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Consumer Cocreation in New Product Development

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Abstract

The area of consumer cocreation is in its infancy and many aspects are not well understood. In this article, we outline and discuss a conceptual framework that focuses on the degree of consumer cocreation in new product development (NPD). The authors examine (a) the major stimulators and impediments to this process, (b) the impact of cocreation at each stage of the NPD process, and (c) the various firm-related and consumer-related outcomes. A number of areas for future research are suggested.

Keywords

cocreation, conceptual/theoretical, innovations, new product innovation, value

Introduction

In today's markets, technology has provided consumers with access to unlimited amounts of information and an ability to communicate with other consumers and companies anywhere in the world. This has provided them with a sense of "empowerment," such that they desire a greater role in exchanges with companies (Ernst, Hoyer, Krafft, and Soll 2010). One important outcome of this increased consumer empowerment is that consumers now desire to play a greater role in the process of value creation. This process is referred to as *cocreation* and can occur in a variety of contexts (Bolton and Saxena-Iyer 2009). Cocreation is considered as an important manifestation of customer engagement behavior (van Doorn et al. 2010).

One context in particular where consumer cocreation is increasingly vital is the area of new product development (NPD). Consumers are able and willing to provide ideas for new goods or services that may fulfill needs that have not yet been met by the market or might improve on existing offerings (Ernst, Hoyer, Krafft, and Soll 2010). Furthermore, they are now able to easily communicate these ideas to the company through Internet websites, e-mail, and social networks. Thus, cocreation in this context is defined as "*a collaborative new product development (NPD) activity in which consumers actively contribute and select various elements of a new product offering*" (O'Hern and Rindfleisch 2009, p. 4). In other words, cocreation in NPD is the practice of collaborative product development by firms and consumers. Thus, cocreation allows consumers to take an active and central role as participants in the NPD process. It is the NPD aspect of consumer cocreation that is the focus of the current article.

Consumer cocreation represents an attractive approach for companies for a variety of reasons. In particular, ideas generated through cocreation will more closely mirror consumer needs.

It has been clearly recognized that successful NPD depends on a deep understanding of consumer needs and product development efforts that meet those needs (Hauser, Tellis, and Griffin 2006). However, this process is often rather difficult because these needs are often complex and may not always be identified through traditional marketing research methods (O'Hern and Rindfleisch 2009; von Hippel 2005). The inability to adequately assess and fulfill consumer needs is often a key reason for new product failure (Ogawa and Piller 2006). However, by involving consumers more actively in the NPD process, new product ideas can be generated, which are more likely to be valued by consumers, thereby increasing the likelihood of new product success. Thus, firms that manage this process effectively will ultimately achieve a sustainable competitive advantage over the competition (Prahalad and Ramaswamy 2004). In addition, involving consumers in the NPD process can improve product quality, reduce risk, and increase market acceptance (Business Wire 2001). It is therefore not surprising that the Marketing Science Institute has listed integrating consumers into the innovation process or cocreation as one of their top research priorities for 2008–2010.

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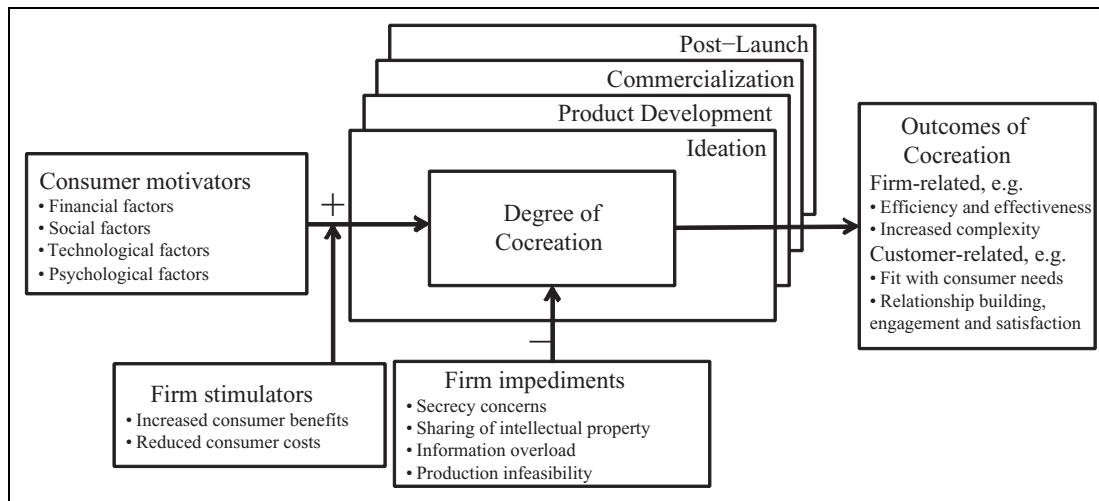


Figure 1. Conceptual framework of consumer Cocreation.

Despite its importance, this phenomenon has been scarcely researched in consumer settings. For example, studies on consumer relationship management have almost completely ignored innovation and NPD. What studies do exist have focused on very specific cases (e.g., computer software or games—Bendapudi and Leone 2003; Grewal, Lilien, and Mallapragada 2006; O'Hern and Rindfleisch 2009; Prügl and Schreier 2006) and therefore provide a rather narrow view of the process. A more comprehensive framework is needed to guide the research agenda in this area.

