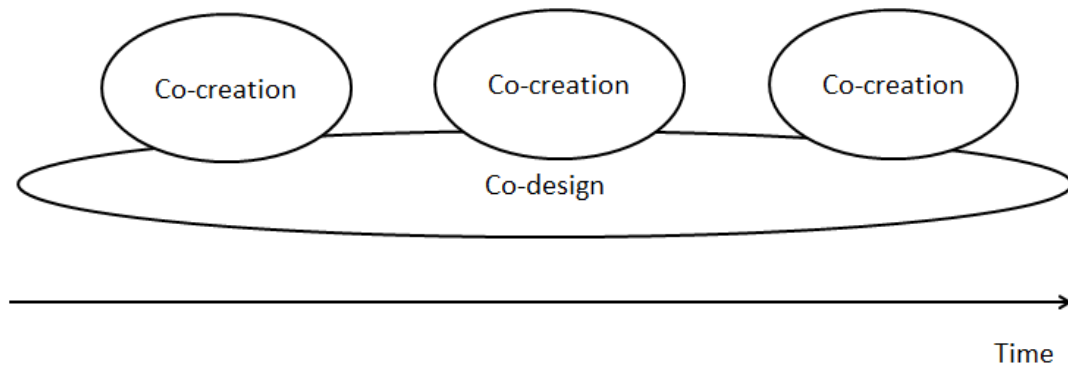
Figure 5. Co-design can also be seen as larger process including smaller co-creation activities.

Co-design in design research starts with the assumption that actors in different roles can contribute to design when they are valued and given the possibility (Mattelmäki and Sleeswijk Visser 2011). Co-design is a process and tools of collaborative engagement in design exploration, envisioning and solution development, whereas co-creation is a temporary act of exchanging ideas, experiences and expertise (Mattelmäki and Sleeswijk Visser 2011). The term co-production is not typically used in design research.

Service-Dominant logic

The service-dominant (S-D) logic calls for an alternative logic for understanding market exchange. It is a logic which abandons the company-centric view that has been dominating the field of marketing for the past 100 years, and brings the customer as an endogenous participant in the process of value-co creation. In S-D perspective value co-creation is built on service provision, rather than on goods production (Lusch, Vargo and Wessels 2008).

In S-D logic literature the concept of co-creation has a central position. However, its meaning differs from the discussions described earlier. In S-D logic the term co-creation is always related to concept of value (Vargo and Lusch 2006, 2011). Value in S-D logic is seen derived and determined in use, rather than in exchange (Vargo et al. 2008). In other words, value is seen as something that emerges as a person uses or applies a resource provided to him/her by somebody else and not as something that is embedded in products through the production activities of companies. As we are dependent on others for providing resources, nobody can create value on their own. Therefore, "value is always co-created, jointly and reciprocally, in interactions among providers and beneficiaries through the integration of resources and application of competences" (Vargo et al. 2008).

In the seminal S-D logic article by Vargo and Lusch (2004) the term co-production was used, when explaining the collaborative nature of value creation. The term was, however, changed as soon as possible to co-creation (Vargo and Lusch 2006), because the connotations of the word "production" led to confusions, as the term referred too much on the traditional firm-centric mindset and making units of outputs (Vargo and Lusch 2008). Though the term co-creation was pinned to the concept of value co-creation, the term co-production still has its place in the S-D logic discussion.

