J. Eng. Technol. Manage. xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Journal of Engineering and Technology Management

journal homepage: www.elsevier.com/locate/jengtecman

How to innovate with a brand community

Guy Parmentier

Univ. Grenoble Alpes/CERAG, 150, rue de la Chimie – BP 47, 38040 Grenoble Cedex 9, France

ARTICLE INFO

Article history:
Received 30 January 2014
Received in revised form 17 July 2015
Accepted 12 August 2015

Keywords:
Brand community
Open innovation
Co-creation

ABSTRACT

This study examines how a firm can innovate with a brand community via an inductive, longitudinal study of three brand communities. The proposed framework for building an innovative brand community features six mechanisms: animation, openness, structuring, linking, theorization, and integration that support three processes: generation, socialization and adoption of user contributions. An innovative brand community can generate valuable innovations for the firm without reducing its own vitality. It brings together lead, creative, and other types of users to create ideas and new functions, uses, and contents pertaining to innovation. On the one hand, firms that partially open their boundaries by leaving space in the process of innovation for creation and discussion can benefit from the contribution of users without suffering appropriation problems. On the other hand, brand communities should receive toolkits for creation and animation, and encourage the development of both communities and innovation.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

Users represent a major source of ideas for new products and services (Von Hippel, 1986, 2005). In recent years, the spread of Internet access and the emergence of collaborative tools have facilitated connections among users with common interests. These users sometimes group themselves into communities of users to share and disseminate information on their practices, and to communicate about the products and services they use (Franke and Shah, 2003). These groups are, in fact, either innovation communities where discussions focus on product and service improvement and innovation to meet unmet needs, or brand communities where discussions focus more on brand activities and the use of products and services. User communities might feature some members who are innovators, whose innovations then diffuse widely, as exemplified in open source (Lakhani and von Hippel, 2003; Raymond, 1998, 1999) and software (Nambisan and Baron, 2010), video games (Jeppesen, 2005), music communities (Jeppesen and Frederiksen, 2006) and the motorcycle milieu (Marchi et al., 2011).

For firms, collaboration with brand communities seems to provide an appealing solution for integrating users' ideas and creations into their innovation processes, because the community members are attached to the brand and possess knowledge about the use of its offers. However, although brand communities appreciate multiple links to the firm, their activities focus on value creation for participants (Schau et al., 2009) and innovation activities that only interest the most creative users (Füller et al., 2008). Innovating with a brand community thus remains a challenge because of the need to engage innovative users in an active community and generate valuable user contributions.

To solve this problem, this article raises the question: How can a company develop co-creation activities to innovate with a brand community? I will show that it is possible for a business to innovate with users if it develops co-creation activities

E-mail address: guy.parmentier@iae-grenoble.fr.

http://dx.doi.org/10.1016/j.jengtecman.2015.08.001
0923-4748/© 2015 Elsevier B.V. All rights reserved.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

within an active brand community, thus making it an innovative brand community. An innovative brand community can generate valuable innovations for the firm by bringing together lead, creative, and other types of users to generate ideas and new functions, uses, and contents pertaining to innovation. In this case, innovation begins within the firm and then gets transformed and improved upon by users in the brand community. Finally, this paper contributes to understanding innovation processes that involve businesses and brand communities, and identifies six mechanisms that lead to and support the development of an innovative brand community. These mechanisms support the generation of user contributions with the openness of the innovation process and the animation of an active brand community, favour the socialization of these contributions with the creation of multiple links with an independent brand community and thus structure the community into groups of interdependent contributors. Finally, they promote adoption of contributions with the integration of creations into the innovative offer and into the collective thinking of the community about itself.

In a comparative longitudinal case study, I consider three brand communities that have dealt with innovative products and services: (1) the *DreamOrange* community was created by an international communications service provider to involve users in the initial phases of new service design; (2) the *Freebox* community, which users created in response to the launch of an Internet offer of an innovative "Internet box"; and (3) the *Trackmania* community, co-founded with a small producer of videogames and players that emerged as the new game was deployed. In the next section, I review literature on brand communities and their contributions to firm innovation. After that, I present the research methodology and results, and I conclude with a discussion of the theoretical and managerial implications of these findings.

2. Review of research on brand communities

Innovation is the main theme of this study, namely, an innovation process that takes place across the firm and the brand community. A brand community[1] is a community of users and consumers who have a relationship with the firm's offering, and that generally trade, share, and disseminate information and knowledge about a product or service. Sometimes it also integrates innovation activities (Marchi et al., 2011; Füller et al., 2008; Kozinets, 2002; Muniz and O'Guinn, 2001). Some of these communities are directly created and supported by the firm, or they may result from the initiative of enthusiastic consumers. The Internet is conducive to the development of these communities that increasingly exert consumer power over firms (Umit Kucuk and Krishnamurthy, 2007). I now explain how brand communities have been analyzed as a space for social activities to support the community or a space of co-creation to support innovation.

