Models of co-creation

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Abstract

This paper aims to give an overview of the existing models of co-creation and create meta-models from these existing ones. The existing models were found in academic and popular or business publications. A total of 50 models was analysed and clustered and used to create 4 meta-models of co-creation. These meta-models depict the 'joint space of co-creation', 'the co-creation spectrum', 'the co-creation types' and 'the co-creation steps'. They form a framework to classify existing research as well as define boundaries for upcoming projects. These meta-models should contribute to the clarity, understanding and application of co-creation.

KEYWORDS: co-creation, service design, innovation, model, visual representation, framework

Introduction

Co-creation is a term that found its way into our daily design and marketing vocabulary. Others, outside the field of design and marketing, have also started to use it. Now different people, from different fields, use it in different ways. This does not add to the clarity of the, still young but maturing, concept. Therefore many have tried to capture or structure co-creation in a model or framework and to subsequently visualize it. These visualizations are powerful tools for understanding because they are uniform and show connections and dependencies instantly. Throughout this article the word model will be used when referring to a visual representation of a structuring of co-creation. A model should aid others in understanding what co-creation is, the steps in a co-creation process and how it relates to other fields such as service design, New Product Development, open innovation, participatory design and more. This paper aims to give an overview, according to the available models in literature, of the different ways of understanding and capturing co-creation. Next to that, meta-models are created that summarize the content of the existing models.

Literature

The very literal meaning of co-creation is: together (co-) make or produce something (new) to exist (creation). Co-creation finds its origin in co-production where consumer participation was integrated in the supply chain. At first it was introduced to achieve cost-minimization (for example IKEA) but in 1990 John Czepiel introduced the idea that customer participation may also lead to greater customer satisfaction. Song and Adams (1993) noticed that customer participation could also be an opportunity to differentiate. At the turn of the century, Prahalad & Ramaswamy (2000) presented the idea that customers are taking active roles and that their relationships with firms are shifting. Prahalad & Ramaswamy continued along this route and in 2004 they published a paper in which they used the term *value co-creation*. They described co-creation of value as an initiative of the customer that is dissatisfied with the available choices and therefore takes action. Jaworski & Kohli (2006) somewhat followed the assumption that the customer is looking for a dialogue with the firm and proposed guidelines to "co-create the voice of the customer". Now, economies in the West are transforming towards a service dominant logic and consumers no longer buy either goods or services, but products that provide a service and the value depends on the customer experience. Consumers buy an experience of which the product or service is an artefact. Therefore, Vargo & Lush (2008) argue that in a service dominant logic (opposed to a goods dominant logic) the customer is always a co-creator.

During these changes in the fields of production and marketing economics, similar shifts of focus occurred in the field of design. In design, co-creation has its roots in human centred design (HCD) and participatory design. These movements emerged in the 70s in Scandinavia, where joint decision-making and work practices started to receive attention. One of the key words of these movements was *empowering*. Essential was also the belief that the ones who are affected by design should have a possibility to influence the design (Mattelmäki & Sleeswijk-Visser, 2011). Now, in participatory design, participants are seen as beneficial contributors to the design process by offering their expertise and knowledge as a resource. That is why the term co-creation is often associated with participatory design. Ehn (2008, p.93) describes participatory design as design "with a special focus on people participating in the design process as co-designers". In the world of design practice today this seems common knowledge. Nowadays, designers have become the advocates of users and are asked to create ideas that better meet consumers' needs and desires (Brown, 2008; Badke-schaub et al., 2005; Holloway & Kurniawan, 2010; Brown and Wyatt, 2010; Maguire, 2001).

From the words of Ehn we understand that co-*design* is a process used in participatory design. Co-design however, does not always have the same meaning as co-creation. Designers often use co-design to describe the process of collaboration in which co-creation can take place, so they see co-creation as subordinate to co-design. Other disciplines such as marketing more often use the term co-creation as a trend for openness, collaboration and partnership and co-design as one of the practices within co-creation, so they see co-design as subordinate to co-creation, but the terms are often tangled (Mattelmäki & Sleeswijk-Visser, 2011). The different views bring along a whole other range of substitutes for co-creation, such as reflective design, cooperative design, open innovation, mass customization, co-production, user-generated content, collaborative innovation.