The goal of the current article is to propose such a framework. Key questions that motivate the development of this framework are: Why are some consumers and firms more willing to engage in cocreation in NPD than others (i.e., what are the stimulators and impediments of consumer cocreation)? Why do some consumers and firms vary in the scope (i.e., across different stages of NPD) as well as the intensity of cocreation activities? Thus, our goal is to develop a research agenda that provides a deeper understanding and answer to these important questions.

Furthermore, most of the existing work on consumer cocreation has been conducted in the context of B2B markets. In the current article, however, we shift the focus to the B2C context because the integration of consumers into the NPD process is a different and sometimes more challenging task than in a B2B market. This is because the B2C context is usually characterized by a large distance between the firm and its consumers, the existence of strong intermediaries such as retailers, a large number of potential consumers, lower consumer loyalty levels, and rapidly changing consumer preferences (Spann et al. 2009). This partially explains why consumer integration is more difficult to achieve and why failure rates for new products are significantly higher in B2C markets (Stevens and Burley 2003; Adams-Bigelow 2004). Because new products very often fail to match consumer requirements, it is an important managerial challenge in B2C markets to improve the interaction with consumers during NPD in order to reduce failure rates and to increase the financial returns from high investments in the

development of new products and services (Ernst, Hoyer, Krafft, and Krieger 2010).

Our article is organized as follows. In the following section we describe the overall conceptual framework of consumer cocreation, followed by the definition of the key construct of degree of cocreation. Subsequently, we identify important motivators, stimulators and impediments to the degree of cocreation. Further sections discuss consumer cocreation at different stages of the NPD process, namely, ideation, product development, commercialization and postlaunch. Finally, we elaborate on outcomes of consumer cocreation in terms of both firm and consumer outcomes. We conclude with a general discussion of future research implications.

Conceptual Framework of Consumer Cocreation

Figure 1 presents the overall conceptual framework, which organizes the specific topics to be discussed concerning consumer cocreation specifically in the NPD process. In our article, we concentrate on the *degree* of the cocreation effort, which includes both the scope and intensity of cocreation. We examine three sets of antecedents of the degree of cocreation: consumer-level motivators, firm-level impediments, and firm-level stimulators. Each of these can increase the scope and intensity of cocreation.

Furthermore, cocreation can be valuable at all stages of the NPD process which include: ideation, product development, commercialization, and postlaunch. Finally, these efforts can lead to a variety of outcomes which can be related to the firm as well as the consumer. In subsequent sections, we elaborate on each of these important aspects.

Degree of Cocreation

The degree of cocreation activities in NPD is the core construct in our framework and is a function of both the *scope* of

Table 1. Summary of Important Findings and Issues Worthy of Further Research

Topic	Current Insights	Important Research Questions
Process of Cocreation	<p>Degree of cocreation is a function of:</p> <ul style="list-style-type: none"> • scope of activities across product development stages • intensity of activities within each product development stage 	<ul style="list-style-type: none"> • Why does the scope and intensity of cocreation vary across firms?
Consumer-level Motivators of Cocreation	<ul style="list-style-type: none"> • Motivators of cocreation can be classified into financial, social, technical, and psychological factors 	<ul style="list-style-type: none"> • Why are some consumers more willing and able to engage in cocreation? • What is the relative impact of financial, social, technical, and psychological factors in driving consumer cocreation? • How do the costs and benefits of cocreation evolve over time within a relationship with a consumer?
Firm-level Impediments of Cocreation	<ul style="list-style-type: none"> • Impediments might include concerns about secrecy, ownership of intellectual property rights, information overload, and production feasibility 	<ul style="list-style-type: none"> • Is a reliance on trade secrets detrimental to cocreation? • How should firms manage the ownership of intellectual property when cocreating with consumers? • How should firms manage the challenges of information overload and feasibility of consumer generated ideas? • Are firms that engage in a high degree of cocreation also more innovative in their non-cocreated product development activities? • What are some of the other firm-level impediments to cocreation?
Firm-level Stimulators of Cocreation	<ul style="list-style-type: none"> • Firms can stimulate cocreation by increasing the benefits to consumers from cocreation, and reducing the costs—in terms of time, effort, and foregone opportunities—of cocreation activities 	<ul style="list-style-type: none"> • Which consumer segments should firms target in each stage of cocreation? • What are the needs, wants, preferences and motivations of different segments of cocreating consumers? • Should firms include several, broad segments of consumers in the cocreation process, or should they focus their cocreation activities on a few narrow segments of consumers (such as lead users or brand loyal consumers)?

