The Contribution of Different Online Communities in Open Innovation Projects

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ABSTRACT

Online communities used as resource enlargement in open innovation processes are a promising concept. Yet, to date few comparative studies on characteristics of different online communities have been done. This paper identifies the cultures of innovation communities and brand communities in the environment of the Web 2.0 and shows how to use and further exploit their potential in different steps of open innovation projects. To analyze these online communities, an exploratory case study design with ten small- and medium-sized enterprises (SMEs) was chosen. All ten enterprises worked with the same innovation intermediary, which implemented an innovation community platform into a social network and possess a brand community in the respective social network.

The key findings suggest that the potential of both communities should be brought together and used as a harmonized strategy for open innovation and social media. Based on these findings, a conceptual framework was developed which illustrates how to integrate such online communities into each stage of a new product development process as well as to interconnect them.

Categories and Subject Descriptors

H.5.2 **[Information Interfaces and Presentation]**: User Interfaces – *User-centered design*; D.2.2 **[Software Engineering]**: Design Tools and Techniques; H.5.3 **[Information Interfaces and Presentation]**: Group and Organization Interfaces – *Web-based interaction.*

General Terms

Management

Keywords

Open innovation, innovation community, brand community, new product development process, social media, social network

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1. INTRODUCTION

The involvement of communities or customers as an innovative resource is a promising concept in today's markets as it allows to decrease the degree of risk and uncertainty through satisfying customer needs and, hence, increasing the chance of purchases by customers [47]. There are different ways and concepts to include customers into new product development processes of a company: innovation marketplaces [41, 45], innovation contests [6, 8, 36], and innovation communities [41, 29, 33], to name some examples of the existing open innovation concepts. Two widely used platforms for interaction with communities are crowdsourcing platforms [25, 54] and social networks[1] [2, 28, 56].

An increasing number of companies uses open innovation for accumulating ideas and developing products close to the market. Idea and innovation contests had a wide diffusion in the last few years through the more intense use of the Internet and the Web 2.0. Companies look for the best Lead Users [59] and Early Adopters in order to include them into their process of product development. A real competition for the most innovative customers has developed [51]. In particular, social media platforms with their system and community architecture enhance the transformation from passive customers to active participants in development of content [56] and products [64]. This means the customer can be seen as an external knowledge source which is included into the new product development process [4, 34, 37, 39, 64] where he takes on an active and creative role [58].

As aforementioned, different types of communities exist. In this paper, two cases are considered: (1) the crowdsourcing platform unserAller, which has an existing innovation community, and, in comparison, (2) the social network Facebook, where companies generically develop and establish their brand communities by using the system architecture of a Facebook fan page. Both are online communities. It is of particularly interest, which of these communities is of greatest value when conducting an open innovation project. So, this paper contributes to the field of community research as part of the open innovation concept with the following research questions:

- How do brand communities and innovation communities differ?

[1] A social network in this paper is defined as a social network in the Web 2.0 and no personal network.

- Which characteristics of these two communities have to be taken into consideration when setting up an open innovation project?
- In which steps of a new product development process should an innovation community or a brand community be applied?

In order to answer these research questions, an exploratory case study design will be employed, evaluating ten interviews with SMEs which executed innovation contests with the innovation intermediary *innosabi* and their crowdsourcing platform *unserAller*. Furthermore, the companies possess a Facebook fan page. This paper is targeting on SMEs because they possess advantages to adapting open innovation such as close and direct contact to customers [24], and shortcomings that can be compensated through open innovation, e.g. scarce resources and lack of networks [15, 24, 31, 35, 48]. Social networks and crowdsourcing platforms can enhance the product development through network enlargement and broaden personal networks. Nevertheless, the implications of this paper can also be applied by managers of large companies.

After giving an overview about the Web 2.0 and online communities – especially innovation and brand communities – as well as the link to open innovation, the method part in section 3 shows how this study was organized and conducted. Section number 4 shortly summarizes the results of this study which are discussed in section 5. Here, a conceptual framework will be developed and shows when to use an innovation community or a brand community in the product development process and how to deal with these two communities and convert members from an innovation community to a brand community and vice versa. The paper closes with a conclusion and some future research lines.