2.1. A space for social activities to support the community

Brand community is a space for social relations in which fans get together to share their passions, practices, and difficulties. Members interact to develop social capital and social identity (Nambisan and Baron, 2010). The many social relations established between members facilitate engagement in the community, knowledge dissemination, and brand loyalty (Algesheimer et al., 2005; Muniz and Schau, 2005; McAlexander et al., 2002, 2003). The quality and quantity of contributions in a brand community are positively influenced by feelings of engagement (Wiertz and de Ruyter, 2007). Brand communities feature dozens of diverse practices, such as welcoming, empathizing, evangelizing, customizing, or commoditizing (Schau et al., 2009). These practices create value for participants and support community development. For example, they support the sharing of knowledge about product experiences (Nambisan and Baron, 2009; Franke et al., 2008; Wiertz and de Ruyter, 2007; Jeppesen and Molin, 2003), support the co-construction of the brand (Füller et al., 2013; Vargo and Lusch, 2004), or support idea generation for product improvement (Marchi et al., 2011; Nambisan and Baron, 2009; Kozinets et al., 2008; Jeppesen and Frederiksen, 2006; Kozinets, 2002; Muniz and O'Guinn, 2001). Customer-to-customer interactions also strengthen the generation of ideas (Wu and Fang, 2010), creating more interactions among users and more user contributions, thus leading the brand community to generate new ideas. Innovating with a brand community thus seems interesting for a firm because the most active users are attached to the brand (Nambisan and Baron, 2010) and possess knowledge about the use of the firm's products and services (Marchi et al., 2011). These users can generate ideas and content to improve products or create new products (Wu and Fang, 2010).

However, in this space of social activity, the generation of user contributions about innovation and appropriation of the innovations by the firm can create problems. These communities often develop rituals and traditions based on the brand's history, which is not conducive to change or the creation of new products (Muniz and O'Guinn, 2001). Innovation activities interest only the most creative users (Füller et al., 2008) with high motivation to innovate and sufficient domain specific skills (Füller et al., 2007). When consumers feel strongly engaged with the firm, they might even collaborate less in online communities (Wiertz and de Ruyter, 2007). Moreover, the ideas offered by current consumers generally produce only incremental innovations (Benner and Tushman, 2003), so focusing solely on these ideas may cause firms to disregard other potential customers and reduce their innovative capacities (Danneels, 2003). To innovate with a brand community, the company cannot expect that ideas simply emerge naturally from the social activity space. Rather, it must build a co-creative space that supports innovation activities.

[1] Brand communities have also been referred to as "consumer or consumption communities" in prior literature.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

2.2. A space of co-creation to support innovation

A brand community can therefore also be a space of co-creation. For example, creative consumers of the Star Trek community have built websites, published online stories and even created amateur movies based on the Star Trek universe (Berthon et al., 2007). In this case, a brand community is not only a space for social activities to support a community and a brand, it can also become an innovative brand community to support firm innovation. A co-creation space often takes the form of an online forum, hosted in part or fully by the company, and equipped with tools that encourage creativity and innovation. Two case studies of brand communities in the area of video games and software using content creation tools show that this configuration has allowed the development of support between users, the generation of innovations or content directly associated with the firm's offer, and the emergence of a host of innovative ideas that can be incorporated into new versions (Jeppesen, 2005; Jeppesen and Frederiksen, 2006). These easy-to-use tools, referred to as toolkits for innovation (Von Hippel and Katz, 2002) include a set of easy-to-use design tools that allow users to develop new products for themselves. Toolkits for innovation make it possible to organize competitions for ideas (Leimeister et al., 2009; Piller and Walcher, 2006), help design new products (Füller and Matzler, 2007), or adapt products to clients' particular needs (Berger and Piller, 2003; Piller and Kumar, 2006).