In the last decade, all these terms have appeared widely in scientific literature, in professional magazines, websites of product development companies, design research and market research agencies and also in reports of public organisations. In these writings people show examples of how their version of co-creation has been applied. And "while the literature on

co-creation often fails to raise critical issues, discussions of benefits are abundant" (LSE Enterprise, 2009) it is generally acknowledged that collaboration in new concept development increases the number (of sources) of new ideas in innovation. Co-creation enables idea generation through shared knowledge and experiences and a better understanding of the user. Besides a larger pool of ideas and a better connection of the products to the user, it is also believed that co-creation benefits an increased speed to market, reduces risk and increases customer loyalty (Auh et al., 2007). And, due to participation or co-operation, the customer will experience greater satisfaction and commitment (Dong et al., 2008; Bettencourt, 1997). Finally, the likelihood of positive word-of-mouth is higher with greater levels of customer participation (File et al., 1992). In organizational literature, co-creation has also been praised, in terms of what it can bring to the process of change. Co-creating changes, instead of imposing changes top down, is said to be more effective. This is because it becomes meaningful for the people involved, it ensures a platform for many to be heard and room for diversity, difference and desires (Wierdsma, 2004; Wenger, 2000).

From the literature cited, it can be understood that there are different definitions of co-creation and that there are other disciplines/methods often tangled with co-creation, such as co-design or open innovation. Also, because co-creation is described in many different practical applications, there is not a fixed framework or plan to follow. We support the suggestion that there is a need for "creating tools for co-creation" and conceptual clarity (Schrage, 1995; Payne et al., 2007; Roser et al., 2009).

This paper aims to bring some conceptual clarity to the term co-creation by analysing existing models of co-creation and generate meta-models based on the similarities of the existing ones. Models are a powerful tool for clarity and understanding because it is uniform and shows connections and dependencies instantly. By analysing the existing models, it is hoped that clarity in the form of meta-models can be given on three different levels: (1) theoretical: the co-creation spectrum and how it relates to other terms; (2) practical: the different types of co-creation and how they relate to each other, and (3) applied: the different steps in a co-creation process.

Method

The method for finding the relevant models of co-creation was two-fold. In the first place SciVerse Scopus was used to select all relevant articles until November 2015. The search terms included 'co-creation' (in the title) and 'model' or 'framework' (in the title, keywords or abstract). This resulted in 249 articles. It was a deliberate choice to use the term co-creation and not co-design. Co-design was not used because this term is often limited to the fields of design and computer studies and co-creation was used because this is the term also used in business and management literature.

The abstracts of these 249 articles were scanned for the possible presence of models or frameworks of co-creation in the article. A full version of all articles that hinted at presenting or including a model or framework, a total of 45, was downloaded. Next, the articles were searched for the presence of a visual model or framework. Out of the 45 articles, 28 unique models of co-creation were selected.

Next to that, a more arbitrary search method was used. Google was used to find models of co-creation, by searching only for images with the terms co-creation, co-creation in

combination with *model* and co-creation in combination with *framework*. The search was non-personalized and in English. The first 100 images of the three search results were scanned for useful input. To not be able to include all images is a limitation of course, as is the seemingly haphazard limit of a hundred images. However, we found that around a hundred images repetition of images occurred and almost no new models were found. Out of the 300 images, 22 (unique) images were selected for their representation of (1) co-creation in relation to other fields, (2) different types of co-creation or (3) the process of co-creation. Images that were duplicates of the models found through the SciVerse Scopus (6 in total) were not counted in the 22. Also, if the source of the selected image was secondary, the primary source was retrieved and used to refer to the model.

Together with the models from the scientific articles this resulted in a total 50 models that were analysed for their representation of co-creation.

