The Marketing Firm and Co-creation: The Case of Co-creation by LEGO™

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Abstract

The theory of the marketing firm (TMF) places a strong emphasis on exchange relationships between the organization and its stakeholders, which are analyzed in terms of bilateral contingencies. This article discusses the marketer and customer co-creation process within the context of bilateral contingencies. Bilateral contingencies occur when the marketers' behavior is reinforced (and/or punished) by the customers' behavior, while the behavior of the customers is reinforced (and/or punished) by the marketers' actions. Using the example of the LEGO community, we discuss how the marketers in the organization can respond to behaviors resulting from co-creational customer-customer exchanges. This paper fills the knowledge gap by presenting a behavior analysis framework (TMF) for the empirical measurement of the co-creation process. This approach advances the TMF by elaborating on the dimension that explains how the interaction between stakeholders, that is, customers, can influence decisions related to the management of business processes for co-creation.

Keywords: The marketing firm, behavior analysis, bilateral contingencies, co-creation, customer-other customer interaction

1. Introduction

Co-creation is short for collaborative creation (Prahalad & Ramaswamy, 2000). The concept of co-creation provides a shift from a company-centric view to a more balanced view of an organization and customers interacting and co-creating experience with each other (Grönroos, 2008; Prahalad & Ramaswamy, 2004a; Vargo & Lush, 2004; Vargo, Maglio, & Akaka, 2008). Prahalad and Ramaswamy (2000), who introduced the concept, say that customers are fundamentally changing the dynamics of the marketplace. Moreover, the authors (Prahalad & Ramaswamy, 2000) state that the characteristic aspect of the new marketplace is that customers become a new source of competence for the company. The competence that customers bring is a result of the knowledge and skills they possess, their willingness to explore and learn, and their ability to engage in an active dialogue. It creates business value by employing the experience of people from both inside and outside the organization. The customers' desire for these types of activities is not new. The marketplace has become an arena where customers play a much more active role in creating value.

The concept of co-creation is often described as a contextual phenomenon, involving multiple actors in horizontal (between customers and/or other stakeholders) and vertical (between providers and customers) co-creation relationships (Galvagno & Dalli, 2014; Mustak, Jaakkola, & Halinen, 2013). From this, studies on co-creation are often based on a structural approach, thus understanding the concept by focusing on the identification of its' properties and dimensions horizontally and/or vertically (Alves et al., 2016). However, as most studies are based on discussions of the concept as such (e.g., Fernandes & Remelhe, 2016; Galvagno & Dalli, 2014), researchers have uttered the need for a framework for empirical measurement (e.g., Edvardsson, Tronvoll & Gruber, 2011; Payne, Storbacka & Frow, 2008). Therefore, the overall aim of this study is to contribute to a more coherent understanding of the co-creation process, which allows for empirical measurement.

The theory of the marketing firm (TMF) is a business organization approach which is obliged by competitive conditions to adopt a philosophy of marketing or customer-oriented management (Foxall, 1999, 2018). It examines the nature of relationships that bind the firm to its stakeholders (Foxall 1999). Similarly, in the co-creation process, interactions between the firm consumers and consumer communities form a critical component (Prahalad & Ramaswamy 2004a). This approach allows business organizations to create and sustain their competitive advantage by having extensive knowledge about the economic behaviors of key stakeholders (e.g., customers). The TMF uses a behavior analysis interpretation of the relationship of the firm with its customers (Foxall, 2018). Behavior analysis is a field that focuses on the application of the principles, methods, and procedures of experimental behavior analysis. Cooper et al. (1987, p. 14) define applied behavior analysis as “the science in which procedures derived from the principles of behavior are systematically applied to improve socially significant behavior to a meaningful degree and to demonstrate experimentally that the procedures employed were responsible for the improvement in behavior.” From this definition, the behavior is defined in observable and measurable terms in order to assess change over time. Moreover, the behavior is analyzed within the environment to determine what factors are influencing the behavior. From this, the relationship of the firm and its customers is depicted in terms of bilateral contingencies in which the behavior of marketers is reinforced (and/or punished) by customer’ behaviors, while customer’ behavior is reinforced (and/or punished) by managerial actions (Foxall, 2014).