2. THEORETICAL BACKGROUND

2.1 The Web 2.0 and Online Communities

With the technological changes in the Internet and especially with the evolvement of the Web 2.0, the usage behavior changed dramatically. In this context, online communities have emerged. But this change is not a revolution rather an evolution of the Internet with the user in the center and the interaction of him with other users [28, 29]. Online user interaction can be described with Ang's [2] 4Cs model for social media respectively the Web 2.0: (1) Connectivity means that the web-based platform has to have technical features that enable users to connect easily with other users, hence developing a larger community. (2) Conversations, the form of communication in social networks are primarily short messages and status updates, and secondarily profile changes. The communication in a social network is asynchronous (e.g. via posts), that is, one individual writes a message and someone else answers later on [16]. In (3) content creation the keyword is user-generated content: content that is created by the users themselves through blogs, videos (e.g. YouTube), pictures, etc. It is noted that just five to ten per cent of the users contribute with own content; the rest is just consuming the content of others [7]. Finally, (4) collaboration means that users can work together on a platform for creating content.

Summarized, the Web 2.0 possesses a system and community architecture. The system architecture provides unique communication channels with a high interaction factor which drives (2) conversations and (1) connects the users. And on the other hand, the community architecture fosters the development from a passive consumer to an active producer of (3) content in collaboration with other users (4). Hence, the architecture of the Web 2.0, in contrast to the traditional Internet (Web 1.0), offers a good framework for collaborative work in an open innovation project [23] and integrate users/customers virtually [17, 29].

In general, online communities are defined as individuals who share the same interests or have common goals and discuss the former and the latter via an Internet platform, especially Web 2.0 [29, 33]. Two special forms of online communities are brand communities and innovation communities. In the following, these two types of communities will be described.

The definition of an online community can also be used for innovation communities but these communities include Lead User characteristics and innovative skills. Ideas are collaboratively developed and discussed, and support the innovation process of a company [29, 53]. Besides need information reflecting desires, innovation communities possess problem-solving capabilities and suggestions which can be defined as solution information [61]. Innovation communities are an essential source of idea generation regarding increased flop risks and shorter product life cycles [28].

In comparison to the innovation community, another special form of an online community is a brand community. Brand communities have a strong connection to the brand and/or the product [49, 29, 42]. This loyalty to the brand can be achieved and maintained, for example, using a Facebook fan page. Users can connect and share information with the company and among fans. Thus, when users are connected to their favorite brands on Facebook, targeted content can be delivered more easily because only users with a high commitment *like* a fan page. The aforementioned features can result in publicity and visibility for the company, and can be combined with other marketing strategies [2]. Though Füller et al. [18] found that brand communities can also be used as innovation sources because of their aforementioned characteristics, their results showed that members from brand communities are more willing to get involved in innovation projects if they are interested in innovation and possess innovative skills. Contrary to expectations, brand community members who know the brand very well are not inevitable willing to share their knowledge with companies and contribute this knowledge to open innovation projects.

2.2 Online Community Platforms

Using online communities in the identification of user needs and solutions, can support companies in their open innovation projects. These can either be built on existing or self-developed platforms. A company has to decide which approach to choose for its open innovation project. A self-designed platform is better to control but the community is usually smaller in comparison to an innovation community from an innovation intermediary [51]. This insight is essential because a great issue is to reach a critical mass of users [32]. The more feedback from the community is received, the higher is the chance of good quality ideas and solutions [51].

Innovation intermediaries offer online community platforms which facilitate to reach a critical mass for new product development [51]: an innovation intermediary helps other companies to implement open innovation into their business. The innovation intermediary has to face a two-sided market: it supports (1) the innovator, often the company, to use and find external ideas for their innovations (demand) and (2) the inventors, often the customers or users, who identify markets to implement their ideas into innovations of a company (supply) [9]. Hence, the innovation intermediary provides an innovation marketplace, often a web-based platform, as a virtual place where

supply and demand meet [41, 45]. Thus, they provide a platform for information exchange. Therefore, the tasks of an innovation intermediary include identification of an innovation, acquisition of intellectual capital, and support in the internal innovation management [51].

Compared to a crowdsourcing platform from an innovation intermediary, social networks can be an easy and low-cost possibility to connect with users and develop products with them. However, the interaction on a social network is still not as high as required for an innovation. The critical mass cannot always be reached and the benefit for supporting a company in its innovation process is not always clear for the users [51].