An innovative brand community also encompasses very dense social networks, users with diverse competencies, and heterogeneous and complex technical devices (e.g., forums, open codes, customized toolkits, tools for creation). The spaces for discussion in a user community—through forums, instant messaging, and mailing lists—are also conducive to the emergence of new ideas, their discussion, and the development of various choices (Hemetsberger and Reinhardt, 2009). These technical "motors" are thus part of a social software that organizes interactions within the community and between the company and the community (Burger-Helmchen and Cohendet, 2011). The peer support, especially for novices, allows promotion of the creation of innovation more adapted to the needs of other users during the idea and solution generation phase (Franke et al., 2008). They also integrate lead users (Marchi et al., 2011; Jeppesen and Frederiksen, 2006) who are indispensable for identifying problems and proposing solutions in the form of ideas, as well as for the development of prototypes to be shared with others (Franke and Shah, 2003). Users that contribute to innovation have a sense of partnership with the company (Nambisan and Baron, 2010) that favours willingness to collaborate (Marchi et al., 2011), and they are often more motivated by recognition from the firm than recognition from their peers (Jeppesen and Frederiksen, 2006).

The integration of creative tools into a brand community, in a process of open innovation, therefore constructs a co-creation space in which users discuss and modify innovations. An innovation initially developed by a firm can also be adapted to the needs of users following a series of successive innovative inputs. In this type of distributed innovation process, identification of good sources of innovation and maximizing the motivation of innovators is important in generating valuable innovations for a firm (Bogers and West, 2012). The space for co-creation activities in an innovative brand community helps attract motivated innovators who want to create valuable content and new innovative features.

Research on innovation in user communities shows that innovative brand communities allow users who are attached to a company's products and services to participate in an open innovation process. The literature provides insights concerning the characteristics of the most innovative users (Jeppesen and Frederiksen, 2006; Füller et al., 2007; Nambisan and Baron, 2010; Marchi et al., 2011) and about determinants of willingness to share their contributions with a firm (Roberts et al., 2014; Füller et al., 2008; Jeppesen and Frederiksen, 2006), yet little research has been conducted concerning mechanisms that support the process of co-creation with a brand community, transforming it into an innovative brand community.

Our research will focus on the establishment and development of this area of co-creation that allows a brand community to become innovative. The objective is to identify the mechanisms that enable a company to develop an innovative brand community, that is to say, a community of users attached to a brand that together develop activities of co-creation and diffusion of innovation. I selected three communities of users that have the characteristics of a brand community in which innovation processes take place: *DreamOrange, Freebox*, and *Trackmania*. These communities have formed around new products and services, designed initially by the firm, that then were altered on the basis of multiple contributions by members of the community. In the following sections I present the methodology employed to study the three cases and the process that underlies innovation within these brand communities.

3. Methodology

The aim of this research is to identify the process and mechanisms allowing for innovation with users in a brand community. I used a longitudinal multi-case research design (Eisenhardt, 1989; Eisenhardt and Graebner, 2007) to examine co-creation activities that support this type of innovation. A longitudinal study identifies processes and mechanisms that take time to unfold and it allows collection of rich data by integrating historical and contextual dimensions (Miles and Huberman, 1994). The use of multiple cases reinforces the results, because they replicate the same logic in each case and thereby confirm (or disconfirm) patterns, which in turn increase the robustness of the findings (Yin, 2003). Innovation process describes the stages that help a firm innovate with users. Mechanisms are "*the wheelwork or agency by which an effect is produced*" (Hernes, 1998, p. 74). Identifying these mechanisms is interesting because they provide an intermediary level of analysis between pure description and social phenomenon and allow one to understand how organizations act as the wheelwork producing a social outcome (Davis and Marquis, 2005). In our cases, mechanisms support the social phenomenon of innovation, an innovation that takes place both in a firm and in a brand community.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

The three focal brand communities are organized around the firm's offer, and their contributions have been integrated into the firm's innovation processes. To select the three cases, I considered the mode chosen by the firm to control the community, as well as the size of the community. *DreamOrange* is a small brand community set up and hosted by the firm Orange; *Freebox* and *Trackmania* represent two large brand communities set up and hosted by users. Orange maintains direct control over *DreamOrange*, whereas in the other two cases, the firms Iliad and Nadeo have only indirect control. Furthermore, two of the communities represent the telecommunications sector (*Freebox*, *DreamOrange*), whereas the other is in the video game sector (*Trackmania*). In both sectors, firms tend to innovate and maintain relations with users. In these three communities, users participate in the creation of innovations within dedicated spaces supported by tools, such as forums, innovation toolkits, and open source software. This setting is attractive, considering the many co-creation activities they feature, and the firms are well-known brands. The communities were selected in 2007. To understand the construction of three innovative brand communities, the study period covered the birth of each community through to its maturity, 2003–2009 for *Trackmania* and *Freebox* and 2006–2009 for *DreamOrange*. These periods were long enough to collect detailed data and observe longitudinal patterns.