(continued)

Table 1 (continued)

Topic	Current Insights	Important Research Questions
Consumer Cocreation at Different Stages of NPD	<p><i>Positive outcomes</i></p> <p>Ideation and product development:</p> <ul style="list-style-type: none"> • Cost reduction (inexpensive input from customers) • Increased effectiveness of products/services (closer fit to consumer needs, higher perceived quality/novelty, better differentiation) • Strengthening of customer-firm relationship <p>Commercialization and postlaunch:</p> <ul style="list-style-type: none"> • Increased likelihood of success and faster diffusion (products/services match customer needs better and higher word of mouth) • Savings on marketing expenses (greater customer enthusiasm and word-of-mouth effects) • Savings on customer education and other support activities • Early warning of potential issues with the new product <p><i>Risks and Costs</i></p> <p>Ideation and product development:</p> <ul style="list-style-type: none"> • Incentives for more and better ideas from customers • Challenges in recognizing potentially successful ideas from numerous customer inputs • Managing customer expectations and relationships <p>Commercialization and Postlaunch:</p> <ul style="list-style-type: none"> • Challenges in managing potentially negative word-of-mouth 	<ul style="list-style-type: none"> • What links cocreation and its benefits? Significant research is needed to confirm these links, estimate their strength, and reveal the mechanism through which they occur. • What metrics need to be developed to measure the various aspects of the cocreation process and its outcomes? How can a firm optimize the process of cocreation to reap the benefits from it? • What incentives should the firm provide to spur customer input in cocreation? • How can a firm encourage and maintain customer enthusiasm for the cocreation process? • How can a firm recognize promising ideas from the vast number of customer inputs? • How should a firm allocate its resources between traditional inputs in NPD and cocreation with consumers to optimize the NPD process?

(continued)

Table 1 (continued)

Topic	Current Insights	Important Research Questions
Outcomes of Cocreation	<p><i>Positive outcomes</i></p> <ul style="list-style-type: none"> • Cost reduction (reduced input from employees, suppliers, etc.) • Increased effectiveness of products/services (closer fit to consumer needs; higher perceived quality/novelty, and better differentiation) • Relationship building potential <p><i>Risks and costs</i></p> <ul style="list-style-type: none"> • Diminished control over strategic planning • Increased complexity of managing firm's objectives • Complexity of managing mis-performance and selection of consumers' ideas 	<ul style="list-style-type: none"> • What are the short-term and long-term effects of cocreation on firm's revenues and profitability? • In which markets and conditions is cocreation a viable business strategy? • How does cocreation affect marketing accountability and customer equity metrics? • How should a firm allocate its resources between traditional inputs in NPD and cocreation with consumers to optimize its returns? • What is the role of cocreation in customer relationship building? • How does competition for cocreators affect success of cocreation? • How can firms best implement cocreation processes, given the complexity and potential loss of control? • What is the effect of cocreation on brand image and positioning of the focal firm? • Does cocreation hinder radical innovation?

cocreation activities as well as the intensity of these activities. The scope of cocreation refers to the propensity of firms to collaborate with consumers across all the stages of the NPD process which include ideation, product development, commercialization, and postlaunch activities. Thus, firms that are highest in their scope of cocreation collaborate with consumers in all of these stages. *Intensity* of cocreation refers to the extent to which firms rely on cocreation to develop products within a particular stage of NPD. Thus, firms that are highest in their intensity of cocreation in a particular stage of product development rely exclusively on consumers for their development activities in that stage.

An example of a firm that is high on both scope and intensity is Threadless.com, a T-shirt manufacturer. Threadless.com obtains the graphic designs for its T-shirts from its consumers who submit designs online. Members of the Threadless.com consumer community and visitors to its website vote on the submissions, and the most popular designs are sent into production and sale, with several new designs being offered each week (Beer 2007). Designers whose designs get chosen for sale receive a monetary reward and get to keep the rights to their designs (Liu 2007). The company's cocreation efforts do not end with ideation and product development: they also extend to commercialization and postlaunch activities. As Jeffrey Kalmikoff, Chief Creative Officer of Threadless.com put it (Beer 2007, p. 54):

We don't advertise at all. All our efforts are toward finding ways of expanding word of mouth. If you're a designer and you want to get chosen, you're going to tell everyone you know to go to the site and vote. If you're going to do that, why wouldn't we give you the tools to do that better? Banners for your site, the ability to send mass e-mails and stuff like that. It also grows our site because in order to vote, people need to register and get a username, which gets more people on our newsletter. Is it marketing? Of course.

Despite this high-profile example, it is probably the case that at this point in time, most firms are low (or likely zero) on both scope and intensity (and thus degree) of cocreation activities. The next set of sections explores some causes of differences in the degree of cocreation among consumers and firms.

Motivators, Stimulators, and Impediments to Consumer Cocreation

Consumer-Level Motivators of Cocreation

Consumers often vary highly in their interest and ability to participate usefully in cocreation tasks. Even among firms with millions of consumers, only relatively few will have the willingness to be fully engaged or the skills to be of much use in the product development and launch processes. (Etgar 2008; O'Hern and Rindfleisch 2009). Researchers in recent years have identified segments of consumers who might be especially willing and able to participate in cocreation activities. These include innovators, lead users, emergent consumers, and

market mavens. We briefly describe each of these segments of consumers and then discuss some motivators that might drive cocreation among these and other consumers.

Innovators in this context are those consumers who are the earliest to adopt new products (Moore 1991). *Lead users* are individuals who face needs that will eventually be general in the marketplace, but who face these needs before others in the marketplace, and are therefore well positioned to solve these needs themselves (von Hippel 1986). *Emergent consumers* are individuals who are especially capable of applying intuition and judgment to improve product concepts that mainstream consumers will find appealing and useful (Hoffman, Kopalle, and Novak 2010). *Market mavens* are individuals who have information about many kinds of products, places to shop, and other facets of the market, and have a high propensity to initiate discussions with and respond to information requests from other consumers (Feick and Price 1987).