Results

Figure 1 shows a picture of all images used for this article. For reasons of keeping the article within reasonable length, the full size existing models have not been included. The reference list contains links to all full sized images. Contact the authors to receive a PDF including all images.
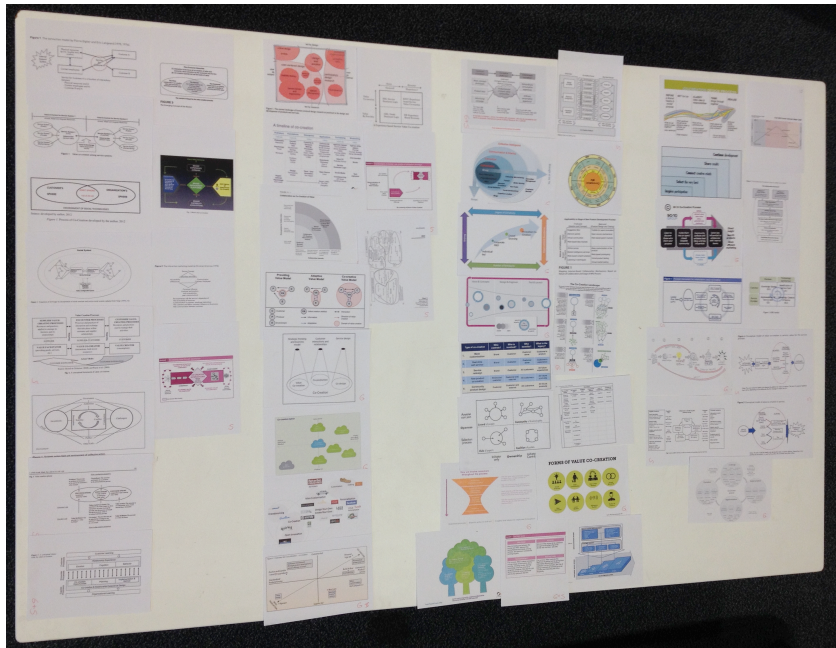

Figure 1 Models organized per category from left to right

A total of 50 models was analysed and assigned to one of the three pre-defined categories (1) the co-creation spectrum, (2) the co-creation types, and (3) the co-creation steps. However, during the analysis, another category occurred among the SCiVerse Scopus models. This category was labelled the 0-category of 'joint space of creation'. The number of models per category and search method can be found in Table 1. First, the models in the (0) category are discussed, as these are the basis of co-creation. Next, the models in the three other categories are discussed in order.

CO-CREATION MODELS	0 Joint space of creation	1 Co-creation spectrum	2 Co-creation types	3 Co-creation steps	Total
Only SciVerse Scopus (31)	11	4	7	6	28
Only Google Images (29)	0	7	9	6	22
Total	11	11	16	12	50

Table 1 Number of models per category and search method

The joint space of creation

This category includes the models of: Andreu et al. (2010), Edvardsson et al. (2011), Grönroos (2012, 2013), Laamanen & Skålé (2015), Payne et al. (2007), Prahalad & Ramaswamy (2004, p.), Ramaswamy (2008), Ramaswamy & Ozcan (2015), Skarzauskaite (2013) and Vargo et al. (2008).

The 11 models in the category of 'joint space of creation' represent two entities and an overlapping space or a space in between the two entities where creation can take place between these two entities: co-creation. These models show an often simplified representation of co-creation with a value input and output for both parties. The derivative meta-model can be found in Figure 2.
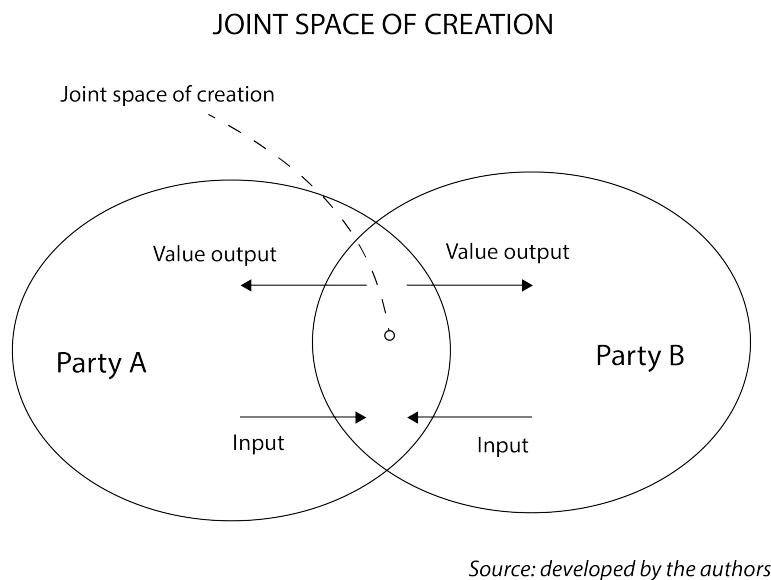
JOINT SPACE OF CREATION