3.1. Data collection

My data collection strategy focused on tracking the life of the community and co-creation activities between the firm and the brand community. I defined co-creation as an activity in which the user directly or indirectly contributed to the innovation process. I conducted 48 semi-structured interviews with leaders of these communities to collect data about their relations with the company, their co-creation activities, and the effects on the innovation process or community life. For the *Trackmania* community, the interviewees included the most active members in the general forum, as well as the managers of the most well-known sites, and the manager of the firm that produces the game, Nadeo. In the *Freebox* community, the respondents were the managers of the most well-known sites, and for the *DreamOrange* case, I interviewed members of the project team and Internet users who participated in bulletin boards. A first wave of interviews was conducted in 2006 and 2007. Interviews were then repeated in 2008 and 2009 with the leader of the Trackmania community and the leader of Nadeo, two leaders of the Free community, and the DreamOrange project manager and site manager.

To complement the interview data, I conducted documentary research on the communities' websites and in the specialized press. In all three cases, I became a member of and was involved in the different communities, which ensured that the data collection reflected direct experience and helped limit bias or over interpretation of the respondents. My involvement was determined by the case context: I participated as a game player in the *Trackmania* community, as a user of the *Freebox* in the *Freebox* community, and as a contributor to the project in the *DreamOrange* community. The data were collected over a period of three years, using a historical reconstruction of the period prior to the collection. With these data I wrote chronological case histories for each community and submitted these documents to a member of each community: managers of the *Trackmania* and *Freebox* community Internet sites and the manager of the *DreamOrange* Internet site. Their comments and remarks helped complete the chronological case histories.

3.2. Data analysis

To process the data, I applied theoretical coding (Miles and Huberman, 1994) using Atlas.ti software. For data triangulation, I also included analyses of the *Trackmania* and *Freebox* forums and the minutes of meetings and e-mails about *DreamOrange* projects. The theoretical coding relied on the categorization and interpretation of the qualitative data, and the initial categories came from my theoretical framework, including all the elements that constitute a space for co-creation in a brand community. Specifically, I coded the links between firms and communities (forum activities, meetings inside or outside the firm), users' contributions to the innovation process (creation of content, creation of new functionalities, generation of ideas, appearance of new uses, beta tests, bug descriptions, evolution of products and services, user involvement in diffusion) and activities that supported the development of the community (creation of websites, events, appearance of leaders, conflict resolution). Using these categories, I compiled information into chronological case studies, focused on co-creation in the innovation process and the history of the communities (i.e., their birth and evolution). I then analyzed these chronological cases to find theoretical patterns or relationships in each case. I grouped activities with same logic of functioning in coherent macro-categories (openness, linking, integration, animation...) to develop more robust theoretical concepts (Eisenhardt and Graebner, 2007). I presented these macro-categories to other researchers and managers of these community (Trackmania and DreamOrange) in order to test their consistency and validity. The number and definition of these macro-categories were refined during these presentations. I then examined the deployment of activies of each category in time to detect the effects on the innovation process. Finally, I grouped these effects in coherent phases of the innovation process (contribution generation, contribution socialization, contribution adoption).

3.3. Communities' and firms' activities

3.3.1. Trackmania and Nadeo

Nadeo is a computer game producer that develops and publishes car racing games called *Trackmania*. From 2003 to 2008, the company produced four paying versions, along with two free games focused on competition. *Trackmania* caters to all

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

players, from casual to "hard core" gamers. The *Trackmania* community is highly dynamic, including some 400 player sites in the site directory. The site director is heavily involved in the game's general forum and regards himself as a passionate player. He regularly finances prizes for competitions and hosts some of the community's best websites.

3.3.2. Freebox and Iliad

Iliad is a new entrant in the telecommunication services market. In 2002, it became the first operator to propose ADSL triple-play Internet access,[2] based on the *Freebox*, an innovative ADSL modem.[3] It has advanced this innovation by gradually integrating new functionalities into the successive versions, such as WiFi, TNT tuner, multicast video, digital VCR, and customized TV. The highly active *Freebox* community consists of about 100 sites, directly managed by users. Iliad has established many links with the community; from the outset, employees and managers have appeared in newsgroups to talk with brand fans. The operator has also systematically made contact with the managers of the sites that have developed fastest.