The consumer segments listed above may be especially engaged in cocreation activities. However, the specific motivators of consumer participation in cocreation are little understood (see also van Doorn et al. 2010 in the current issue). Cocreation involves, on the part of consumers, monetary and nonmonetary costs of time, resources, physical and psychological effort to learn and participate in the cocreation process. Relative to these costs, consumers compare benefits of engaging in cocreation activities (Etgar 2008; O'Hern and Rindfleisch 2009). Why are some consumers more willing and able to engage productively in the cocreation process? Financial, social, technical, and psychological factors all play a role (Füller 2008).

Some cocreating consumers are motivated by *financial* rewards, either directly in the form of monetary prizes or profit sharing from the firm that engages in cocreation with them, or indirectly, through the intellectual property that they might receive, or through the visibility that they might receive from engaging in (and especially winning) cocreation competitions. But many others are not simply motivated by money: they choose to "free reveal" ideas (von Hippel and von Krogh 2006) and freely share effort in the post ideation stages of cocreation.

Some may receive *social benefits* from titles or other forms of recognition that a firm might bestow on particularly valuable contributors. Social benefits of cocreation comprise increased status, social esteem, "good citizenship," and strengthening of ties with relevant others (Nambisan and Baron 2009). Titles such as Amazon.com's "Top 100 Reviewer" and formal recognition can be a source of pride to many of their recipients, in part because they are a visible symbol of their uniqueness relative to other consumers.

Others might be motivated by a desire to gain *technology (or product/service) knowledge* by participating in forums and development groups run by the manufacturer. Cocreators might reap important cognitive benefits of information acquisition and learning (Nambisan and Baron 2009). For example, Blackberry, Lenovo Thinkpad, and many other brands have forums that attract consumers who participate in all stages of the cocreation process and gain technology knowledge themselves from exchanging ideas and inputs from others in the community.

Finally, consumers may participate in the cocreation process for *psychological* reasons that remain poorly understood. Creative pursuits of cocreation are likely to enhance intrinsic motivation and sense of self-expression and pride (Csikszentmihalyi 1996; Etgar 2008). Acting creatively enhances positive affect (Burroughs and Mick 2004) and enjoyment of contributing (Evans and Wolf 2005; Nambisan and Baron 2009). Moreover, some consumers may participate purely from a sense of altruism. They may do so because they genuinely believe in the objectives of the NPD effort (such as in medical product development efforts) or because they obtain psychic utility from participating in the cocreation process (such as in charitable service development efforts). Others may be motivated due to high involvement or dissatisfaction with the product (Ernst, Hoyer, Krafft, and Soll 2010).

Ideas for future research. As we noted earlier, preliminary studies have identified segments who cocreate (e.g., Füller 2008; Hoffman, Kopalle, and Novak 2010). Nevertheless, more research is needed on typologies that are specifically tailored to cocreation. Despite what we know about consumer segments such as innovators, lead users, emergent consumers, and market mavens, the relative attractiveness of targeting each of these (or other) consumer segments in each stage of cocreation is a fruitful area for further research. Firms need to understand which consumers and consumer segments have the highest potential for cocreation (Ernst, Hoyer, Krafft, and Soll 2010; Franke, Keinz, and Steger 2009). Should a firm aim to include a broad segment of consumers in the cocreation process to ensure successful customization or is it more efficient to focus on a small segment of very particular consumers (such as lead users or brand loyal consumers)? Cocreation is susceptible to the self-selection of highly involved and knowledgeable consumers who often differ significantly from the majority of consumers who may ultimately purchase the product. Again, we need a better understanding of needs, wants, preferences, and the motivation of different segments of cocreating consumers.

Furthermore, research should reveal when consumers are motivated to engage in and appreciate cocreation and when they are not. If consumers have difficulties conveying their preferences or latent needs, or have low levels of involvement with the product, they may not appreciate the benefits of cocreation (Etgar 2008; Franke, Keinz, and Steger 2009). Future research should address outcomes and boundary conditions of cocreation. Finally, longitudinal studies are needed to reveal how the cost-benefit trade-off evolves over time within a relationship with a consumer (e.g., does the initial motivation to cocreate wear out over time or does it increase with relationship duration?).

Firm-Level Impediments and Stimulators of Consumer Cocreation

Firms can vary in their degree of consumer cocreation for two broad sets of reasons. First, some firms might have a lower propensity to engage in intensive and wide ranging (i.e., high scope) cocreation activities due to impediments that are

organizational in nature. Second, some firms might have better tools and processes in place to stimulate, for a given level of consumer motivation, the inherent propensity of some consumers to participate in the cocreation process. To distinguish between these sets of reasons, we refer to the first set of reasons as *impediments* of consumer cocreation. These address the main effects of firm-level factors on the degree of cocreation. We refer to the second set of reasons as *stimulators* of consumer cocreation: these address the interaction effects of firm-level factors on the relationship between consumer-level motivators and the degree of consumer cocreation. Given the early stage of research on these topics, we highlight some illustrative impediments and stimulators below and encourage further research in this area.