Thus, we suggest TMF as a framework for empirical research to analyze the marketer and customer co-creation process in terms of bilateral contingencies that functionally connect (a) marketers–customers and (b) customers–other customers. As such, this paper addresses the knowledge gap by presenting a behavioral analytical approach for the empirical measurement of the co-creation process (see Alves et al., 2016; Ranjan & Read, 2016). Additionally, we advance the TMF by elaborating on the dimension that explains the marketer and customer co-creation process and how marketers in the organization can make better decisions related to the management of business processes for co-creation.

The rest of the article is structured as follows: The next section begins with a review of research on the concept of co-creation. The subsequent section describes the principles of the behavior analytical approach to understanding the behavior. The bilateral contingencies are presented and discussed to understand co-creational relationships in terms of marketer and customer behaviors. Based on this, an extended version of the marketing firm is presented that contributes, in addition to the marketer-customer relationship, to the understanding of customer-customer relationships in the context of co-creation. Using the LEGO community as an example, we discuss how marketers can respond to behaviors resulting from co-creational customer-customer exchanges. We have chosen to use LEGO as a case example because this brand focuses heavily on the co-creation model, despite being traditionally oriented mostly toward manufacturing. Finally, conclusions and future research are presented.

2. Co-creation

To date, there are no clear definitions of units of exchange in the co-creation process. Vargo and Lusch (2004) first suggested skills and knowledge as units that are exchanged in the co-creation process. Ballantyne and Varey (2006) were critical since they state that skills and knowledge should be viewed as “enablers of exchange” from which something unique may emerge. Vargo and Lusch (2016) later changed their earlier formulation. Even though they claim that services are exchanged for services, it should rather be referred to as a process in which actors in the co-creation process apply and integrate resources. Research on the co-creation concept in a business context is mainly conceptual and emphasizes strategies and actions firms can implement to facilitate customer's co-creation (e.g., Prahalad & Ramaswamy, 2004b). It is argued that, for several positive outcomes for businesses including successful innovation and new business opportunities (Prahalad & Ramaswamy, 2004b), learning about the customer's needs (Matthing, Sandén, & Edvardsson, 2004) fosters new competence (Prahalad & Ramaswamy, 2000) and enhances marketing, consumption, and delivery of product/services (Dong, Evans, & Zou, 2008). Also, most of the empirical research on co-creation focuses on the customer's motivation for participating (e.g., Bendapudi & Leone, 2003; Füller, 2010; Ind & Coates, 2013; Xie et al., 2008). Further, the concept of co-creation is studied from different perspectives such as customer culture theory (Xie et al., 2008), experience economy and marketing (Payne, Storbacka, Frow, & Knox, 2009; Zhang & Chen, 2008), relationship marketing (Payne et al., 2008), personality (Bendapudi & Leone, 2003; Füller, 2010), customer empowerment (Füller, Mühlbacher, Matzler, & Jawecki, 2009), and social exchange (Dong et al., 2008).

Research has tended to break down the concept of co-creation into components by, for instance, describing business strategies, behavioral manifestations, uses, and motives. Present studies are based on the structural approach, focusing on the architecture of phenomena, comprising of entities, and the linkages among them. According to Catania (2013), structural difficulties are concerned with the fact that behaviors and interactions are seen as demonstrations of a structure or mechanism that characterizes an individual, group of people, a business, or other systems. Sturmey, Ward-Horner, Marroquin, and Doran (2007, p. 2) state that "structures are seen as inherent and relatively unchanging attributes of the thing that is studied". The structural approach contributes by analyzing the sequence of happenings and correlations with different factors. In other words, observable behavior is understood as inferred from unobservable constructs either within a person or by social mechanisms (Sturmey et al., 2007).