Source: developed by the authors

Figure 2: The joint space of creation

The spectrum of co-creation

This category includes the models of: Customer-Insight (2010), Galvano & Dalli (2014), Lin (2012), Kosaka et al. (2012), Ojasalo & Keranen (2013), Prahalad & Ramaswamy (2004),

Ramaswamy (2008), Sanders & Stappers (2008); Coates (2010), Roser et al. (2008) and Wulfsberg et al. (2010).

The co-creation spectrum gives an overview of models that place co-creation in the field of other similar or overlapping approaches / methodologies (ref). It shows that co-creation overlaps with other movements and terms such as open innovation and participatory design. There are two main movements to be seen: (1) co-creation as an open innovation movement and (2) co-creation as a participatory design method. The first movement also includes low levels of collaboration with limited influence on the design or output. The results also show models that place co-creating value opposite to more traditional business models. Traditional business models are often seen as models with no collaboration and therefore no customer influence on the output. The derivative meta-model can be found in Figure 3.
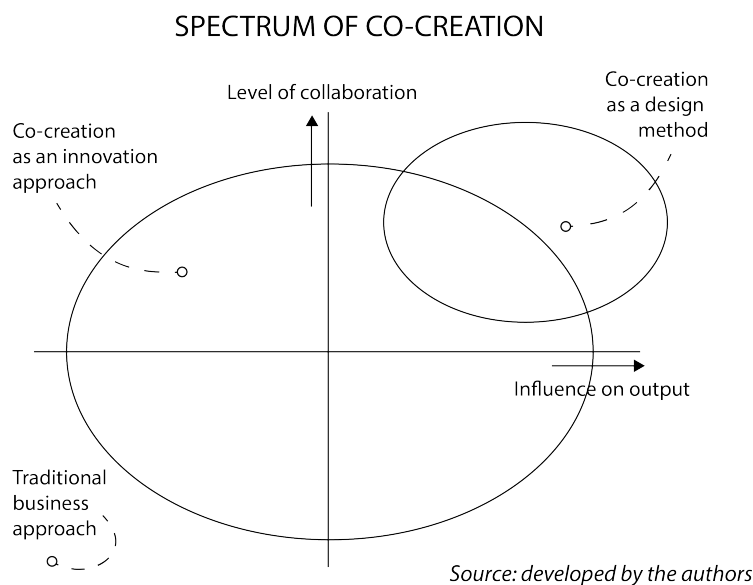
SPECTRUM OF CO-CREATION

Source: developed by the authors

Figure 3: The spectrum of co-creation

The types of co-creation

This category includes the models of: Bartl (2009), Fronteer Strategy (2009), Frow et al. (2015), Kang (2014), Kukkuru (2011), Muscroft (2011), Prahalad & Ramaswamy (2004), Quintarelli (2010), Rihova et al. (2013), SALES 20|20 (2013), Sawhney et al. (2005), Sense Worldwide (2009), Thorsten et al. (2013) and Vernette & Hamdi (2013).

These models identify different types or levels of co-creation. The types are often defined by a set of criteria or a set of axes. From the 11 analysed models, three general criteria can be derived to identify the types of co-creation:

» (1) The moment the co-creation takes place: at the beginning, middle or end of the design or innovation process, or even in use phase.
» (2) The amount of direct benefit or change is there for the co-creating end-user.
» (3) The level of collaboration between the two parties.

These three criteria result in different types of co-creation. The Fresh Network (from the business perspective) and Payne et al. (from the scientific perspective) describe the different

types of co-creation in a comprehensive way. Both describe a scale with five types of co-creation that one can adopt (Payne et al., 2007; the Freshnetwork, 2009) but these are not the same five types. Payne et al. consider personalized advertising on the lower end of the co-creation scale and the Fresh Network distinguishes a last type on the co-creation scale where consumers take over the design process. In the middle of the scale, the types are more or less corresponding. Overall, from all models, five main types have been identified. The five types and the three criteria are depicted in the meta-model in Figure 4.

