

NEW PRODUCT DEVELOPMENT: IMPLICATIONS OF CO - CREATION

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Abstract— Taking into consideration the shift from product or firm-centric approach towards the multiple personalized interactions of the client with a product, this paper marks the company and client perspective regarding co-creation.

In the past years more companies started to consider involving customers in different stages of product development, with notable success. Replacing the classic way of assessing customer needs – by market research but without a straight forward way of matching a solution to it, co-creation has proven to be a relevant and competitive advantage for those companies that are able to assume the risks, build and control the co-creation process.

Keywords—Co-creation, new product development, clients motivation, company benefits

I. INTRODUCTION

MENTIONED for the first time in 2000 the term of co-creation has been used in the context of defining a new type of consumer "active", who will get involved, with the help of the internet, in defining the value that the services have.

Unlike the beginning of the 70s, when consumers were seen as a "passive buyer" with a predefined role of consumption, at the beginning of the 21st-century consumers are those who create and become a part of an extended network. The central idea is that this new type of consumer, who communicates unrestricted with the firm regarding products of its interest, changes the dynamic of the market – the main difference is that consumers become a new source of competitive advantage for the company [1].

As a consequence, the building of communities has proven to be an efficient and fast approach to develop new products [2]. Very often in research and business articles the phrase "community brands" has been used – referring to those brands created by customer communities and their interactions [3]-[6].

According to Franke and Shah [3] customers' motivation can be determined by the factor called *community* – which includes the motivations and benefits delivered by the sharing of information between members of the community but also the so-called "personal benefit factor". The last mentioned one refers

to the personal benefits that may be obtained, from financial ones as well as psychological rewards like attention.

The purpose of this article is to analyze and review the impact and implications of developing new products by co-creation, for both company and customers. Following the rest of the paper the term client, user define the entity who benefits of a certain good or that has the interest to do so. The term product and service are also used interchangeable.

II. CO – CREATION: CONCEPT AND TYPOLOGY

A. What is co – creation?

The earliest analysis of the concept of co-creation, has been done by Prahalad and Ramaswamy and will help to understand the following ideas in this paper [7]. As they explain, there is a clear distinction between co-creating with firms' clients and paying lots of attention to the customer and setting a high level of customer service. Instead, authors define co-creation as the opportunity for the firm to define the premises in order to set the right manners to personalize all interactions and experiences together with the clients.

Offering flexibility so that the customer can do things as they want – the practice of self-service is not how authors define co-creation. If companies allow customers to construct their experience with the product, service as they consider it fits them, it will be a „joint creation of value”.

The classical manner in which firms are used to assess clients needs and define a corresponding solution is market research. What co-creation proposes is to experience the solution or service the same way clients do in real life, at all touch points.

B. Typology of co – creation activities

A major contribution in defining a classification in regards to co-creation activities takes into consideration criteria concerning the type of information that will be inputted following a co-creation process and type of reward that determines the interested ones, from outside the company, to participate.

The above-mentioned criteria have led to *four types of co-creation activities*, as seen in TABLE I [8]:

TABLE I
 Different types of co – creation activities

	<i>Activity</i>	<i>Activity</i>
Criteria 1	Lead user	Technical solution contests
	Toolkit for user co-design	Ideation contests
	Criteria 2	

C. The socio – economic effects of the innovation models based on co – creation

Taking into consideration the co-creation processes that imply design, the *Business Innovation Observatory* report mentions the most important socio-economic effects of innovation models but also the benefits, as it follows [9]:

- 1) *Increasing speed to market;*
- 2) *Lower cost, resulting in increased profits for companies and / or reduced sales prices for customers;*
- 3) *Increased product quality, resulting in increased sales for a company and greater customer satisfaction;*
- 4) *Increased product quality, resulting in increased sales for a company and greater customer satisfaction.*

III. COMPANY IMPACT

A. Company motivation in approaching co – creation strategy

Among the strongest motivations that have determined companies to approach co-creation we mention *understanding new needs* (75%), *competitive advantage* (73%) and *improving customer loyalty* (67%) [10]. At the opposite end, high brand awareness and attracting new customers scored around 40%. The above percentages confirm the idea that the biggest challenge firms face continues to be understanding clients and what they need.