3. Behavior analysis

Behavior analysis uses a functional approach to examine behavior-environment relationships. It draws from the idea that all behavior begins in the environment (Catania, 2013). The goal of behavior analysis is to identify those variables in the environment that change or maintain behavior (Pierce & Cheney, 2013). The environment is defined as all the events and stimuli that influence the behavior (Pierce & Cheney, 2013). Behavior analysis investigates the interrelations between response, consequences, and antecedents. Behavior analysts have broken down the stream of behavior into *responses* (R) and how they are related to environmental stimuli. The rate at which a response is performed is related to the consequences it has produced in the past. Some consequences result in a similar response becoming more frequent and are thus named *reinforcers* (S^R); other consequences, known as *punishers* (S^P), decrease the possibility of similar responses in the future. When reinforcing stimulus follows a response in one situation but not in other situations, any antecedent stimulus correlated with reinforcement becomes a *discriminative stimulus* (S^D). Each discriminative stimulus sets the occasion for future responses. The functional relation between responses (R), consequences ($S^{R/P}$), and discriminative stimuli (S^D) is termed the three-term contingency (Catania, 2013). *Motivating operations* is added as an antecedent event. According to Laraway, Snycerski, Michael, and Poling (2003), motivating operations have two main effects: “They alter (a) the effectiveness of reinforcers or punishers (the value-altering effect) and (b) the frequency of operant response classes related to those consequences (the behavior-altering effect).” (p. 412).

Based on the principle of selection by consequences, the understanding, prediction, and influencing of behavior is a form of remote causation. The explanations of current behavior are made by pointing to the past consequences of that same behavior. When a behavior is strengthened by its consequences (i.e., reinforced), it is most likely to occur again under similar conditions (Pierce & Cheney, 2013). When a behavior is weakened by its consequences (i.e., punished), it is less likely to occur in the future. The process of learning from consequences of behavior is called operant conditioning. Glenn and Malott (2006) argue that the process of learning from consequences is relevant to understand complex human behavior in business situations on two levels of analysis; the operant behavioral level and the cultural level. Fundamental learning principles from experimentally driven behavior analysis might be extended to analyze and influence "real world" behaviors of individuals in organizations, as well as understand the management of organizational design, processes, and cultures (Glenn & Malott, 2006).

4. The marketing firm

Foxall (2015) provides the marketing firm model that demonstrates a behavioral logic of transactions between a marketer and its stakeholders (e.g., customers). He builds on the concept of marketing relationships, which is "characterized by *literal exchange*, exchange of a legal title to a product or service on the one hand and whatever it is exchanged *for* (usually money) on the other" (Foxall, 2015, p. 56). Foxall (2002) states that the existence of the firm depends on transactions through activities that involve marketing and mutuality relationships. This relationship can be termed *bilateral* because they have a mutual effect on each other (Foxall, 2015). Mutuality relationships are defined as "bonds consisting of the reciprocated qualification of behavior setting the scope and/or reciprocated reinforcement" (Foxall, 2002, p. 88). The underlying assumption of bilateral contingency in this context is that the customer's behavior is controlled by certain conditions given by the marketer and vice versa. The principle of reciprocal reinforcement is the foundation of the bilateral contingencies (Foxall, 2015).

The marketing firm model is based on bilateral contingencies in that it consists of reciprocal reinforcement (see Figure 1). The model has two lines of behavioral contingencies (i.e., MO/S^D- R - S^R), each representing the individual behavioral processes of the marketer and customer. The dashed line shows how their behaviors are related to each other in that the behavior of one functions as an antecedent (MO/S^D) and/or consequence (S^R) for the other. Thus, their future behaviors are interlinked.

- Figure 1 -

Figure 1. MO = Motivating operation; S^D = discriminative stimulus; R_m; response of the marketer; R_C; response of the customer; S^R = reinforcing stimulus; UR = utilitarian reinforcement; IR= informational reinforcement.