In S-D logic co-production is seen as a component of co-creation of value, which captures participation in the development of the core offering itself (Vargo and Lusch 2008). It represents the joint activities of the firm and the customer (or other actors) in the creation of the firm output (Vargo 2008). It can occur through shared innovativeness, co-design or shared production of related products and it can occur with any parties in the value network (Lusch and Vargo 2006).
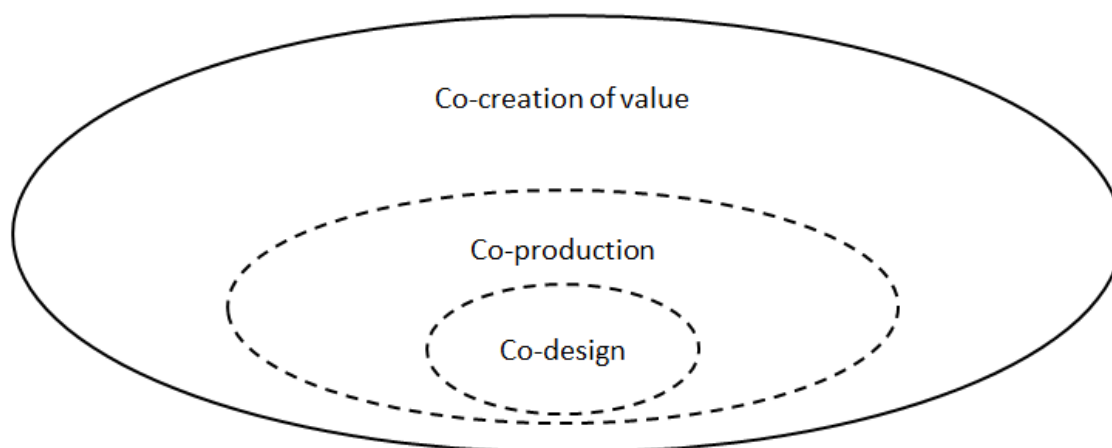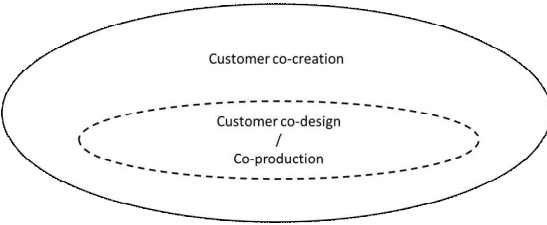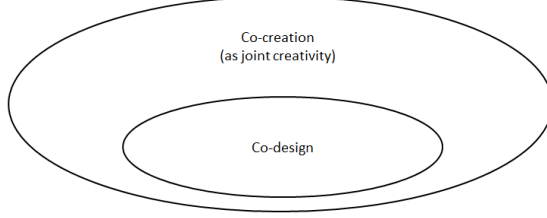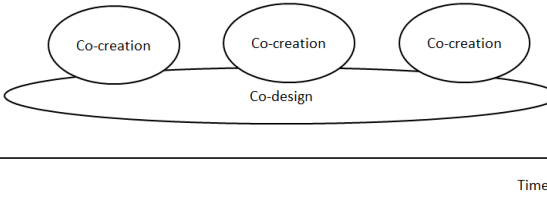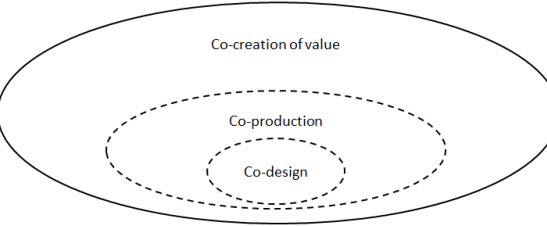
Figure 6. S-D logic view on co-creation (of value), co-production and co-design.

Involvement in co-production is optional and can vary from none at all to extensive activities by the customer or user (Vargo and Lusch 2008). Customers choosing to contribute to the firm's offering through co-production, co-create value in doing so as well, but based on a different proposition from the firm, that of engagement and community perhaps, and create a different value from realization of that proposition (Ng, Smith and Vargo 2012). In short, there are two nested processes co-production, and value co-creation, with the latter superordinate to the former (Vargo 2008).

Discussion

As apparent from the overview, the concepts of co-creation, co-design and co-production are widely used with several nuances in their focus and meaning in the academic discussions stemming from different origins (Table 1).

Table 1. Overview of the meanings of the "co-concepts" in different scientific discussions.

Scientific discussion	View on "co-concepts"	Definitions/explanations
New product development (NPD)	Customer co-creation / Customer co-design / Co-production	Customer co-creation is the process where companies actively engage with the customers to jointly perform innovation activities (Hoyer et al. 2010, Weber 2011). Co-design and co-production refer to mass customization as a specific mechanism of co-creation (Piller et al. 2005).
Design research	Co-creation (as joint creativity) / Co-design	Co-creation is a holistic mindset of creating new ideas or artefacts collectively. Co-design refers to the specific events of co-creation. (Sanders and Stappers 2008)
	Co-creation / Co-creation / Co-creation / Co-design / Time	Co-design refers to a process and tools of collaborative engagement during the design process. Co-creation refers to temporary exchange of ideas, experiences and expertise in different phases of the co-design process. (see e.g. Mattelmäki and Sleeswijk Visser 2011)
Service-dominant logic	Co-creation of value / Co-production / Co-design	Co-production (creation of firm output) and value co-creation (customer-determined and co-created benefit), are embedded processes of which the latter superordinates to the former (Vargo 2008). In addition, co-production can occur through co-design (Lusch and Vargo 2006).