For a higher degree of motivation and participation on an online community platform, the development of an innovation can be set as a contest by encouraging participation through competition [36]. Such an innovation contest can be driven by a reward system, an extrinsic incentive, as well as publicity. This reward can either be monetary or non-monetary. The previously mentioned community functionalities in the Web 2.0 foster interaction among users and hence guarantee a successful innovation contest [6, 8, 20, 41].

As shown in this section, different types of communities – here, innovation communities and brand communities – with different characteristics exist. Next, in the empirical analysis, it is shown how these characteristics of the innovation community unserAller and the single brand communities of the companies can be applied in the new product development process.

3. METHOD AND DATA

3.1 Description of the Analyzed Platforms

unserAller is an IT-based crowdsourcing platform which serves as an innovation marketplace [41, 45] where a company can hold innovation contests [6, 8, 20, 41] with the existing innovation community [29, 33]. Thus, unserAller uses a community-based innovation process and is a cheaper alternative [21] to the Lead User method [59]. The unserAller (innovation) community has 15.000 members, most of them from Germany [21, 26]. It is the core service of innosabi, which developed it from scratch. innosabi is a service provider for open innovation consulting. unserAller is useful for companies that want to develop products jointly with the existent innovation community and ask them about their ideas and needs. The community itself becomes an inventor or at least a supporter in the innovation process of a company. unserAller is specially targeted at line extensions of fast-moving consumer goods but not at radical new products. It can be used by all kinds of companies, ranging from small- to large-sized companies [21].

The companies analyzed in this paper used unserAller as Software-as-a-Service (SaaS): innosabi provides companies with the standardized software unserAller and the company itself implements it. There are three possibilities to implement unserAller: (1) all projects of all companies are published on the community platform unserAller.de. There is optionally the possibility for the innovator to (2) implement unserAller as an engine to their website or (3) as an application to their Facebook fan page, or altogether [21, 27].

Next, the company defines an innovation task – which is often designed as an innovation contest – designated at the unserAller innovation community. Through the functionalities, a direct dialogue with the innovation community is possible and a dialogue within the community can be stimulated. After the task is finalized, it is published on the web-based platform unserAller. An incentive can be chosen subject to the complexity of the task [51].

The next step is that the innovation community enters ideas into a text box with the option to add images and drawings which were created by hand, with software, taken with a camera, etc. Subsequently, other users can comment asynchronously [16] and evaluate and rate the ideas with a heart symbol. This is similar to a Facebook *like*, meaning the more hearts one idea incorporates the better the idea is perceived by the community. For this purpose, it is important to know that the solution space [62] is medium. Thus, it is neither without any guidelines nor as small as in a product configurator.

The implementation of unserAller as application to Facebook is advantageous because the user has no switching costs between the two platforms. This makes it easier for the company to advertise their Facebook fan page and users can easily like the fan page.

This section closes with an application of the explained 4C model from Ang [2] to the crowdsourcing platform unserAller as well as the social network Facebook. (1) Connectivity is found in both platforms. Both have an already existing system and community architecture. The system architecture provides unique communication channels with a high interaction factor which drives (2) conversations. The community members share ideas, wishes, and needs with each other in a group and discuss them; they also get direct and fast feedback and make improvements [14]. Ideas can get spread fast through viral distribution (viral effect, multipliers, word-of-mouth) via a one-to-many connection (sharing option) [28, 65]. Besides the group function in Facebook, applications can be implemented which can be programmed conveniently using open source software – even among the users themselves [14]. unserAller is such a Facebook application programmed by innosabi. The user can create (4) collaborative (3) content, which can be called user-generated products when it comes to new product development [63].

3.2 Design

The unserAller platform was chosen because it can be implemented as an application in Facebook. Hence, it offers good possibilities to compare the innovation community and the brand community. Furthermore, unserAller possesses the described system and community architecture.

As already explained in the introduction and the theoretical background, there is insufficient proof on which community, with its described specific characteristics, is best applied in which stage of the new product development process [5, 11, 22, 29, 30, 60]. Hence, for answering the research questions, a qualitative and exploratory design was chosen to provide theory inductively in this research field and deepen as well as extend past findings [13, 40]. A multiple-case study with ten semi-structured interviews was chosen to provide a stronger basis for the theory [67].