3.3.3. DreamOrange and Orange Labs

The *DreamOrange* project aims to develop a design platform with users. The site displays applications and services that Orange Labs offers to internal teams and Internauts, designed to both involve users in the design of new services and develop a community favourable to the brand. Therefore, R&D project leaders publicize their projects, test their concepts, and demonstrate them for a panel of Internauts, as well as launch competitions and communicate directly with Internauts. On the website, Internauts can comment, tag articles, and offer suggestions. *DreamOrange* does not provide a general forum, but members can send private messages. Site members are regularly invited to join private bulletin boards—the Internet equivalent of focus groups.[4]

Table 1 contains a comparison of the three configurations in relation to my analytical categories.

4. Results

The three case studies reveal contrasting situations. For both *Freebox* and *Trackmania*, active brand communities have developed around the offer, providing new service content, developments, ideas, and concepts. They have even become media vehicles for disseminating the offer. However, for *DreamOrange*, community development has been modest, in the form of opinions about concepts under development, with limited gains for the firm. A few ideas have triggered new developments though. It appears that Orange's direct management of the community limits users' creative potential, because the conditions conducive to innovation are not fulfilled.

The analysis reveals three phases and six basic mechanisms underpinning the innovation process with users in a brand community. Innovation begins with the generation of user contributions (contribution generation), next user ideas, content and developments are presented, discussed and enriched within the firm and the community (contribution socialization), and finally these contributions are evaluated and adopted by both the firm and the community (contribution adoption). Two mechanisms support user contributions, an active animation of the brand community (animation) and the openness of the innovation process at the firm level (openness). Socialization of contributions is favoured by the structuration of complementary user groups in a community (structuring) and the production of many ties with the independent brand community (linking). Finally, the collective thinking in the community about itself (theorization) and the integration of users' creations in an innovative offer (integration) enhance adoption of user contributions by both the firm and the community (Fig. 1).

4.1. Animation

Animation is a mechanism that renders the community active and interesting for the users. To develop relations and interest users, the community needs regular events to draw users together and facilitate their encounters. Animation strengthens the community and provides an opportunity to participate in the co-creation of innovation. It constantly gives users reasons to log on to the community's website, maintains their interest in it, and favours their contributions. The effects of animation are the attraction and engagement of users in community life.

As Tom, creator of an Internet site for the Trackmania community noted "We tried to show what was happening in the community, the little events, the new things... As people become interested, we try to give them info... after that we proposed circuits, and vehicles. We also organized the first competition." Events are an opportunity to involve the most active users in co-creating innovation and in organizing the community. Community animation thus makes products and services more interesting.

[2] This network package offers Internet, telephony, and television in the same box.
[3] High-speed Internet technology that uses a classic copper pair to link households to an ADSL server.
[4] A focus group consists of eight to fifteen people who meet for 1 to 3 h, during which time they react collectively to a concept, product, service prototype, or topic. The Internet equivalent takes place asynchronously over two weeks.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

Table 1
Characteristics of the three community–firm cases.

Categories of analysis	DreamOrange	Freebox	Trackmania
Size	Community in a single site, with 2000 members, 6000 messages	Community dispersed over 100 websites. *Freenews* has 55,000 members	Community dispersed over 400 websites. The forum has 20,000 members
Mode of control	Direct control by the firm. Community leaders are firm employees	Indirect control by the firm. Management of the link with the community	Indirect control by the firm. Management of the link with the community
User categories	Students and professionals interested in Orange's innovations. Few lead users	Users of *Freebox*, both experts and novices. Presence of lead users	Players of *Trackmania*: creators of circuits, competitors, and team managers. Presence of lead users and highly creative individuals
Openness of innovation process	None: design steered entirely by R&D	Partial: connection to internal video flows, *FreePlayer* software	Wide: creative tools and graphic resources available
Creation tools	Animation tools (bulletin board)	*Freeplayer* software. Regular meetings with Iliad management. Sites and events managed by users	Tools for creation and animation. Direct discussion on the forum with game designers. Sites and events managed by players
Spokesperson	Selected by *DreamOrange* from members registered on the site	Community leaders and developers of the *Freeplayer* "mods"	Community leaders and all players involved in the creation of content or organization of events
User intervention in design	Generation of ideas, tests of concepts	Improvement of the existing offer, generation of ideas, creation of new services	Creation of content and activities. Development of new functionalities
User involvement in diffusion	None	Users discuss the offer in forums	The community attracts new players
Internal sources	16 interviews 134 pages	8 interviews 115 pages	16 interviews 13 project meetings 184 pages
External sources	14 interviews on blogs and information websites, forum of the game, 2 videos	10 interviews on information websites, *Freenews* forum	Information websites
Interviewees	General manager Developer Gamer Active community member	Community leader General manager Manager Developer	Community member Project manager Developer