» (1) Personal offering
» (2) Real-time self service
» (3) Mass-customization
» (4) Co-design
» (5) Community design

TYPES OF CO-CREATION

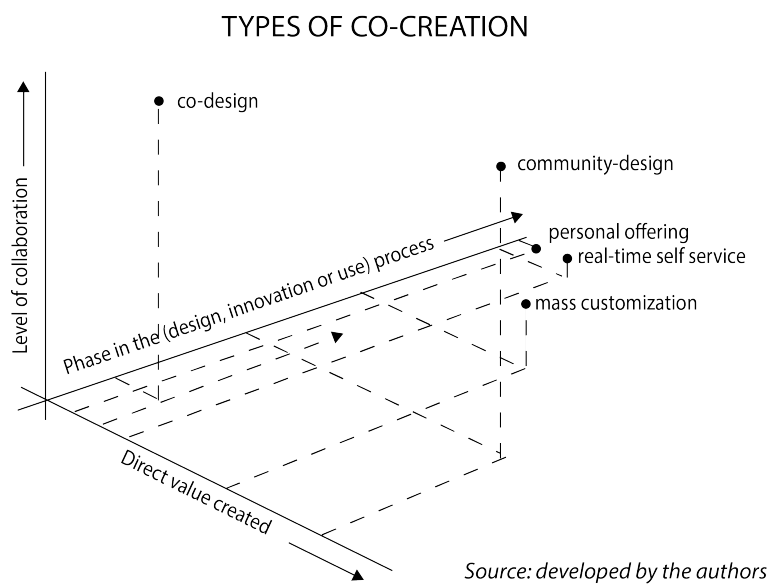Source: developed by the authors

Figure 4: Five types of co-creation

The steps of a co-creation process

This category includes the models of: 90:10 (2010), Aarikka-Stenroos & Jaakkola (2012), Castro-Martinez & Jackson (2015), Farrow Partnership (2010), Fronteer Strategy (2009), Grönroos (2012) Grönroos & Voima (2013), IDEO (2011), Lambert & Enz (2012), Muente-Kunigami (2013), Nagaoka & Kosaka (2012) and Sanna et al. (2012).

The models in this last category all establish certain steps to take in a co-creation process. They mostly include four to six steps. One can argue whether co-creation is a method, or an approach but no consensus exists. A method is a combination of tools, tool-kits, techniques and/or games that are strategically put together to address defined goals. The field of design mostly uses co-creation as a method. An approach describes the overall mindset needed to conduct process. Various fields use co-creation as an approach. Because no consensus exists, the meta-model includes both the design method and innovation approach view on co-creation in Figure 5.
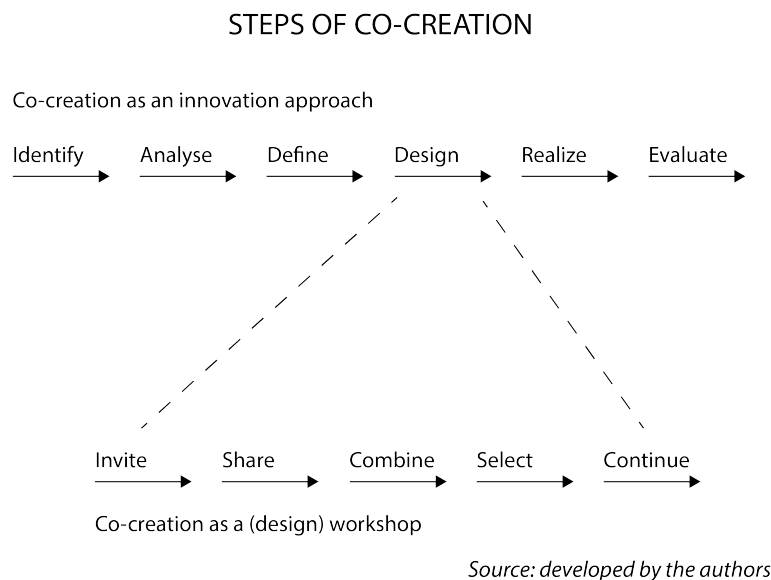
STEPS OF CO-CREATION