3.3 Sample

The participants were chosen among 44 possible companies which collaborated with unserAller on open innovation projects once or several times. Mainly companies which are strongly involved in new communication channels, namely Web 2.0, or which already used other open innovation concepts were chosen. Furthermore, all companies possess a Facebook fan page but they use it with different frequencies and they have a different amount of *likes*.

Moreover, it was not a criterion whether the project with unserAller was successful or not.

Following this procedure, the sample is not representative but has explorative character with its different company backgrounds and areas of application. Fifteen companies were informed of the survey, from which ten showed interest in participating in the survey. The companies were mainly from Germany, particularly Munich, and one was from Austria. The sample consists of projects ranging from fast moving consumer goods like belts, rings, and face care sets to idea generation projects for renewing a public bath or collecting donations as well as developing a luxury liqueur, among others (see Table 1).

Table 1. Interviewed sample

Company	Business area	Number of employees	unserAller Project
α	Jewelry	eight	Ring; collection set
β	Hosiery/ legwear	three	Garter for Oktoberfest
γ	Restaurant	ten	Wafer topping
δ	Restaurant	two	Breakfast; business lunch
ε	Fashion	two	Belt
ζ	Town planning	two	Suggestions for donations
η	Cosmetic	two	Face care set
θ	Public bath	one	Suggestions to renew a public bath
ι	Distillery	three	Carnival liqueur
κ	Social aid programs	two	Language application

3.4 Interview Procedure

The interviewees were informed via email about the research project and kindly asked to participate in this survey. For conducting the interview, the author visited the company personally and interviewed the CEO (5 out of 10 interviews) or conducted a telephone interview with the CEO (5 out of 10 interviews).

The interview guideline ensured that the obtained data was comparable: the same topics were covered in each interview but with different emphasis on specific topics which were more relevant to the respective company. Thus, the interviews were rather guided conversations, open-ended, and held in German. They were tape-recorded after the interviewee agreed to this process. The interviews were conducted in the period between August and September 2012. The length of an interview ranged between ten minutes and one hour with an average duration of forty minutes. Ultimately, the audio files were transcribed by the author with the software F5, v. 1.5 (dr. dresing & pehl GmbH, Germany).

The interview guideline was composed of the following themes and questions: first of all, interviewees were asked to talk, in general, about their experience with open innovation and the type of open innovation approaches they use in their company. Next, they were asked about their usage of the unserAller platform in comparison to other tools like product configurators and why they decided to use unserAller instead of another platform. In this context, they were queried to give reasons why they chose an innovation intermediary with an existing innovation community in comparison with their brand community on Facebook. Furthermore, they were asked to explain how they valuated the possibility to implement the unserAller platform as an application right into Facebook and how they align it to their social media strategy.

After this general part about open innovation and social media, the interviewees were asked about the influence of open innovation on their new product development process. In particular (1) whether the communities' suggestions were developed, (2) which part of the ideas and concepts derived from the innovation community or the brand community and (3) in which stage of their product development process they used the innovation community or brand community.

3.5 Evaluation Procedure

The interviews were evaluated with a self-developed category system, based on Mayring's [40] qualitative content analysis. Thereby, the text material is subsumed to different categories to obtain a systematic and verifiable text analysis in order to maintain the wide variety of the linguistic material. The centerpiece of Mayring's method, the category system, was developed through the following procedure: the interview transcripts were classified into different categories by extracting meaningful units using an open search procedure. These units represented, for example, the description of specific open innovation strategies. Subsequently, the generated units were fitted into one coherent overall category system with superior- and sub-categories, which was a gradual process. The coding system was extended by a new category whenever a single relevant statement was identified which was not fitting in an existing category.

In the fitting process, some units/categories are found directly in the text material (inductive category generation) and others derived from already existing category systems [41, 15, 24, 31, 35] from literature (deductive category generation) [40]. The resulting category system consisted of five categories with several sub-categories (open innovation in general, social media/unserAller, impact of customer integration, growth, future).