With *Trackmania*, players can easily organize games by switching their machines to server mode. The list of active servers and number of players on each server appears in the game, and then players can organize competitions and contests, as well as places to share their creations. Every season, *TM Ligues*, a popular game championship, offers a new circuit on which hundreds of pilots try to obtain the best possible score. The players form small teams to participate, create cars corresponding to their images, and plan their practice sessions. In addition, they distribute tasks among their most creative members, those with management skills, and competitors. In the *Freebox* community, animation occurs instead through the forums and news websites. Regular additions of innovative functions represent the main events that animate the forums. Meetings organized by Iliad with community leaders also provide a source of animation; they feed the sites with news, information, and discussions. At *DreamOrange* though, animation happens only on the *DreamOrange* site, mainly via an annual competition for new products intended for engineering and design schools. On the private part of the site, bulletin boards also represent animations that create contact between Internauts, though they affect relatively few *DreamOrange* members.

4.2. Openness

Openness is a mechanism of opening the design of innovation to user contributions. It entails organizing entry points in the innovation process to allow users to participate in the initial design or modification of an innovation so it meets their needs. The effects of openness are the attraction and engagement of creative users in co-creation activities. The user is no longer simply an information provider, but rather a co-creator of the innovation. Openness means introducing users' contributions at all stages of an innovation, both during idea generation and in the intermediate phases. At a technical level, openness takes the form of open source software, toolkits for users, or bulletin boards. Openness allows the establishment of an area of co-creation in which innovation can be modified in terms of its features and its content. This openness attracts both lead and creative users to the community.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

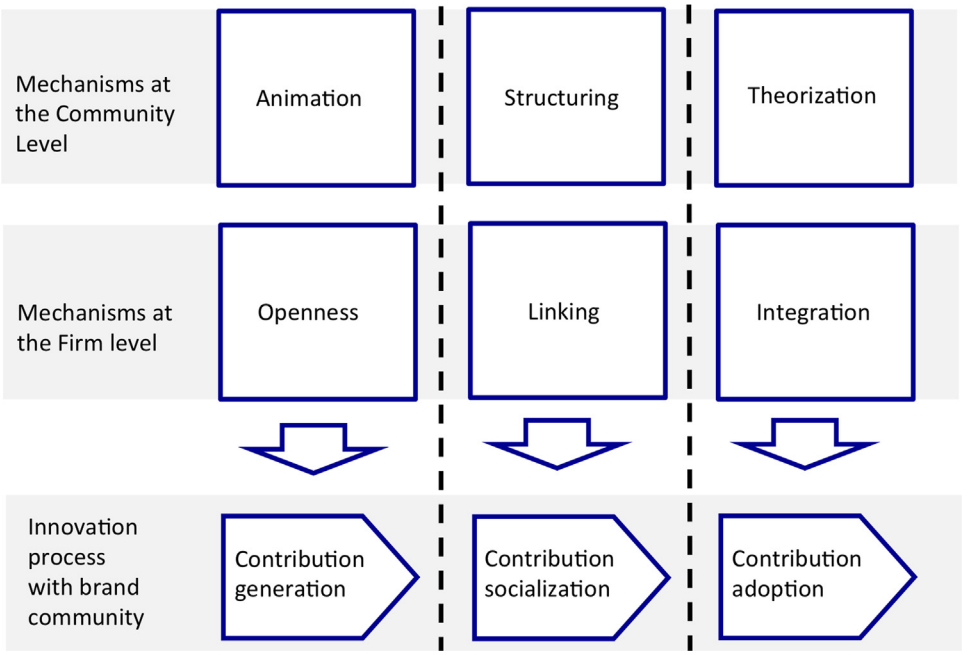

Fig. 1. Process and mechanisms allowing for innovation with users in a brand community.

For example, Simon, a member of the DreamOrange site explained, "it's interesting to see what is happening in a big structure like Orange, it is what will appear tomorrow as innovations. That interests me because I'm a computer engineer, and I love developing software." Such active users contribute to the development of an innovation by sharing their creations and knowledge; they also support the development of the community by creating community websites and organizing new activities. A user known as Starbuck has launched several video-making competitions on Trackmania, because "the developers (Nadeo) are beginning to think of those who play their game, and who are as capable as them of making the game evolve and creating things for the game... that the players can use themselves." The modalities of openness take different shapes in each case, but the basic principle remains the same.