Co-creation as an innovation approach

Identify → Analyse → Define → Design → Realize → Evaluate

Invite → Share → Combine → Select → Continue

Co-creation as a (design) workshop

Source: developed by the authors

Figure 5: The steps in a co-creation process

Conclusions

It can be concluded, from the analysis of the 50 models of co-creation, that indeed there are still various views on co-creation and its boundaries. The conclusion that Rosen et al. (2009), among others, drew about a lack of clarity and uniformity of co-creation can be confirmed.

The current views on co-creation differ most in that some see it as an open innovation movement and others as a participatory design method. This shows clearly in the meta-model of the 'spectrum of co-creation' but it also shows in the other three meta-models. In meta-model 2, ' the types of co-creation', it shows that some view co-creation as a set of different ways of creating with the customer and others view co-creation as a step in a design process that involves the customer. In all 4 meta-models, an attempt is made at incorporating both views. It is hoped that the meta-models can form a framework to classify existing research as well as define boundaries for upcoming projects. In the future, this should all contribute to the clarity, understanding and application of co-creation. Therefore, the models are once more repeated in Figure 6 all together.

The differences aside, this article concludes with a definition of co-creation that applies on both the general view and the specific view, as well as the open-innovation and design perspective. This tentative definition is based on all articles cited but mostly on the works of Prahalad & Ramaswamy (2004), LSE Enterprise (2009), and Sanders & Stappers (2008).

Co-creation is the process of mutual firm-customer value creation. This facilitated (creative) process generates an active form of interaction and sharing between firm and end consumer, instead of the active firm, passive consumer interaction. One of the results of co-creation is that the contact between firm and customer moves away from transactional and becomes an experience.
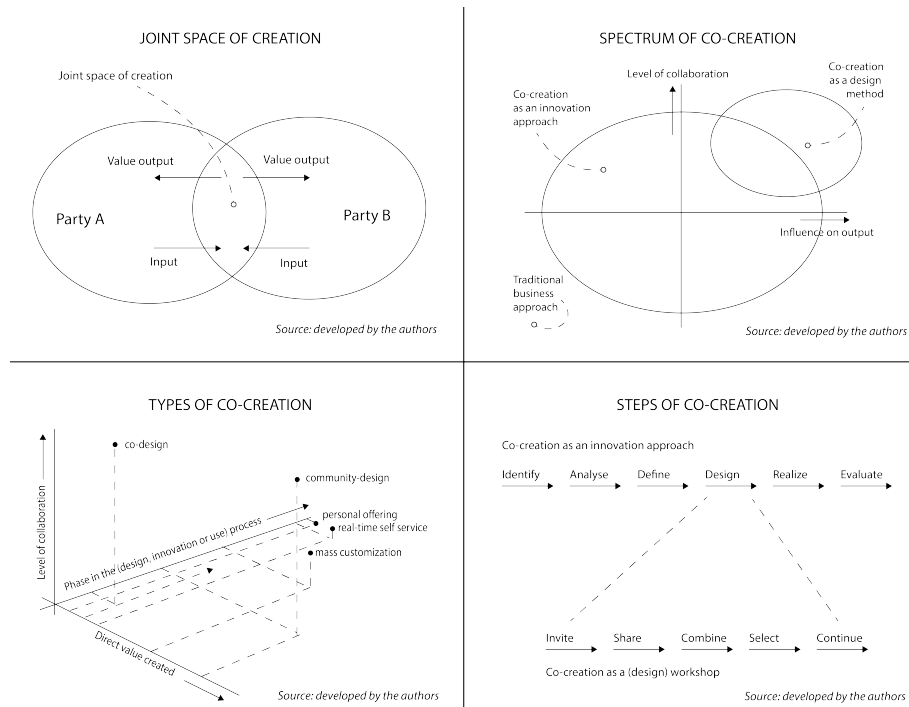

Figure 6: The 4 meta-models of co-creation

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