The interviews were coded with the coding software MaxQDA, v. 10 (VERBI Software, Consult, Research GmbH, Germany), by allocating single statements from each interview to the developed coding system [38, 40]. Afterwards, four interviews were randomly selected and coded by a second independent coder. The agreement – the inter-rater reliability – between the two independent coders was calculated to an arithmetic mean of 88.75 %. Thus, substantial agreement between the two coders can be assessed [10, 19, 40] and the category system is qualitatively satisfying.

4. RESULTS

The empirical analysis of the interviews resulted in several categories which were grouped into two topics. The first topic is about the different communities – innovation community and brand community – which can be used in an open innovation project and what kind of differences they possess. The second topic is about the applicability of the aforementioned communities, so in which steps of the new product development process their ideas and contributions can be used best.

4.1 Brand Community vs. Innovation Community

The interviewees were asked why and how they connect their open innovation activity with their social media strategy. The most important reason for this connection are marketing intentions (β, γ, η, θ, ι, κ). It is important to be present in the users' memory. Facebook can be used as a diary to publish the latest information about the open innovation projects conducted on the crowdsourcing platform unserAller and other information (γ, ι, κ). That means, Facebook is used as communication channel about the open innovation project at unserAller to the brand community (α, β, γ, ι, κ).

The brand community on Facebook, identifies itself with the brand, which can result in customer loyalty. Therefore, potential customers can be reached (η) and brand endorsers can be found (γ, ε, ι). Additionally, some members of the brand community participate in the innovation contest on unserAller (α, γ, η, θ). In sum, the brand community who follows the activities on the Facebook fan page of their favorite company have a stronger loyalty to the company than the unserAller innovation community (α, ε, ι).

In comparison to the aforementioned activities in social media, the interviewees were asked about the inclusion of both online communities in the product development process. The ideas originated from the innovation community in the product development process seem to be of higher quality – apparently – than the input from the brand community asked on the respective Facebook fan page (α). Its participants are more innovation-oriented and possess better design skills in contrast to a brand community. The unserAller innovation community is described as a designer community with individual fulfillment and self-actualization but no intrinsic commitment to the company or brand itself. The question is therefore whether the innovation community participates in the product development process because they like the products or if they participate in several projects because they like designing without having brand loyalty (ε). In sum, it cannot be implied that the innovation community will become paying customers inevitably and buy the product at the end of the process (δ). Nevertheless, through the involvement of the innovation community in the innovation process of the company and hence getting to know the company better, the company/brand loyalty of the innovation community can be stimulated (α).

4.2 Use of Online Communities in the Product Development Process

The companies were asked – after their experiences with unserAller and Facebook – in which stages of the new product development process they used their Facebook brand community or the unserAller innovation community. Most of the companies employ both brand community and innovation community in the phase of idea generation but the focus is here on the innovation community. In the case of the brand community, their suggestions are rather used for product improvements in the way that they are asked, for example, which color they wish for the production of the next belt (ε). Hence, the brand community is rather used for an idea inspiration instead of using them in an entire innovation project (α, β, γ, η, θ, ι, κ). Screening is rather internal because the companies need to evaluate, if the ideas suit the firm image of the company (β, ε, ι). After the ideas are screened, they are then taken as suggestions for the development stage: six companies employ the innovation community as support in the development phase (α, β, ε, η, ι, κ). Development itself is then made by professionals (α, β). Testing and validation is, as well, rather in the company itself (β, η, ι). In the testing phase only prototypes which match the image of the brand are developed and then shown to the innovation community and brand community (β, *η, ι*). Finally, brand community support for the launch is named by one company (γ).

In sum, a crowdsourcing platform in combination with an appropriate social media strategy can support the product development process considerably. The use of these platforms enables companies, particularly SMEs, to reach communities – potential customers – in a short period of time without spending much money in customer communication programs and develop products jointly with them. This assumption will be developed in the following discussion.

5. DISCUSSION

The results section showed the characteristics of the unserAller innovation community and the corresponding brand communities as well as their employability in different stages of the product development process. These two topics will be combined. In the following, unserAller is abstracted as crowdsourcing platform and Facebook as social network. These abstractions are presumed with the following criteria, ceteris paribus: the crowdsourcing platform needs to be integrated in Web 2.0, for example as Facebook application. Furthermore, the crowdsourcing platform should have characteristics of innovation contests. Both the crowdsourcing platform and the social network should possess the system and community architecture explained in section 2.