In regards to the advantages, the impact that these co-creating activities have on the market demonstrate the most priceless benefit that a company may have: *personalize each interaction with clients and obtaining a source of competitive advantage.*

Co-creation design as a new way of value creation report lists a series of indirect effects of the co-creation activities in regards to design:

- 1) *Increased attitudinal loyalty of customers towards service providers;*
- 2) *Increased perceived value of, and likelihood of participation in future co-creation;*
- 3) *Increased chances of positive word-of-mouth customer-to-customer communication.*

Firms may stimulate consumer co-creation by increasing the benefits that these receive following the participation in a co-creation process: a mix of different types of benefits may be approached in order to be efficient (financial benefits, technological or

psychological benefits). Also, co-creation may be intensified by reducing the costs generated on the consumer side – time, effort or missed opportunities. Toolkits for co-creation can ease the co-creation process and help generate new ideas [11]. As for the firm, it can be motivating to have:

- a) *High benefits that firm will reflect on consumer;*
- b) *Low costs allocated.*

One of the major issues for any company is to answer constantly the question "what is it that clients want" and co-creation may give the answers as long as a tool is created so that it connects feedback, ideas coming straight from clients to the company. For example, in the auto industry popular car makers such as Renault, BMW or Daimler have designed competitions in order to get detailed input on how customers see things regarding car design, the exterior of the car.

Traditional market research managers to a certain limited extent to identify what consumers want, the proof stands in the high percentage of new products that have failed due to a weak understanding of needs. But, besides this aspect, the failure for this products has proven to be connected to that information that is timely and reliable to customer preferences has been critical for successful product development. In the case of companies like Threadless, besides reducing inventories, eliminating markdown and increasing customer loyalty, co-creation has helped to investigate the entire market, not just a sample – as they test each concept [12].

B. Challenges and overcoming for companies when approaching co – creation

Main challenges for firms is to understand how to motivate consumers to take part in processes with the purpose to generate ideas, test products or evaluate. More than this, firms face a series of constraints regarding the interactions with consumers [10]:

- 1) *Urgency of pressing day to day business demand;*
- 2) *Lack of formal processes;*
- 3) *Lack of skills within organization;*
- 4) *Difficulty to show unique value to the customer; and*
- 5) *Difficulty in interacting with the end consumer.*

In order to analyze the degree of the co-creation effort, purpose and intensity of approaching co-creation have been taken into account by defining three sets of antecedents of the degree of co-creation – illustrated in fig. 1 The conceptual framework of consumer co-creation: *consumer - level motivators, firm - level impediments, and firm - level simulators* [11]. Hoyer's research [11] identifies a series of aspects that influence the availability of a company in setting co-creation:

- a) *transparency*

as in concerns about secrecy that companies might have

when forced to reveal information about product development during co-creation process;

b) intellectual property

firms might have to answer questions regarding ownership of intellectual property. Those firms that wish to have a high control over property are likely to face lower degree of co-creation;

c) the high volume of information

co-creation activities may lead to a high volume of information due to consumers input. But some firms can

get consumers involved also in evaluating ideas so that they lower the volume;

d) feasibility of the concepts and ideas generated as a result of co-creating activities

not all ideas are able to be tested in production since they prove beforehand to be infeasible. Companies may choose to interact more with consumers during commercialization stage.

