

Social interactions impact on product and service development

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Abstract. *Digital marketing has enabled a new style of consumerism. Nowadays consumers play active roles in product designing and service development. Social media and user-generated content give consumers possibilities to have some interactions regarding the new or existing product. This gives new opportunities to developers and empowers costumers to be involved in product and service development more than they used to be. While traditional marketing literature typically illustrates consumers as passive recipients this paper will show that digital marketing gives them chance to be actively involved in product and service development, tries to define how social interactions effects development and offers a conceptual model for future research. From the literature, it has emerged that social influence has a big impact on product and service development. This study will be important mostly for those companies who try to implement digital technologies now, as for companies who already adopted these technologies some time ago but they still can't find benefits from it. In the academic field, this paper will help researchers for their future work. Marketing inferences are drawn, and direction for future research is developed in the entire manuscript.*

Keywords: digital marketing, social interactions, product development, service development.

Introduction

Digitalization has led a new culture in marketing where consumers are more engaged in developing products and services and designing them. All this has started new types of interactions named as social interactions. According to Turner (1998), social interactions are the situation where the behaviours of one actor are consciously recognized by and influence the behaviours of another actor. From a design perspective, social technologies present opportunities, challenges and risks as consumers assume new roles as co-designers, co-creators, co-developers and co-producers. Digital technologies interaction provides a new participatory culture where costumers are active participants and it has implications for the practice of new product development as consumer expectations and behaviour evolves and co-creation becomes the norm (Bratianu et al., 2020; Gerpot, 2018; Vere De, 2014).

More than 40% of the world population is online nowadays and over half of the online adults in Europe have 2 more social networks such as Facebook, Google+ or LinkedIn and they use those social networks instead of traditional search engines (ICT facts and figures 2017, 2017). According to this, they leave some comments, reviews and their attitudes about product or service in social networks and that forms social interactions. Finally, all this information goes to the producers or to sellers and they try to take into account all those advantages or disadvantages of these products or services. As a result, companies are proactively engaging in new social media marketing strategies and tactics. General Motors has moved 25% of its global marketing spending on the Cadillac brand into digital platforms compared to 17% three years ago, with an emphasis on a video distributed through digital and social media. American Express has 1.5 million card members participating in its Sync program that lets members match their cards to their Facebook, Foursquare, and Twitter social media accounts for browsing offers and making transactions (Hudson et al., 2016). Marketers also see the value of social media networking, brand referrals and information sharing. According to Facebook, the average user has 130 friends

on the social network, and when people hear about a product or service from a friend, they become a customer at a 15% higher rate than when they find out about it through other means (Hudson et al., 2016).

Most of the existing research only deals with the characteristics of social media and how the differences from traditional media are challenging marketing strategies (e.g. Kietzmann et al., 2011). These studies are more descriptive than empirical, and the limited findings of the effects of social media interaction are mixed. While there is an enthusiastic call for encouraging more social media interaction for companies' survival in modern markets (Kaplan & Haenlein, 2010), results to date are inconclusive. For example, a study by SocialBakers (2014) shows that the amount of social media interactions leads to more visits to the brand's website, while others suggest that social media engagements are ineffective in stimulating brand loyalty and sales (Traphagen, 2015).

The current research aims at uncovering the menace of social interactions through a literature review and proposes a conceptual model depicting the trajectory through which SI impact product and service development. As a matter of fact, the results of this research contribute to the theoretical debate concerning the importance of SI in the decision-making process of a consumer.

The structure of the paper is as follows: firstly, it begins with a review of the essential prior studies of social interactions impact on product and service development. The latter part of the research presents the approach and the method used and proceeded to the development of a conceptual framework and research hypothesis. Finally, the implication for theory and practice, conclusion and future research directions are presented.

Literature review

Social technologies have led to the imminent promise of unprecedented user participation and collective content generation, sharing and personalization. Product designers can now expect explicit consumer participation and active engagement in all stages of new product development, from user-centered research, co-design and marketing to product adaptive customization. This culture noted by (Strahilevitz & Benkler, 2007) describes a model where individuals are directly involved in product or service development or are engaged in its production process.