Figure 1 illustrates the open innovation process with community enlargement. On the one hand, it shows the innovation community and the brand community as well as the interconnection between the two. On the other hand, the product development process is pictured. In the following, it is described which community to use best in which stage of the product development process, the resulting marketing effect of an open innovation project, and the interconnection between the two communities.

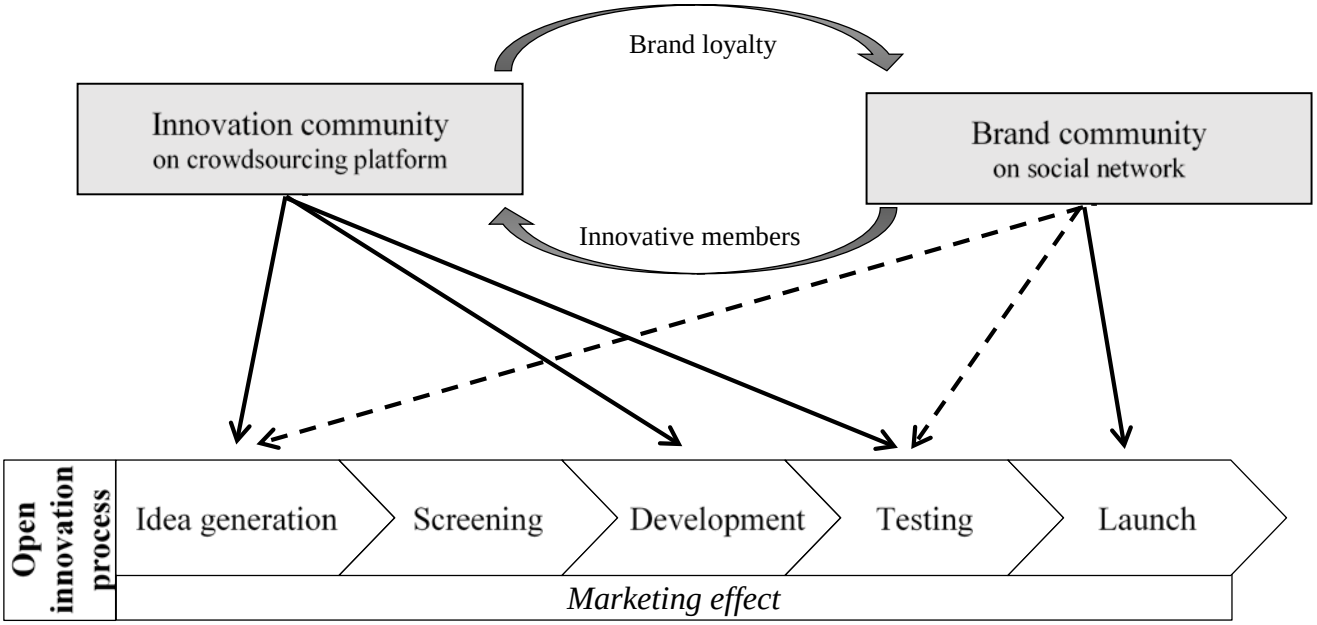

Figure 1. Open innovation process with community enlargement (Source: own illustration)

It is important for a company to know which community can be used in which part of their product development process. To get the most out of the results and to use the two communities as new resources, the following process is recommended. Firstly, the innovation community should be involved in the idea generation stage. Since the innovation community has more experiences in designing products, the results given by them are of better quality than the feedback from the brand community. Nevertheless, the brand community should also be included by asking them on the social network about their ideas and suggestions for the current innovation process. Through asking them, they will be included into the innovation process and get to know the innovation project. Thus, some innovative members of the brand community will possibly take part in the innovation project at the crowdsourcing platform of the innovation intermediary. This is in line with Muniz and Schau [43] who showed that innovative members from the brand community are willing to discuss about innovation-related issues.

Next, the ideas are reviewed in an internal process (screening). After the ideas which reach the desired features and are manufacturable are identified, they are made available to the innovation community in the development phase. The innovation community is then asked in which direction the ideas should be further developed. In this step, it is very important to give the innovation community guidelines and a solution space to still guarantee the limitations of technology, feasibility, and product/firm image [62].