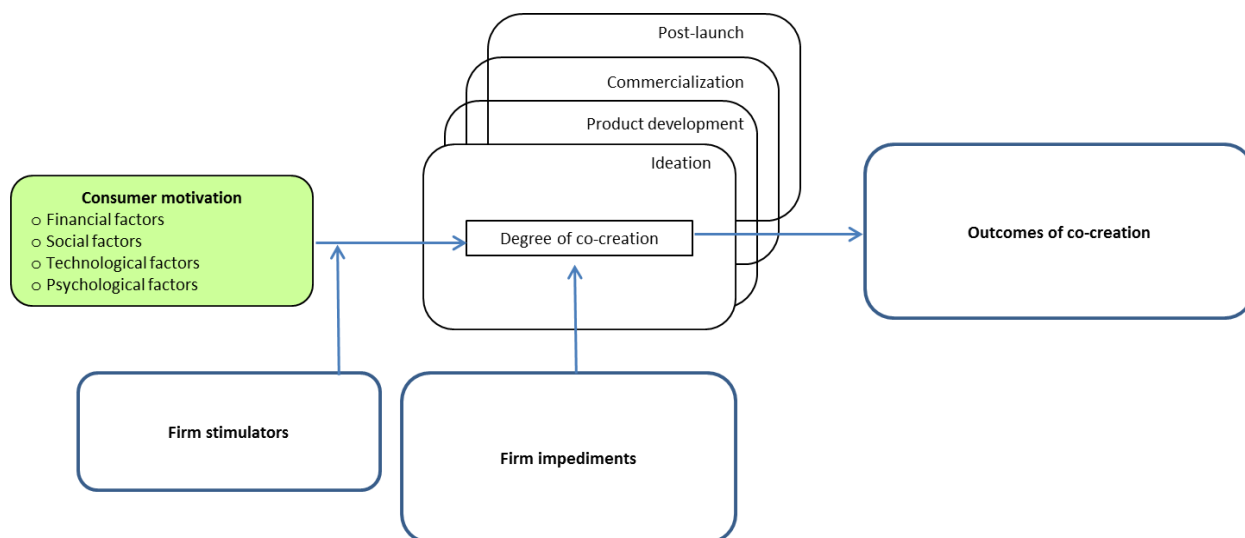


Fig. 1. The conceptual framework of consumer co - creation

Another aspect to be considered is the financial one, the resources that the company has. Available funds in order to develop a co-creation platform or contests influence the number of co-creators willing to participate in the process [9]. Take for example, the case of CoContest –crowdsourcing platform that supports the design, the argument that the business model implies co-creation has made it difficult for the firm to obtain loans. The inconvenience came from the fact that it was difficult for the firm to prove that the platform has the ability to attract co-creators as well as clients. The founders considered it easier in this situation to apply for venture capital.

Since Heineken has proven differently – looking at the speed of launching the Ideas Brewery platform and the ability to attract a relevant number of fans, we may believe that the taking place of co-creation depends also on the type of firm: startup or multinational company.

Co-creation design as a new way of value creation report that follows the strategy of European Union for innovation, mentions as a challenge the points of interest for the consumer and company as illustrated in fig. 2. In other words, consumers have their own way of relating to

what value is to them, a full list of expectations, needs and aspirations. On the other side companies define their success by relating operations to company resources or processes; they think about optimizing logistics or having a good customer relationship management. While companies are busy designing a product, customers are more preoccupied about talking and designing their new experiences.

In order to explain this mismatch the reports refer to Saturn model launched by GM in 1985. Although the models seem to have been developed while close working with the client the results were positive in terms of design and sales. But, the model has been stopped by the company since it did not make it profitable.

Most of the research done in the area of co-creation has more a qualitative approach meaning there isn't a large statistical sample of companies to prove the high success of co-creation that would determine them to overcome all challenges. There are of course several popular brands that made it possible: Lays, P&G, Starbucks, Microsoft, Heineken.



Fig. 2. Points of interest for consumer and company

Among the barriers that a company may encounter when interested to create a co-creation process is finding the right partner to develop an online tool to become their dedicated space for consumers, where they can engage to come up with ideas.