The marketing firm model encompasses two forms of reinforcement, utilitarian reinforcement (UR) and informational reinforcement (IR) (Foxall, 2015). UR is “functionally related to obtaining, owning and using an economic product or service material” (Foxall, 2014, p. 3), and IR “stems from the social and symbolic outcomes of consumption” (Foxall, 2014, p. 3). Practical outcomes of purchase and consumption are related to utilitarian reinforcement, such as “the functional benefit, value-in-use, economic, pragmatic, and material satisfaction (labeled hedonic by classical economics)” (Yani-de-Soriano, Foxall & Newman, 2013, p. 151). They are claimed to be derived from inherent use-value in marketer offerings and “from the positive feelings generated form owing and consuming” (Yani-de-Soriano et al., 2013, p. 151). Whereas UR is (usually) mediated through the product, IR is (usually) mediated through the feedback of other people (Foxall, 2015). IR is socially-contrived and “refers to the social significance of behavior and relies on the appraisal of one´s behavior by one´s community” (Laparojkit & Foxall, 2016, p. 381). The success of the marketing firm depends on: planned process; how marketer behaviors affect the customers; and how the customer responds in return.

For example, when customers reinforce the marketing mix management, that is, by buying products, they are increasing the possibility that the firm will behave again in similar ways under similar conditions in the future. Through marketing research and intelligence, the marketing firm investigates and plans how to respond to customer choices and changing preferences.

According to Foxall (2015), the marketing firm is a contextual system, an emergent whole behaving on its own. He relates the behavior of the marketing firm to the theory of *metacontingencies*. A metacontingency is a behavior-environment relationship at a cultural level, representing interlocking behavior of groups of individuals who produce an aggregate product influencing a selecting environment (e.g., Glenn, 2004). The marketing mix management represents a set of activities arranged to meet the objectives of the firm. When all the activities are interrelated, they produce a product representing something greater and different than the sum of the parts. These interrelated activities are defined as *interlocking behavior contingencies*, from which an overall product emerges (i.e., aggregate products) (Glenn, 2004). The interlocking behavior contingencies aggregate product relationship is considered as one unit selected by the environment. Customers represent the selecting environment. Foxall (2015) relates the behavior of the customers to the theory of *macrobehavior*, implying that the customer's outcome is cumulative and has an overall measurable effect on the marketing firm. The higher the consumption, the higher the cumulative outcome. Each customer is considered as an individual entity, each with individual learning histories.

5. Bilateral contingencies of co-creation

It seems to be agreed that the concept of co-creation involves (Galvagno & Dalli, 2014; Mustak, Jaakkola & Halinen, 2013) (a) two or more participants all of whom (b) must somehow be involved in a mutual interaction, and (c) the process results in beneficial outcomes (i.e., subjectively determined) for all participants. The bilateral contingencies correspond to this by involving (i) the interaction of two actors (i.e., marketer and the customer or customer and other customers) whereas each actor might involve a large number of people, (ii) behavior responses which are mutual by function as either an antecedent or consequence to the behavior of the other, and (iii) reinforcement contingencies. From this, we can illustrate the marketer-customer relation and customer-other-customer relation, as shown in Figure 2.

- Figure 2 -

Figure 2. MO = Motivating operation; S^D = discriminative stimulus; R_M; response of the marketer; R_C; response of the customer; R_{OC}; response from other customers; S^R = reinforcing stimulus.