One reason for the numerous perspectives lies in the difference of the underlying worldview that dominates these research fields. In other words there is an ongoing paradigm shift from company/producer-centric goods-dominant (G-D) logic to service-dominant (S-D) logic, which the different discussions reflect.

These two orientations differ in several ways. G-D logic is grounded in traditional view of economic exchange and value creation, where tangible products are seen as having the primary position and services are conceptualized either as add-ons, residual or special type of intangible products (Vargo and Akaka 2009). S-D logic on the other hand views service as a central to economic exchange and value creation (Vargo and Lusch 2004). The singular term *service* is defined as the application of specialized competences (such as knowledge and skills) for the benefit of another. Hence, it focuses on the processes of serving rather than on the form of output.

G-D logic and S-D logic also differ in terms of how the roles of the actors are seen in terms of value creation. In G-D logic, value is seen as something that can be embedded in the outputs of the provider's production process (Vargo and Lusch 2004). Hence, producer is viewed as the creator of value and consumer as its destroyer (Vargo and Lusch 2011). According to the S-D logic, value is always manifested in the context of the beneficiary (e.g. the customer) through integration and use of resources. The contextual nature of value suggests that what companies provide should not be understood in terms of outputs with value, but rather as inputs and resources in the value co-creation process, where all actors participate as equal resource integrating and service providing entities (Vargo and Lusch 2011, Vargo and Akaka 2012).

products vs. services
→ focus on tangible and intangible outputs

service
→ focus on process of serving either directly and indirectly through a service vehicle (e.g. product)

producer vs. consumer
→ producer as creator of value and consumer as destroyer of value

actor
→ all actors are equal resources integrating, service providing entities in the process of value co-creation

Goods-dominant (G-D) logic

Service-dominant (S-D) logic

Figure 7. Differences in goods-dominant (G-D) logic and service-dominant (S-D) logic.

The stronger G-D logic worldview is visible in the new product development discussion, where the focus is in the development of firm outputs (whether products and services) and the view on co-creation as customer engagement method to the firm's activities. In the design research discussion the focus is also more on outputs that are designed in a collaborative creative process. S-D logic discussion obviously reflects more the service-centered orientation and emphasizes co-creation of value which might or might not include co-production of the firm offering.

Conclusions

This article is a conceptual paper to open the discussion about co-concepts in multidisciplinary context, especially service innovation that relates to the discussions of new product and service development, design research and service-dominant logic. The paper presents some differences in background thinking and various definitions of the concepts.

The most notable difference in using the term co-creation is on what is seen as the aim of the co-creation process i.e. what is co-created. Some talk about *co-creation of services and products*, when the term refers to collaborative creativity of different actors taking part in sharing ideas and jointly making a new solution in a form of tangible or intangible output. In marketing and management literature, *co-creation of value* has become a key concept in understanding the logic of exchange and business in general (Vargo & Lusch 2011, Saarijärvi et al. 2013). Another difference lies in the actors of co-creation i.e. who co-creates and who leads the process. In *customer co-creation* there is typically a company who decides to engage customers in its innovation process, whereas *value co-creation* views all actors as equal contributors in the process of value co-creation.

The different co-concepts have already become stable within some scientific discussions, although they may still be defined vaguely. Since there are differences in background thinking and tradition of different fields, it is not realistic to demand common definitions and ways to use the concepts within all fields of research. More important is that the researchers clarify the terms they use and prefer longer formulations, such as *customer co-creation* and *co-creation of value* instead of using the term *co-creation* without further specifications. Exact definitions of the concepts and their background are essential especially in multidisciplinary collaboration to avoid the confusion among different researchers.

Acknowledgements

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