In Trackmania openness refers to the direct availability of a toolkit that players can use within the game to create content and activities available to all other players. The primary tool centres on content creation (circuits, cars, videos, sites) and activity creation (organization of network races, local forums, chats during the game). The community has produced more than 200,000 circuits in three years, launched dozens of competitions, and produced tens of thousands of videos—the most popular of which has been viewed more than 2 million times. At *Freebox*, openness is less important, and users are minimally involved in the initial design process. However, the *Freebox* parameters allow for the configuration of specific services that users adopt to put their machines online, produce original multimedia configurations, and publish telesites[5] or their own videos on the *Freebox* TVperso service. Finally, Orange has changed its innovation methods. On the *DreamOrange* site, project leaders can gather information and ideas at all design stages. *DreamOrange* thus provides Orange engineers with concepts generated by users, as well as user feedback on concepts produced by Orange Labs. The site specifically offers Internauts a means to express their opinions about the innovations developed in the Orange laboratories.

4.3. Structuring

Structuring is a mechanism that organizes the community into interdependent and complementary user groups. It leads to a categorization of users based on their skills and their contribution to the value of the company's innovative offer. The structuring of contributors is favoured by providing each user category with appropriate tools, forums for discussion, and specific exchanges. Creation tools allow each user category to contribute according to their motivations and skills. Exchange sites make these contributions available to all categories of users and promote their recognition by the larger community. Thus, there is a community of interdependent user groups, in the sense that the presence and contributions of a given group brings value to the other groups. The effects of structuring are the organization of a creation chain and increased motivation for creative users to create. Structuring thus favours the contribution of users in the design and development of innovative offers and the growth of the community.

[5] Telesites are web pages that can be consulted directly through television by means of a *Freebox*.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

The Trackmania community consists of complementary groups of users who use specific tools: those for designers to create circuits, cars, and videos, those for managers who organize races and international competitions, and those for competitors who make the game exciting and intense. Within the *Freebox* community, community leaders are clearly identified and invited to comment on the evolution of the *Freebox*. Administrators in various forums manage questions and answers about usability issues, and developers have adapted the open source software *Freeplayer* to transform the *Freebox* into a real multimedia platform. At DreamOrange, there are only two categories of users, those who comment on articles and those who participate in bulletin boards. Nevertheless, the user groups are not interdependent and R & D project heads do not directly interact with users.

4.4. Linking

Linking is a mechanism that creates dense relations between the users, and between the company and the community. This mechanism promotes the establishment of both a community centred on the commercial proposition, and communication channels within the community and between the community and the company. The effects of linking are the creation of a social group of co-creators with dense relationships. Ideas and content can thus circulate, be enriched, and be assessed by the community. The conditions of the relationship may be created by the firm, yet are based on the emerging community. Key actors in the nascent community then set up means to support the network alliance of people through common activities and projects, often supported by technical devices (websites, forums, and creative tools), clearly identified leaders, and norms that govern behaviours. Linking is thus necessary to find lead users who will help modify the innovation and encourage the development of the brand community. Interactions provide opportunities for meetings of users, content in forums, and the emergence of project websites and relevant activities. Clash, a *Trackmania* gamer explained, "*In the beginning, there weren't many of us, so relationships developed rapidly, we formed a core community that has remained very active up until today, that's what attracts me to this game. I joined the game, I connected to the net, and straight away players said 'hi,' 'lol,' 'GG,' which means that you take an interest and get hooked.*"

The *Trackmania* creative tools, forum, and server mode were created as soon as the firm and the players started to interact. Gradually websites devoted to the game appeared and grew, some even to the point that they are nearly unavoidable. *Car Park*, for example, proposes 3D models of cars with a wide range of associated skins so that users can customize their vehicles. The firm promotes these large websites by financing their hosting, providing technical support, and maintaining direct contact with the leaders. In the *Freebox* community, the unavoidable websites are still managed directly by users; for example, *Freenews* began as a personal page to provide technical data, grew successful, and then became a professional site and a news channel on *Freebox*. Since its launch, the webmaster of *Freenews* has met regularly with Iliad's managers, and Iliad also financially assisted the project and hosted its servers free of charge. The site now draws more than 600,000 visitors per month, and the TV channel is viewed by 10,000 users daily. Finally, the conditions surrounding *DreamOrange* did not favour networking among users. Instead, the firm preferred direct links with panels of users, as well as close supervision of their contributions to bulletin boards.

4.5. Theorization

Theorization is a mechanism of simplification and abstraction that identifies categories according to their properties and relations (Greenwood et al., 2002) which is particularly important in the processes of change initiated by innovators, especially in creative industries (Svejenova et al., 2007). In the context of a brand community, theorization is the objectification of the subjective community that speaks about itself to explain its evolution, objectives, values and rules. The community thereby acknowledges its own existence, thinks about the meaning of its actions, and defines its reason for being. The effects of theorization are that users' contributions can be justified in simple terms that are comprehensible to everyone, and ultimately be accepted by the users. Newcomers easily find reasons to adopt participative behaviours and help design the offer. Most theorization is done by community spokespersons. By confirming its values, the community grants an identity to the offer that is likely to attract other users. In this sense, theorization is conducive to the adoption of the users' contributions by the community when they are aligned with its values.