Marketer overall co-creational activity could be made up of elements at an individual or group level. For instance, the co-creation platform of an organization may consist of a set of marketer co-creation activities (R_M) related to inviting customers to present ideas, deciding whether to produce and launch new products. Marketer co-creational activities function as MO/S^D for the customer's co-creation activities (present product ideas, vote for the best idea, etc.), which again produce UR and/or IR. The customer-other-customer interaction at a co-creational platform is also orchestrated by the marketer (see Figure 2). A customer's relations with other customers can be analyzed on an individual level. One customer's idea or vote for the best idea function as MO/S^D for other customer's co-creation behavior (likes, votes, ideas, etc.), which again produce UR and/or IR. All marketing activities that are contributing to implementing, maintaining, and realizing co-creational events are interlocked and produce an overall effect for the organization (i.e., interlocking behavior contingencies and an aggregate product). The customers and other customers are the marketer selecting environment (Glenn, 2004) in that they select or deselects marketer contingencies, which would influence the marketer future management and, consequently, more or fewer generations of the aggregate products.

Ramaswamy and Gouillart (2010) state that the starting point for a co-creating marketer is not to find out how to minimize costs and time, but rather to focus on the stakeholders who are affected by the overall effect of the marketer's behavior. The hallmark of managing bilateral contingencies is the arrangement of two kinds of reinforcement contingencies, those that affect the marketer and those that affect the customers (Foxall, 2015). This corresponds with the co-creational concept in describing that the marketer should facilitate customer's co-creation and that this would result in value for the marketer (e.g., revenue, profit (UR), reputation (IR)). From the TMF approach, a crucial part of the marketer research and intelligence would be the collection of data of the customer's contingencies of reinforcement and their cumulative effect upon the marketer. The marketer could also describe their anticipated reinforcement contingencies, which imply that designing for a purpose is a common goal for all the individuals who constitute the interlocking behavior contingencies of the marketer. Through specifying the object of the marketer co-creational activities and designing for a process of interaction, the marketer tries to direct the selection process (Sandaker, 2009). The customer's co-creational activities (i.e., R_C) represent the actual controlling conditions that select the future behaviors of the marketer. However, it is the effect of what the marketers do, not their planned process, which will set the occasion of how customers respond.

6. Co-creation by LEGO

The LEGO community has several million members who develop relationships or even earn an additional income through artistic work. The members of this community are awarded for the best Lego design that can eventually be used as a template for mass-production. LEGO pays these community members a share of income created by their design. Perhaps, this is the reason why LEGO community attracts not only juvenile consumers but also their parents. In the landscape of bilateral contingencies, managing customer's co-creational behavior implies that the marketer manages (a) the customers behavioral setting and (b) pattern of reinforcement (Foxall, 2015). The circumstances that immediately determine customer co-creation activities comprise the customer behavior setting (Foxall, 2002). Foxall (2005) points out that the effect of marketer behaviors serves as physical, social, temporal, and regulatory stimuli in the behavioral setting of the customer. In the context of LEGO's co-creation in the web, a stimulus could be a social web platform functionality; a social stimulus could be stimuli mediated through a marketer employee; a temporal stimulus could be the availability of employees; a regulatory stimulus could be rules or norms by LEGO employees operating on the platform. When LEGO's co-creational activities function as an S^D to a customer, it might signal opportunities for the customer to derive valuable consequences (UR and/or IR) from their actions.

Research on co-creation suggests that the marketer cannot deliver value inherent in their marketer offerings but rather offer value propositions (Vargo & Lusch, 2016). The idea is that the marketer can present "something" to their customers, but the value is realized only through the customer's actions. If what is offered by the marketer is understood as an S^D in terms of functional principles (see Figure 2), it will be an event that will probably signal outcomes (S^R) of particular co-creational activities (R_C). The signal (S^D) could be a verbal specification of behavior-environment contingencies. This implies that the marketer specifies to their customers through verbal stimuli (i.e., writings, speaking, signing, etc.) what will happen if they respond (R_C) to the value propositions, or we would like to say what the marketer has signaled (S^D). For instance, the marketer writes: "Post your idea here, and you can get votes, comments, and publicity." A verbal stimulus (S^D) might evoke the response "sharing an idea" (R_C) if the proposed consequence (i.e., get votes, comments, and publicity) meets the requirements of the customer. The consequence must be something that the customer wants. If the customer receives votes, comments, and/or publicity, their behavior is reinforced (IR), and this will increase the possibility of future involvement in co-creational activities.