Impediments of Consumer Cocreation

At least four characteristics of the cocreation process can represent impediments to the cocreation process. First, cocreation requires a fair amount of transparency on the part of the firm, since it involves the revelation to consumers (and through them, potentially to competitors) of information on NPD trajectories and ideas that might otherwise have remained secret much longer (Prahalad and Ramaswamy 2004). As such, firms that rely greatly on secrets to protect proprietary knowledge in their NPD process (Liebeskind 1997) are less likely to engage in intense and wide-ranging cocreation activities. *Concerns about secrecy* are likely to be highest in the product development and launch stages of the cocreation process.

Second, cocreation initiatives can require firms to grapple with tricky questions around the *ownership of intellectual property*. Although some consumers might gladly hand over the fruits of their skills and labor to the cocreating firm without any acknowledgment, others might expect to retain full ownership over intellectual property. A lack of consistency in intellectual property policies might create perceptions of unfairness among consumer contributors. They may also create legal entanglements. Firms that emphasize retaining ownership of intellectual property rights for themselves are therefore less likely to engage in a high degree of cocreation.

Third, cocreation can yield large volumes of consumer input, sometimes enough to lead to *information overload*. Runaway success in the ideation stage of cocreation can itself be a burden since screening millions of ideas is no easy task. In other words, the “wide end” of the NPD funnel becomes many times wider in NPD contexts in which cocreation is involved. Some firms try to overcome this issue of complexity by also integrating consumers in evaluating cocreated ideas. Nevertheless, information overload is a challenge especially if the post-ideation stages of NPD are deadline sensitive, such as when maintaining the freshness and relevance of the consumer inputs in the ideation stage requires firms to wrap up the product development, commercialization, and postlaunch stages quickly.

Fourth, another challenge for firms is the fact that even though consumer cocreators might provide novel ideas, many

of these ideas may be infeasible from a production standpoint (Magnusson, Matthing, and Kristensson 2003). These trade-offs may be a major reason for underutilization of cocreation potential by some companies in early and postlaunch stages (Gruner and Homburg 2000); rather, these firms interact with consumers mainly at the commercialization stage (for prototype testing and market launch).

Ideas for future research. Unfortunately, little is known about impediments to the consumer cocreation process and more research is needed in this area. Important questions to be addressed include: Is a reliance on trade secrets detrimental to cocreation? How should firms manage the ownership of intellectual property when cocreating with consumers? How should firms manage the challenges of information overload and feasibility of consumer generated ideas?

Stimulators of Consumer Cocreation

Stimulators are firm-level moderators of the relationship between consumer motivators of cocreation and the degree of cocreation. Even consumers who are otherwise predisposed to active participation in cocreation activities may not engage in such activities with a particular firm, if the benefits involved are too low or the costs involved are too high. Accordingly, for a given level of consumer motivation for cocreation, firms have two generic options available to them to stimulate cocreation.

First, firms can stimulate consumer cocreation by *increasing the benefits* that consumers receive from participating in the cocreation process. Thus, creative approaches for enhancing the benefits or motivators mentioned earlier can be developed. Most consumers are probably motivated by a combination of these factors and therefore, a multi-pronged approach that targets several motivators (financial, social, technological, and psychological) would likely be most effective.

Second, firms can also stimulate cocreation by *reducing the costs* to consumers of participating in consumer cocreation (in terms of time, effort, and foregone opportunities) can also stimulate cocreation activities. One approach to reduce costs is to provide user toolkits, which ease the process of creating new ideas, products, and marketing materials for potential participants (von Hippel and Katz 2002). Another is to modularize the NPD process, so that consumers are assigned to or select into modules and can focus on the particular components of the NPD process for which they have the greatest expertise and passion, and are likely therefore to be more efficient at completing the cocreation task.

Ideas for future research. Currently, we know little about the actions and approaches that firms can take to stimulate participation in their NPD activities, even among those consumers who might be able and potentially willing to engage in such activities. Research on the most effective means of stimulating cocreation will therefore have great value to firms. In particular, research is needed to identify which benefits are the key drivers and which costs are the greatest inhibitors in a given

context, since the benefits and costs of cocreation are likely to vary across consumers and situations.

Consumer Cocreation at Different Stages of NPD

Having discussed potential antecedents of consumer cocreation in NPD, we now take a closer examination of issues related to cocreation at the different stages of the process: ideation, product development, commercialization, and postlaunch.

Consumer Cocreation at the Ideation and Product Development Stages

Previous research has shown that the early stages of the innovation process are vital for the success of NPD projects (Cooper 1993). A high degree of consumer cocreation at the ideation (i.e., idea generation) and product concept development stage can contribute significantly to new product and firm performance (Gruner and Homburg 2000). However, the relevant literature on cocreation is limited, focuses on B2B contexts, and hardly differentiates among different stages of the NPD process.