C. Consumer motivation

In the same research mentioned above [11] that defined that conceptual framework of consumer co-creation authors takes into account four stages of developing a new product: idea creation, product development, commercialization and post launch. Without specifying where the co-creation activities take place - online or offline environment, the framework presented in fig. 2 states *four categories of factors that define consumer motivation* and have the capacity of influencing the degree of success for the activities: financial, social, technological or psychological as it can be seen in TABLE II.

In the past ten years concepts like lead users or market mavens have been often mentioned in research studies as those specific individuals who qualify for becoming a good co-creation partner for firms. What makes these individuals fit to take part in co-creation activities is their interest in new discussion topics about products and the fact that they face certain situations long before the rest of people which gives them the advantage to offer support and define their own solutions. In order to identify them company representatives have to identify specific locations or events that would be of interest to lead users, for example product fairs or congresses, an online dedicated platform where they freely express their ideas or guide others with respect to certain products or services.

TABLE II
 EXAMPLES OF CONSUMER MOTIVATORS

Type of motivators	Earnings
Direct and indirect financial earnings	<ul style="list-style-type: none"> ○ prizes ○ profit sharing coming from new products ○ earnings from the intellectual property rights ○ earnings as a result of the awareness created by participating in the co-creation activities
Social earnings	<ul style="list-style-type: none"> ○ title awards ○ status change ○ self esteem ○ collective self-esteem ○ networking with relevant connections
Earnings like knowledge input on technology	<ul style="list-style-type: none"> ○ participation in events offered by producers
Psychological earnings	<ul style="list-style-type: none"> ○ the increase of intrinsic motivation, of a sense of expression and pride ○ the increase of satisfaction from being able to contribute ○ acquiring a sense of altruism ○ dissatisfaction towards a product they often use

IV. CRITERIA FOR THE SUCCESS OF THE CO - CREATION

Brand together authors studied the community with the same name and concluded that two main conditions have to take place in order for people to stay involved in a consumer community dedicated to a certain product [13]

1) *the topic (product, service) that they are requested to contribute for has to be of high interest for them personally;*

2) *consumers have to convince that their ideas will be appreciated by the company, that they are being listened to, that they receive feedback, that their contribution will be implemented.*

Although the top driver for companies to consider co-creation was mentioned "understanding new needs" it seems that top three declared results were new products or services, competitive advantage and new customers [10].

What Piller suggests [12] by analyzing Threadless co-creation case is that this type of innovation that implies developing new products together with the consumers, is feasible if a series of conditions are being met:

- a) companies are facing the uncertainty regarding consumer demand;
- b) companies are facing the uncertainty regarding consumer demand;
- c) the product has to have a modular character so that co-creating activities fit into specific components. For example, consumers can be invited to contribute to just those components that the company considers that are exposed to a high degree of uncertainty;
- d) participants who will offer input on new products and services have to motivate to engage and have a certain commitment to the product;
- e) the company has to have the ability to create a community or connect to an existing one and maintain a perfectly transparent process since the first few interactions until the final stages of the product.

Analyzing English and Chinese-speaking online basketball communities the research initiated few years ago by Jawecki, Füller and Gebauer found that culture does have an influence creative processes. As the study concludes, from a practical perspective, companies that aim to collaborate with communities across cultures have to align the interaction with the members' different expectations and routines. Further, what communities consider as creative and innovative may depend on culture [14].

In order to understand what would better motivate potential clients to get involved in such a process, one future research might take into account characteristics and psychology of Romanians and their relation to their products of interest, especially in the online environment. What would be of interest is to see whether consumers are interested in contributing, if they react and are willing to offer feedback when the product does not fit their needs.

V. CONCLUSIONS

The most remarkable effect that co-creation has is over the market concept; basically co-creation has the power to force companies to look at the market and not see "an aggregation of consumers or a target for the firm's offering". This innovative approach has created the opportunity for firms to define the instrument they use to shape consumers' expectations and experiences. Taking all this into consideration, the market has been defined also as a forum where [1]:

- 1) firms and consumers converge;
- 2) demand and supply and contextual;
- 3) value is co-created and multiple points of interactions.