In general, consumers' propensity to adopt new products is driven by a variety of economic factors (such as product price, availability, income, quality, brand etc.), as well as by social influences (such as observing others with the product, information provided by friends on the quality of a product, consumer reviews etc.) (Cojocararu et al., 2013).

The presumption was common in pre-industrial societies (the first wave), however, the following (second) wave of mass manufacturing and marketisation separated society into the distinct roles of producers and consumers. Whilst the design and production of goods for personal consumption was commonplace prior to the industrial revolution, the dominance of the factory and standardised manufacture disempowered user-makers, and resulted in consumer passivity. Toffler's 'third wave' signals the reintegration of production and consumption, a concept that predates the impact of social media (Ritzer & Jurgenson, 2010).

People like to be seen by others while doing good because they are concerned about what others may think about their observed behaviour. For example, people act more pro-socially (i.e., donate more money) in public than in private during charitable fund-raising events. Consumers are also less price-sensitive and pay more in social settings than in private (Roy et al., 2016). That describes their interactions and influence on product and service development. While

starting online shopping most consumers go through reviews and comments about the product or service and they somehow evaluate them. After buying them they also get back to the websites and try to leave some kind of interactions. In some cases, even companies ask them to do so as they use this feedback for improvement in future.

In economic terms, agents are the units who interact with one another. The notion of an agent embraces persons, firms, and other entities such as nonprofit organizations and governments. The essential characteristic of an economic agent is not its physical form but rather its status as a decision-maker. The concept of an agent as a decision-maker carries within it a straightforward answer to the question of how agents interact. Agents interact through their chosen actions. An action chosen by one agent may affect the actions of other agents (Manski, 2000).

Different authors discuss how new product launch is affected by social interactions and they stress the idea that mostly it is affected by social media. For example, according to Roberts & Piller (2016) before spreading social medias firms used to advertise their new product or services but nowadays new product information is diffusing through the market from customers themselves. The new product launch was studied by (Kim & Chandler, 2018). They gained interesting insights on how social community and social publishing can be leveraged to facilitate knowledge co-creation between firms and consumers during a new product launch period. Specifically, our exploratory study shows that simple tracking of the evolution of keywords during the pre-launch, launch, and post-launch periods of a new product introduction can help firms better understand their consumers' needs. Using this knowledge firms can effectively interact with consumers by approaching consumers at the right time, with the right information, using the right language, through the right channel to enhance new product launch success.

Wu, Che, Chan, & Lu (2015) studied one kind of social interactions word-of-mouth effect on new product and service development. This topic was studied before several authors and they identified that negative review has more impact on product or service than the positive one. For example, if one positive review can increase sale with 1 unit, one negative review can decrease sales with 3 units (Chevalier & Mayzlin, 2006). All those studied were on macro-level or aggregate data, but what Wu, Che, Chan, & Lu (2015) studied was different, specifically, they examined the effect of online product reviews on book purchases, and model how consumers' perception of the credibility of product reviews evolves over time.

Godes also raises the question of how to motivate people, especially opinion leaders, to actually promote and otherwise support a particular innovation. Additional ways to leverage social contagion more effectively may involve crafting more buzzworthy messages, identifying the kinds of ties that are more likely to be activated, and creating situations bringing potential influential and influences together (Iyengar et al., 2011).

Social interactions effect on new product development was studied by (Peltola & Mäkinen, 2014). The authors discussed how the adoption and use of social media tools influence new product development. Based on a two-phase data collection process comparing the situation before and after adoption of social media tools in three organizations, we conclude that the amount of accessible knowledge and the number of ideas increases as an organization's ability to find and access various sources of intra-organizational expertise increases, thus, increasing knowledge acquisition and assimilation (Peltola & Mäkinen, 2014).

Previous studies on technology innovation have found that social context affected the technology adoption. As consumers become more influenced by other people's consumption

when choosing an innovative product due to uncertainty, social influence may be an appropriate concept to explain the purchase of innovative products (Lee et al., 2013).