Traditionally, firms have involved consumers in cocreating value at the early stages of NPD using well-established marketing research techniques. For example, firms commonly use focus groups and lead users to develop and narrow down the product concept. However, these techniques are expensive and provide limited consumer-firm interactions. New technologies related to the World Wide Web that enable consumer-firm and consumer-consumer interactions have drastically changed the value cocreation landscape (Sawhney, Verona, and Prandelli 2005). Firms can now leverage these technologies to cocreate value with consumers in a more comprehensive and efficient manner (Pralhad and Ramaswamy 2004). In the ideation stage, firms can use social media to vastly increase both the breadth and the depth of inputs it can obtain from consumers at a significantly lower expense (Evans and Wolf 2005; Hull 2004). In addition, they can involve consumers in the concept development stage by sharing the concept with them and actively seeking their input (Grewal, Lilien, and Mallapragada 2006). Overall, involving consumers in the early stages of NPD can save both time and expense and reduce the risk of failure of the new product.

Ideas for future research. A key question is how consumers can be incentivized to develop more and better ideas. Furthermore, mechanisms have to be developed to recognize the “winner” ideas from the numerous possibilities suggested by consumers. Moreover, since consumers self-select into the cocreation process, how a firm can involve different types of consumers into value cocreation remains an important question. Since not all ideas can be developed further (and thus not all consumers can be satisfied), how can a firm better manage consumer expectations and strengthen its relationship with consumers?

Consumer Cocreation at the Commercialization and Postlaunch Stages

The value of involving consumers in the commercialization and postlaunch stages has been scarcely studied in previous research, despite the fact that these stages are very critical and often the most expensive and risky stages (Crawford and Benedetto 2003). Therefore, we now focus on the opportunities and challenges in cocreating value at these latter stages of NPD.

The involvement of consumers in value cocreation at the product commercialization and postlaunch stages is common in many contexts and is becoming popular in others (Nambisan and Baron 2009). For example, many commercially available software products (e.g., SAS and Stata) significantly benefit from consumer participation in their development after the launch (O'Hern and Rindfleisch 2009). In addition, many successful computer game modifications are developed by players (Jeppesen and Molin 2003).

The proliferation of social technologies such as online customer communities, social networking sites, instant messaging, and wikis have created both opportunities and challenges for firms in managing the commercialization and the postlaunch phase of a NPD and marketing process. Specifically, new technologies provide valuable opportunities to cocreate value in each of the three steps involved in the purchase process, namely, awareness, trial, and repeat purchase.

Generating consumer *awareness* is critical to the success of any new product. Normally, this is accomplished through advertising and promotional activities. However, awareness can also be created by releasing information to the firms' consumer community and via other social media tools resulting in "buzz" about the product or service. Such harnessing of the consumer-firm relationship to create positive awareness for the firm's new product accrues significant savings to the firm in terms of advertising and promotion expenses. Additionally, higher awareness for a product can stimulate faster diffusion, thus improving its likelihood of success.

Once consumers become aware of and interested in a new product, *trial* needs to be instigated. Involving consumers in the NPD process can spur trial by reducing the risk associated with trial of a new product and dispelling many doubts in the minds of the potential consumers. Proactively, encouraging consumer-consumer interactions and support can help many consumers understand what the product is about and how it can be used. This is important because the experience of other consumers can be more meaningful for potential buyers than information provided by the company. Reactions of consumers to the company's product features or price can also help companies manage any potentially negative perceptions and modify features before they become a serious problem. A company can get actively involved in this process by providing venues to its consumers to share such experiences. Many are already doing so. For example, Del Monte has introduced two consumer communities, "I Love My Dog" and "Moms Online Community" where canine owners and moms, respectively, can interact and

share ideas (Greengard 2008). This type of consumer-firm interaction allows the firm to strengthen its relationship with its end consumers, monitor their experiences to improve its product and the associated marketing strategy, and save money in areas such as advertising and product support.

The third step is *repeat purchase* by adopters. Active monitoring of social media and feedback from consumers can help a firm understand the reasons for low repurchase rates or understand ways to increase repeat purchase. With new technologies, all this is possible in a much shorter time span than with traditional methods. Furthermore, quality problems that may be difficult to understand via traditional methods can be relatively easily detected through consumer conversations about them. Thus, consumer involvement can act as an "early warning system." At the postlaunch stage, consumer participation may empower the consumers to respond to a product or service failure in a manner that abates negative outcomes of the failure (Dong, Evans, and Zou 2008).

Ideas for future research. The key benefits of using consumers to cocreate value at the commercialization and postlaunch stages come from leveraging new technologies that enable social interactions. Before cocreation can happen, the firm has to identify different ways in which it can cocreate value and also identify and manage consumers' roles throughout the innovation process (Ostrom et al. 2010). Methods for doing so are still in their infancy. The transfer of information at lightning speed and the strong word-of-mouth effect made possible due to new social technologies makes measurement of awareness of a new product and attribution of this awareness to various sources immensely more challenging.

In addition, the links between a firm's efforts for value cocreation to its success in the marketplace (e.g., trial and repurchase, overall sales and returns, savings on consumer education, and consumer service) are not well understood. To justify investment in value cocreation, these links have to be revealed and measured. Finally, the rapid pace of events due to these technologies requires firms to understand how they can monitor markets continuously and respond quickly to market conditions. Therefore, metrics that allow a firm to monitor the value cocreation efforts quickly and comprehensively need to be developed. Such metrics are critical for the firm to reap the benefits from cocreation while managing any negative fallout effectively.