In addition to the S^D, the bilateral contingencies encompass motivational operations (MO) as antecedents. To date, co-creation research has focused primarily on motives and antecedent-behavior relations (Bendapudi & Leone, 2003; Füller, 2010; Nambisan & Baron, 2009). In the TMF approach, “motives” are approached as MOs, which have the same status as causal variables such as stimulus control, reinforcement, punishment, and extinction (Michael, 1982). Behavior analysis treats MOs as observable, environmental variables, without referring to inner mental explanations, social structures, or summary labels (Michael, 1982). Ultimately, the behavior analysis approach claims that causes exist in the environment.

The co-creation literature describes the marketer as a facilitator of customer’s value creation. Prahalad and Ramaswamy (2004b) state that the concept of co-creation is about facilitating the customer’s environment so that the customers can personalize their experiences. Personalizing of experiences can imply customer’s actions toward some specific goals. Through the interaction with the marketer, the customers can try to direct their selection process by verbally describing their future goals or whatever satisfies them. A crucial object for the marketer would be to reinforce the customer’s co-creational activities effectively, as studies show that “the reinforcing efficacy of social interaction can be modified simply by making more highly preferred reinforcers available in the social setting” (Vollmer & Hackenberg, 2001, p. 249). To the marketer, it is the aggregated action of customers on their design and implementation of co-creational activities. Although the marketer may produce co-creational activities for a “segment,” they are likely to respond to the behaviors of an individual customer, who will have his or her requirements for participating, and the firm might try to meet those separately (Foxall, 2015).

The arrangement of reinforcement patterns by the marketer entails a planned process of reinforcing customer's co-creational activities. It is evident in behavior analytic research that the establishment of new behavior requires a high rate of reinforcement in the beginning (Catania, 2013). By reinforcing every co-creational customer behavior, the marketer can gradually reinforce the behavior less frequently but enough to maintain the customer co-creational behavior at an appropriate level. LEGO Idea's punchline is "You design it – We make it." The customer must be involved in a long co-creational process to achieve the "big prize" at the end and the possibility that the realized idea will be launched is small. However, the customer does get reinforced while being active in the process. Every interactive behavior, such as sharing, creating, and supporting other customers, will automatically and immediately generate consequences in terms of LEGO Clutch Power (S^R). Besides, a customer can earn badges for reaching milestones; the more supporters the customer's get, the closer they are to achieving a badge. Getting comments is also possible; it is unpredictable when it will come, but may contribute to the maintenance of interactive customer behavior.

From the marketer perspective, customer-customer relations could be integrated as macrocontingencies, as shown in Figure 2. If so, an aggregate number of customers would act similarly. For instance, when a customer shares an idea (R_C), a cumulative number of other customers might vote (R_{OC}) on the idea. To LEGO, the more votes and ideas, the more likely they are to produce and launch the idea (R_M). A customer is dependent on the community of other customers, as LEGO launches only ideas with an extraordinary level of supporters. When a customer posts an idea at LEGO Ideas (R_C), the idea becomes visible for other customers. The idea would act as a signal (i.e., S^D) for other customers to vote, comment, or take any other form of action. If another customer does respond (i.e., R_{OC}), this action could generate consequences (S^R) for the customer posting the idea. A customer posting an idea might be reinforced both by other customer's support (R_{OC}), and the LEGO's arrangement of Clutch Power (R_M). Clutch Power is tied to interactive activities at the LEGO Ideas platform and the customer's degree of contribution by sharing, creating, supporting, and by another customer's support. This is an example of how LEGO, through research, intelligence, planning, designing, and subsequent implementation (RM), has arranged the behavior setting and consequences for their customers. The more feedback from other customers (i.e., R_{OC}), the more Clutch Power the customer earns (S^R). When other customers respond (i.e., R_{OC}) they would also achieve Clutch Power (i.e., S^R). The Clutch Power represents utilitarian reinforcement (UR), while the feedback of other customers represents informational reinforcement (IR). If a customer idea is launched, they will earn additional UR such as 1% of the total net sales, copies of the product, and IR in terms of recognition and a biographical post. UR for LEGO could be monetary profits, risk reduction, and efficiency of time. The positive word-of-mouth among the customers could be an example of IR.