Since demand is considered to be contextual, there is a high possibility that customers will not be able to predict their experiences which in turn may imply that traditional forecasting will no longer have a valuable impact on companies.

The classical way of communication considered the market as a target where firms are the ones that propagate information to customers while a market where co-creation happens allows consumers to interact among

themselves.

Working with a sample of more than 300 managers with the aim to understand how development projects applied customer co-creation in terms of communication in order to address future customer needs, one major research has concluded that good results from co-creation with customers are generally caused by *frequency, direction and content* [15]. The same study suggests that in order to gain benefits while working with incremental innovation, company representatives have to become immersed in the customers' context as much as possible. In other words, spend as much time communicating with customers in a democratic manner, using social media or face to face interaction will gain firms a valuable insight.

Several benefits have been presented on the company side like *productivity gains* through *increased efficiency*, by reducing operational costs, and *improved effectiveness* through an enhancement of a product value, innovativeness and better fit with consumer needs [11].

VI. LIMITATIONS AND FUTURE RESEARCH

This work addresses the concept of co-creation and its proven implications on both firm and consumer side. When taken in the Romanian context, we haven't found major evidence of firms that consider innovating through co-creation. As mentioned before, co-creation has proven to offer much more precise input for firms – comparing to market research conclusions. Yet, co-creation has been used in Romania, by market research companies in order to create a new instrument that would help researchers define their qualitative methodology. To be more precise, in this context co-creation offers the opportunity for researchers, through an online community, to get a fast validation of new ideas and have impactful recommendations.

With the occasion of this paper, we did not have the possibility to discuss topics like user-generated brands or user communities. But, on a future occasion we may take into account to define the implications, efforts that go into creating and growing a user community.

What we consider would help to have a better understanding of the extent to which firms in Romania are aware of this valuable resource they have – customers, we first need to evaluate whether companies are familiar with the naming and the concept of co-creation or any other ways of innovating. Again, we have not found any evidence of any research in Romania having as target companies, that would discuss co-creation. Similar papers like this one make use of case studies in order to explain co-creation but this means that we cannot generalize the findings. So, empirical evidence has not been found in Romania but there are companies that suggest future initiatives in this direction. One practical example is Ciserom, the Romanian socks manufacturer that has recently invited its consumers to submit their designs. Evaluated based on Facebook likes

and a jury examination from three well-known designers and communication experts, the winner will have its design sent in production and the popular socks will be out for sale. We intend to ask Ciserom's support in offering us the details of how they handled the entire process and the results. The conceptual framework presented in this paper can be used as a clear direction to analyze the degree of co-creation.

It is highly possible that on a large scale company representatives in charge of new product development have not considered giving more power to the customers as to actually be in contact with them at all times, allow them to shape their experiences.

Another future research topic that would help understand how to use co-creation is related to the instrument that lies at the heart of co-creation strategy. Some companies have chosen to design online platforms where consumers can participate in different manners, for example a contest – in the automotive industry customers submit an idea for a navigation system, after six weeks of evaluation best ideas have been rewarded monetary [4].

Web 2.0 tools include multimedia diaries, forums and chat groups which have allowed the firm to define tasks for consumers.

As far as public information, most of the reviewed research shows that firms have defined their instrument online, taking advantage of the internet that has had a positive impact on the customer-client relation. From this point of view, firms in Romania have the advantage of the last years increased the interest of the population in mobile phones and mobile phone data usage. As reports show, 75% of internet users access daily their mobile data in order to check email, communicate or access online maps[16].

Another reason for expecting high implications from an online co-creation process is the country position, 2nd in Europe after Belgium, in terms of internet speed. To sum up, people spend a lot of time online, more than 30% accessing social networks, surfing the internet or looking for products. Again, in regards to online activity many studies have addressed topics like the motivation of consumers to participate in online co-creation

activities and benefits for firms but very few have analyzed the volume of information that web 2.0 generates.

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