Outcomes of Consumer Cocreation

The shift toward consumer cocreation discussed in the preceding sections has substantial implications both for firms and consumers. For product and service firms alike, the way consumer cocreation process is defined and implemented has a direct impact on their measurable success (Ostrom et al. 2010; Prahalad and Ramaswamy 2004). In the following sections, we identify the most important outcomes of cocreation, their benefits and challenges, for firms on one side and for consumers on the other.

Positive Outcomes of Cocreation

Marketing practice and theory increasingly recognize the potential that cocreation has for the firm's performance (Prahalad and Ramaswamy 2000, 2004). By successfully implementing and managing cocreation, a firm can create two significant sources of competitive advantages (Hull 2004; Payne, Storbacka, and Frow 2008; Prahalad and Ramaswamy 2000): (a) productivity gains through increased *efficiency* (e.g., by reducing operational costs) and (b) improved *effectiveness* (e.g., through an enhancement of a product value, innovativeness and learning capabilities, and a better fit with consumer needs).

Cocreation increases productivity and efficiency gains through *cost-minimization*, since employees' input can be substituted with consumers' input in the product/service development (Bowers, Martin, and Luker 1990; Lovelock and Young 1979). Cost saving arise from various sources: virtually costless acquisition of consumer ideas and outsourcing of NPD efforts, which decrease the need for inputs from traditional market research and employees (Evans and Wolf 2005; Hull 2004; Mills, Chase, and Margulies 1983), reduced risk of product failure and inventory holding costs (Cook 2008; Ogawa and Piller 2006), faster speed-to-market (Fang 2008; Joshi and Sharma 2004; Sawhney, Verona, and Prandelli 2005), and postlaunch gains through continuous product improvements and exploration of additional usages (Grewal, Lilien, and Mallapragada 2006; Muñiz and Schau 2005; Xie, Bagozzi, and Troye 2008). These outcomes may directly influence organizational performance, increasing the efficiency of operations, product/service turnover, employee satisfaction and ultimately, revenues and profitability (see also Ostrom et al. 2010).

In addition, cocreation can provide important gains in the *effectiveness* of cocreated products, through their closer fit to consumer needs and higher commercial potential (Fang, Palmatier, and Evans 2008; Lilien et al. 2002). Cocreated products are often shown to possess high expected benefits and novelty, which ultimately increases commercial attractiveness (Franke, von Hippel, and Schreier 2006; Magnusson, Matthing, and Kristensson 2003) and allows for better product differentiation (Song and Adams 1993). A closer preference fit of cocreated product/services, in turn, can increase positive attitudes toward the product, subsequent purchase intentions, willingness-to-pay, and referrals/word of mouth (Franke, Keinz, and Steger 2009; Mathwick, Wiertz, and DeRuyter 2007). Involvement in a cocreation process makes a consumer better acquainted with the challenges, costs, and constraints of creating a new product, resulting in adjustments in preferences and better appreciation of the product (Dabholkar, 1990; Joshi and Sharma 2004). Thus, through the delivery of increased value and by increasing the number of connection points between the firm and consumers, cocreation may strengthen consumer-firm relationships and thereby improve customer equity (see also discussions by Kumar et al. 2010 and van Doorn et al. 2010 in the current issue).

Ideas for future research. Unfortunately, the true potential of consumer cocreation is still largely unexplored and these topics

offer fruitful avenues for future research. In particular, there is a need to learn more about outcomes of involving end consumers. Available cocreation studies are mostly conducted in a B2B context, where solution selling and complete customization are particularly viable (Bolton and Saxena-Iyer 2009; Fang 2008). Cocreation may impose additional challenges in B2C contexts, due to the need for incorporating consumer heterogeneity in the product customization, managing vast numbers of consumer ideas, and mass-producing such customized products. Within consumer markets, however, the implementation of consumer cocreation strategies may be easier in service settings (Bolton and Saxena-Iyer 2009; Ostrom et al. 2010) than in traditional packaged goods contexts (Etgar 2008). Hence, it is important to identify markets and situations where cocreation is likely to be a profitable strategy.

It is therefore critical to define the measures of economic and noneconomic benefits of consumer cocreation in diverse business contexts (e.g., goods vs. services), and across markets. In other words, how can a firm measure the benefits of the cocreation process? For example, how can a firm evaluate the contribution of some of its consumers in attracting yet new consumers (e.g., word of mouth), providing product support (e.g., via support forums), and providing ideas for new product opportunities? Although firms use simple metrics to evaluate the outcomes in the cocreation process, these have many issues since they fail to capture the multi-faceted nature of the consumer-firm relationship and its complex outcomes (Algesheimer et al. 2010).

Furthermore, more research is warranted on the effects of cocreation on firm's outcomes such as short-term and long-term revenues and profitability. It is important to link cocreation with marketing accountability metrics. More sophisticated metrics have to be developed and tested that can be used to better evaluate the cocreation process—metrics to monitor consumer input, categorize them in a user friendly manner, and evaluate them. There is also need for research on linking consumer cocreation to financial metrics such as Tobin's Q, the P/E ratio, and so on. So far, research is lacking in this direction despite the critical importance of this issue.

A further important research imperative is to directly link cocreation with relationship building efforts, customer loyalty and ultimately with customer lifetime value metrics. There may be occasions where preferred consumer- and firm-related outcomes may even be in opposition to each other (e.g., the firm's desire for efficiency and cost-reduction and the consumer's desire for customization and close preference fit of the product).