By allowing the tastes of a large proportion of consumers to be affected by the market shares of the alternative products, Thille, Cojocaru, Thommes, Nelson, & Greenhalgh (2013) have shown that this type of social influence can have interesting effects on the dynamics of price and new product adoption in a market. In general, a new product is introduced at a relatively low price, which then rises to the extent that increasing sales cause Followers to view the new product more favorably. Conversely, the incumbent firm lowers price in tandem with falling sales. The net effect is that over time prices of the new and old products move in opposite directions even though in the price game of any given period, the firms' actions are strategic complements as the game is a standard one of price competition with differentiated products (Thille et al., 2013).

Conceptual framework of social interactions effect

As discussed in the literature review there is necessity to propose a conceptual framework and hypotheses for the future research. In previous studies, authors try to focus just on B2B markets, but I think B2C needs to be taken into account too. The main questions are: why consumers want to be involved in the new product or service development? Why companies try to involve their customers in this process? In this conceptual model we will try to focus on: consumers-level motivators, firm-level impediments and firm-level stimulators as they all create social interactions that affect new product and service development.

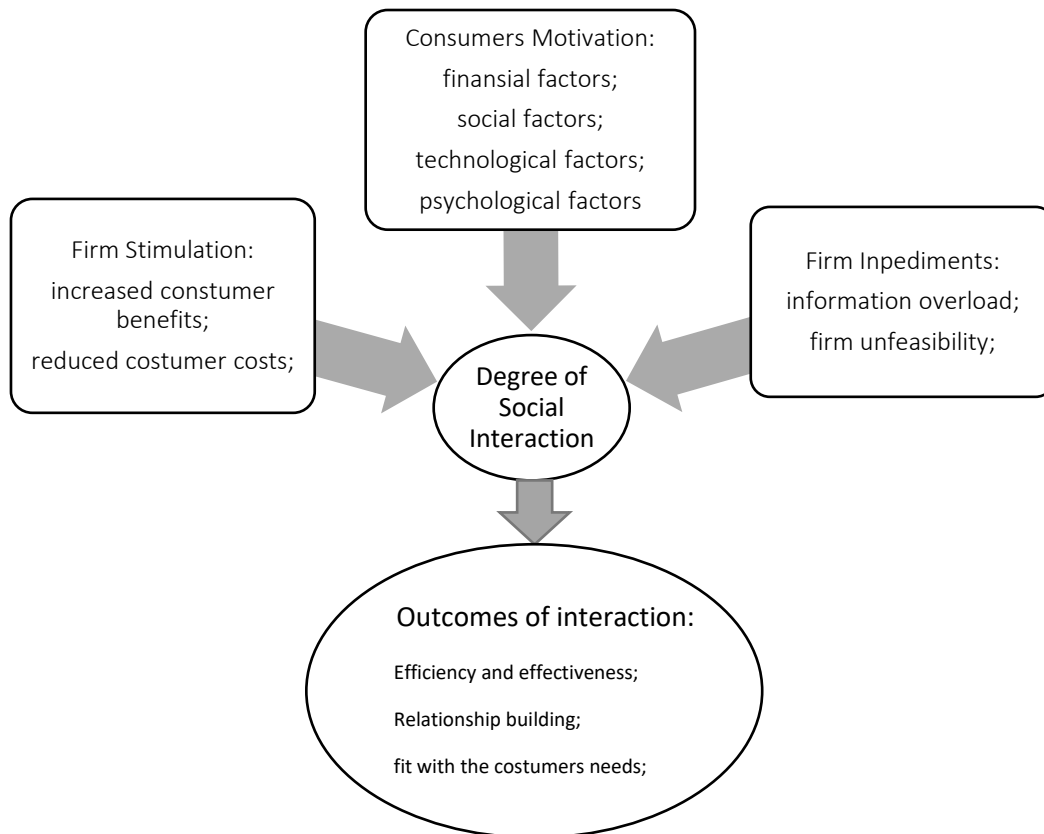


Figure 1. Conceptual model adapted from (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010).