After the inputs given by the innovation community are included into a prototype, it is possible to send these to the innovation community and let those be tested by the innovation community in a testing phase. Additionally, some prototypes should be sent to the innovative members of the brand community because, on the one hand, they gave eventually some idea inputs at the beginning of the innovation process and, on the other hand, they know the brand very well and *feel* if the new developed product is suitable to the brand.

Finally, the product which meets the requirements of the company and satisfies the communities' needs best is launched. In the launch stage, the brand community can support the company in the way that they tell, for instance, where the product should be sold.

Besides the benefits for the innovation by using a crowdsourcing platform, product development and advertisement are done simultaneously because the innovation community knows the product very well after they helped in designing it. So, this whole process of community inclusion has a marketing effect for gaining (1) publicity and wider coverage as well as (2) customer and brand loyalty. Moreover, both the innovation community and brand community will most probably advertise and share the product in their social network [28, 55, 65].

Hence, during the complete product development process and, in particular, during the product launch, it is valuable to convert the innovation community to long-term customers and make it become part of the brand community. According to Ang [2], this task of conversion is important for companies today because the terms customers and community members have to be distinct. Since not all users associated with the company presence on social media are customers of the company and simultaneously not all customers of a company are using social media. Therefore, the management of an online community is quite different from the management of customers, with which companies were faced in the past.

This step of conversion is eased if the innovation community platform is included right into the social network – it is easier for the innovation community to become part of the social network of the company, since this does not require skill learning. This step of conversion from a member of the innovation community to a

member of a brand community is important to achieve a loyal customer. In turn, brand communities should also be asked for ideas of new products for fostering their hidden innovation skills and become a member of the innovation community. So, both the innovation community and the brand community get to know each other and are able to grow by acquiring members from the other one. Hence, both platforms benefit from this interconnection.

The aforementioned marketing effects are beneficial for ventures because they gain access to a big innovation community. Furthermore, using communities this way should lead to higher probability of success and a lower product failure rate [47].

In sum, it is shown: to develop products and services with communities efficiently, the potential of both communities should be brought together and used as a harmonized strategy for open innovation and social media.

6. SUMMARY AND CONCLUSION

The findings of this study show several key implications for innovation, marketing, and entrepreneurship theory and practice: This paper showed the differences between brand communities and innovation communities as well as their interconnection and different contribution to open innovation projects. The contribution was illustrated in Figure 1 by showing how to include the aforementioned online communities in each stage of a new product development process. Nevertheless, the findings have some limitations which can be useful for future research.

First of all, this study is based on a sample size of ten which makes it actually difficult to generalize. Furthermore, the sample is heterogeneous with different experiences in open innovation and social media. Therefore, future research should investigate in testing the proposed framework on a large scale by examining companies from different industries with similar experiences in open innovation and social media. Moreover, it is interesting to examine how this framework works for more complex products or processes.

Some of the examined cases (α, ε, ι) suggest that it is better to use a community with a strong loyalty to the company/brand to design and develop products instead of asking an existing community of an innovation intermediary which participants are interested in designing and not so much in the brand. In this context, further research can analyze how strong the network, customer, and brand ties are in innovation communities in comparison with brand communities [1, 12, 44]. Furthermore, it could be examined if a community integrated into a company-owned platform instead of using an innovation community from an innovation intermediary shows a stronger connection to the brand and whether it leads in turn to higher sales. It can be assumed that such an approach could be more promising for large companies which already possess a big community than for SMEs because, according to Keupp & Gassmann [32], a critical mass has to be reached for co-designing products with customers successfully. Besides that, it would be interesting to see how the described framework could work for brand communities with stronger social relations than among Facebook fans.

This shift in general from a closed to an open innovation paradigm is promising and auspicious. According to Ardichvili et al. [3], "Prior knowledge of customer problems increases the likelihood of successful entrepreneurial opportunity recognition." The problem-oriented knowledge of customers in combination with the solution-oriented knowledge of the company [48, 53, 56], can represent a valuable strategy for opportunity identification, exploitation, and finally venture growth through a competitive advantage [50]. Using different online communities with interactive tools in a harmonized strategy for open innovation and social media can compensate disadvantages, especially the lack of networks, and scarce financial and personal resources, and encourage customer-oriented innovation, brand and company image, customer loyalty and an emotional bond.

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