The marketer (the social environment to the customers) determines, according to certain rules (formal and informal), what is appropriate customer behavior or not, and delivers consequences on their customer's behavior accordingly (Sandaker, 2009). Appropriateness is not a normative question in terms of good or bad. The marketer's metacontingencies can be viewed as a system of reinforcers. In return, the customers serve as the social environment to the marketer, determining which marketer behaviors are "appropriate," or, as the co-creation value researchers Prahalad and Ramaswamy (2004a) put it, "suits her context" (p. 8).

Without the component of reinforcement, the co-creation process (i.e., Figure 2) would collapse. However, reinforcement is temporary (Catania, 2013), and the marketer should not stop delivering it for any customer behavior desirable enough to maintain. When reinforcement for a behavior discontinues, the behavior responding decreases (see Fagerstrøm, Vatrapu & Størksen, 2018). This operation is called extinction (Catania, 2013). Besides reinforcement and extinction, the consequences of behavior involve punishment. Punishment decreases the response frequency. The co-creation process may involve the removal of a positive reinforcer or a presentation of an aversive stimulus. In co-creation research, unwanted effects are related to the concept of co-destruction (Fischer & Parmentier, 2014). Consequences are relative; they are dependent on individual learning history and the current setting. It is the effect (i.e., consequences) and not the intended purpose that decides whether a consequence is a reinforcer (Catania, 2013).

7. Conclusion

This study theoretically argues for using the principles of bilateral contingencies to understand multiple co-creational relationships (marketer-customer relationship and the customer-other-customer relationship), which allows for empirical measurement. The interactional dependency in co-creational events is in the TMF approach explained by the principles of behavior analysis and the intertwining of behavioral contingencies. The bilateral contingencies are an integrative framework of two levels of analysis, an extended version of the basic behavior-environment framework used within behavior analysis. The bilateral contingencies encompass the levels of a marketer's co-creational activities, analyzed in terms of metacontingencies, and the level of a customer (or a cumulative number of customers), analyzed in terms of macrocontingencies. The interactions between the marketer and customer are bilateral, in the sense of being mutually dependent on each other's behavior to produce reinforcing consequences. Also, it is proposed that customer-customer relations can be introduced as a dimension to analyze the co-creation process. The customer-customer relationship is also bilateral, but it is suggested that this relationship could be analyzed at an individual level. The bilateral contingencies can serve as a complementary tool for the company's planning, design, and implementation of co-creational events. The marketer can analyze, implement, and change their actions by arranging a set of reinforcement contingencies. Managing relationships through positive control might be a powerful tool for the marketer due to positive reinforcements.

This study is conceptual, and it is necessary to verify the extended dimension of the marketing firm model through empirical means. Conducting empirical research based on the bilateral contingencies could, for example, be done in closed empirical settings, scenario-based studies, or case studies in real-world settings, each with corresponding advantages and disadvantages. Future studies could examine in actual co-creation communities (like LEGO) and empirically validate the extension of the model proposed in this study. Moreover, future studies could encompass case triangulation of companies who have co-creation communities. This would ensure a good ecological validity of the study. At the individual level, it is evident that the behavior analysis approach can establish, maintain, and change behaviors. Researchers in the co-creation literature has pointed out the need for new theories and insights to develop the co-creational concept in a coherent fashion. This research might explain how environmental variables determine the relationships between stakeholders in a co-creational situation.

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