Source: Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010

According to our framework, we can formulate a hypothesis:

Table 1. Synopsis of the hypothesis

H#	Independent variable	Dependent variable	Hypotheses
H1	Consumer motivation	Social interaction	Consumer motivation can cause social interaction
H2	Firm stimulation	Social interaction	Firm stimulation can cause social interaction
H3	Firm impediments	Social interaction	Firm impediments can interrupt social interactions
H4	Social interaction	New product development	Social interaction can effect New product development
H5	Social interaction	New service development	Social interaction can effect new service development

Methodology

This study is mostly concentrated on a systematic inquiry of past papers, journal articles and conference proceedings, books and book chapters as well, which are mostly indexed in the reputable databases such as Scopus, WOS, Google Scholar and etc. Those papers helped to execute the goal of the study. From the literature review above mentioned variables were formed and examined. For the future, it is necessary to develop quantitative research inquiry to reach the goals of this study. The nature of this study is to test the model and build the theory, that is why quantitative research will be needed. According to mentioned survey needs to be created. Also, it is necessary to measure variables. Variable measurement should be performed by questions and questions may be measured on a 5-point Likert scale with 1 meaning “not at all” and 5 meaning “very much”. After measuring the variables, the appropriate test should be run and results found.

Results and discussions

The core of our framework is the degree of interaction. Firms can collaborate with costumers in different stages as consumers can be divided as Innovators, lead users, emergent consumers and market mavens (Hoyer et al., 2010). Innovators in this context are those consumers who are the earliest to adopt new products (Moore, 1999). 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 et al., 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 & Price, 1987).

The consumer segments listed above may be especially engaged in new product and service development activities. Why are some consumers more willing and able to engage productively in this process? Financial, social, technical, and psychological factors all play a role (Fuller 2008). Some consumers are motivated by financial rewards, either directly in the form of monetary prizes or profit-sharing from the firm that engages in development process 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) new product or service development competitions. But many others are not simply motivated by money: they choose to “free reveal” ideas (von Hippel, 1986). Some may receive social benefits from titles or other forms of recognition that a firm might bestow on particularly valuable contributors. Social benefits of being part of the process comprise increased status, social esteem, “good citizenship,” and strengthening of ties with relevant others (Nambisan & Baron, 2009). 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. Participants might reap important cognitive benefits of information acquisition and learning (Nambisan & Baron, 2009).

At least four characteristics of the new product and service development process can represent impediments. First, this process 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 & Ramaswamy, 2000). Second, process initiatives can require firms to grapple with tricky questions around the ownership of intellectual property. Third, the process can yield large volumes of consumer input, sometimes enough to lead to information overload. Fourth, another challenge for firms is the fact that even though consumer cooperation might provide novel ideas, many of these ideas may be infeasible from a production standpoint (Magnusson et al., 2003).

Conclusion

Marketing practice and theory increasingly recognize the potential that social interactions has for the firm’s performance (Prahalad & Ramaswamy, 2000). By successfully implementing and managing those interactions, a firm can create two significant sources of competitive advantages (Prahalad & 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).

Social interactions increase productivity and efficiency gains through cost-minimization since employees’ input can be substituted with consumers’ input in the product/service development. Social interactions can provide important gains in the effectiveness of co-created products, through their closer fit to consumer needs and higher commercial potential (Hoyer et al., 2010).

On the other hand, social interactions effect on new product and service development might have some risks included. The benefits of co-creation for a firm do not come without challenges. One of the major challenges of co-creation is 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 (Hoyer et al., 2010). Hence, transferring control over innovation processes and their outcomes from a firm to its consumers aggravates a firm’s

strategic planning efforts (Moore, 1999). 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 co-creation, 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.

Ideas for future research.

The concerns described above may cause risk-averse and predictability-seeking firms to avoid co-creation. More empirical and analytical studies are warranted on the trade-offs between the benefits and costs of social interactions in the short and long run. Researchers and managers need to identify ways of planning, managing, and implementing complex processes of social interaction enrollment 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 co-creation. Moreover, the following research questions warrant further attention: How strong is the disadvantage of losing control relative to improved innovativeness? What is the effect of social interactions on brand image and positioning? Do social interactions hinder radical innovation? How can firms incorporate social interactions in their strategic planning, given the complexity and potential loss of control? How do consumers make trade-offs between different outcomes and costs of social interactions and how can firms respond to these challenges?

In this article, we have outlined and discussed a conceptual framework that focuses on the degree of consumer social interaction in NPD and NSD. 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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