Finally, as cocreation gains momentum and markets mature, firms in the same market are likely to compete aggressively in attracting and retaining important cocreators. Such competition may undermine the benefits of cocreation. More research into the effects of competition (between firms as well as between firms and their cocreators) in various markets is warranted.

Costs and Risks of Cocreation

The benefits of cocreation for a firm do not come without challenges. Since many of the impediments and risks of cocreation

have been discussed in the previous sections, we elaborate here only on those directly related to firm level outcomes. One of the major challenges of cocreation is the diminished *control* over a firm's strategic management and planning. Innovation is a vital function of management and has a crucial impact on business performance (Ernst, Hoyer, Krafft, and Krieger 2010; Han, Kim, and Srivastava 1998). Hence, transferring control over innovation processes and their outcomes from a firm to its consumers aggravates a firm's strategic planning efforts (Moorman and Miner 1998). For example, empowering consumers at early stages may increase the risk of focusing on incremental innovation rather than more radical innovation. Moreover, as a result of cocreation, a firm's brand management is affected and co-managed by consumers, which increases uncertainty for the firm (Pitt et al. 2006). When General Motors invited users to take existing video clips of its Chevrolet Tahoe SUV and insert their own words to create new versions of their ads, the most popular user-generated ads were satire ads that attacked the SUV for its low gas mileage (Bosman 2006). Much of the buzz around the ads concerned the vehicle's harmful effects on the environment and some user-generated ads also included obscenities to describe the typical users of the vehicle.

Besides decreasing control, the empowerment of consumers increases *complexity* of managing firm's objectives and interests of diverse stakeholders (employees, shareholders, cocreators, and other types of consumers). Coordination requirements, constraints and other types of nonmonetary costs increase with the number of cocreators included (Bendapudi and Leone 2003; Blazevic and Lievens 2008). Flexible strategies of cooperation and communication are required for unpaid cocreators relative to employees. Consumers compare potential benefits with costs and risks of engaging in cocreation activities (Etgar 2008; O'Hern and Rindfleisch 2009). Cocreation requires both monetary and nonmonetary investments from consumers (e.g., costs of time, resources, physical, and psychological efforts to learn) and may entail some risks for consumers (e.g., the risk of experiencing a failure despite invested effort, the perceived shifting of the responsibility for performance from firms to consumers, the perceived "lock in" in the relationship, and the loss of freedom of choice; Bolton and Saxena-Iyer 2009; Etgar 2008).

Moreover, typical employee appraisal procedures are not likely to apply (disciplinary actions in particular), since consumers are not within the direct control of firms. Notable challenges exist with respect to the management of misperformance due to consumer's lack of required skills (Etgar 2008) and the risk of retaliation and defection, if a consumer's idea is not selected. The product preference fit is highly susceptible to a consumer's ability to clearly articulate his or her preferences and future needs (Franke, Keinz, and Steger 2009; Mullins and Sutherland 1998). However, consumers are more likely to take credit than to take blame in cocreation processes. Effects of cocreation on consumers are asymmetrical and apply only to positive outcomes with high perceived quality and satisfaction and not to poor outcomes (Bendapudi and Leone 2003). This notion is exacerbated with the fact that preferred outcomes for consumers may be in opposition to the firm-preferred outcomes (e.g., between firm's

aim for efficiency and cost-reduction and consumer's desire for customization and close preference fit of the product).

Additionally, empowered with identical toolkits as in-house developers, cocreators can become a formidable source of competition, since they may be unwilling to purchase a firm's new releases or may develop competing versions that damage the firm's own product sales and brand equity (Cook 2008; Fodness, Pitegoff, and Sautter 1993). Yet, any attempt to restrict the freedom of cocreators to alter and share new product improvements decreases their willingness to contribute and increases the risk of consumer reactance.

Ideas for future research. The concerns described above may cause risk-averse and predictability-seeking firms to avoid cocreation. More empirical and analytical studies are warranted on the trade-offs between the benefits and costs of cocreation in the short and long run. Researchers and managers need to identify ways of planning, managing, and implementing complex processes of cocreation on all levels. As Ostrom et al. (2010, p. 15) note, these new ways need to take into account the differences between incremental and radical innovation, together with the leverage that can be gained from cocreation.

Moreover, the following research questions warrant further attention: How strong and how sustainable is consumer cocreation as a competitive strategy in contemporary markets relative to traditional approaches to NPD? How strong is the disadvantage of losing control relative to improved innovativeness? What is the effect of cocreation on brand image and positioning? Does cocreation hinder radical innovation? How can firms incorporate cocreation in their strategic planning, given the complexity and potential loss of control? How do consumers make trade-offs between different outcomes and costs of cocreation and how can a firm respond to these challenges?

Summary and Additional Avenues for Research

In summary, the area of consumer cocreation is in its infancy and many aspects are not well understood. In this article, we have outlined and discussed a conceptual framework that focuses on the degree of consumer cocreation in NPD. We examined (a) the major stimulators and impediments to this process, (b) the impact of cocreation at each stage of the NPD process, and (c) the various firm-related and consumer-related outcomes. A summary of the key points and research ideas is presented in Table 1. It is our hope that our suggestions will stimulate researchers to investigate these key issues.

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