For *Trackmania*, theorization describes a common attitude defended by its leaders who call it "the TM spirit." Players must give the best of themselves, whether they are competing or creating content, and they should share their creations and passions with other players while respecting the rules of good conduct. The TM spirit was not mandated by the game producer, rather it developed gradually, from a core of highly active players who set an example by organizing competitions and developing a site for interaction and sharing. In parallel, player involvement in creation and animation processes is well justified, because all of them benefit from individual contributions. Moreover, players do not see the publication of *Trackmania* as a purely commercial operation; the perception is that the producer is there not to exploit players, but rather to enable them to have fun. Nadeo reinforces this impression by regularly publishing free additions to its commercialized games and freely disseminating several complete versions of *Trackmania*. In the *Freebox* community, Internauts consider Iliad the most innovative access provider, because it sells its best and most recent offers at the same price, without extra charges or hidden expenses. This position justifies their participation in the creation of news, in technical support, and in debugging. As Benazech explained "*If I developed that, it was firstly because it was useful to me as well. And then after that, you don't develop for Free, but it's something that Free benefits from, it isn't a company that has a bad image either . . . they are very*

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

Table 2
Details of mechanisms allowing for innovation with users in a brand community.

Processes	Animation	Openness	Structuring	Linking	Theorization	Integration
Principle	Animating community life to create and maintain relations among users	Opening the innovation process. Make available toolkits for innovation	Structuring of complementary and interdependent community user groups	Networking among users and between users and the firm	Justification of the offer, the community, and its relations with the firm	Transferring contributions between the community and the firm, and within the offer
DreamOrange	Testing concepts using the bulletin board. Organization of competitions for ideas and development	User involvement in different stages of the innovation process: from idea generation to beta testing	3 groups: bulletin board visitors, observers who leave comments, and participants	Creation of a community hosted and managed by Orange	None	Adoption of the bulletin board by R&D teams. Direct acquisition of data from the bulletin board
Freebox	Animation in forums. *Freenews* TV. Direct and regular relations with Iliad and community leaders	Providing an "Internet box" to parameterize services and developments around the *Freeplayer*	4 groups: community leaders, forum administrators, developers and simple users	Emergence of a news website and a mutual support website	Iliad defends users. It proposes the best and most innovative offer on the market	Integration of Freenauts' ideas into new versions of the service
Trackmania	Animation in forums. Development of competitions and entry into the world cup. Regular relations with the community	Making available tools for content creation and for activities	4 groups: creators, competitors, managers, and occasional players	Emergence of the news website, content trading, and the competition team's website	Emergence of the TM spirit. Nadeo is "honest and respects its players." It proposes add-ons and free games	Integration of players' innovations into new versions of the game. Direct integration of players' creations
Output	Supporting generation of user contributions		Supporting socialization of user contributions		Supporting adoption of user contributions	

innovative, they like setting the cat amongst the pigeons." Some Internauts even assert that Iliad is there not to "make money", but to defend their interests. Maintaining the same price since *Freebox* was launched, and regular interventions by the CEO of Iliad to defend *Freenautes*' interests against shareholders has strengthened this conviction among the community members. At *DreamOrange* there is no theorization. The lack of direct debate with Internauts or among the participants in *DreamOrange* precludes the emergence of justifications among the Internauts for the existence of the site.

4.6. Integration

Integration is a mechanism that incorporates user creations and innovations into the innovative offer. It facilitates the dissemination of innovations by both the community and the firm. Innovation toolkits directly integrate a user's creations into the product, without additional developments or any particular technical knowledge. Adding an application program interface (API) also enables advanced users to develop functionalities that are directly compatible with the product. These methods avoid conversion errors and virtually eliminate the cost of integrating users' creations. The effects of integration are the direct and rapidly transfer of the users creations in the offer without adding costs. The product can then be enhanced by unlimited numbers of users' creations and inputs. Direct integration enables the community to evaluate the quality of its members' creations and encourage more users to participate. According to Scopius, a *Trackmania* circuit creator "*There are rewards that are attributed to the best circuits. It's true; I think I must be among one of the three or four top creators as far as the number of rewards is concerned. I know that my circuits are appreciated. So I carry on, that motivates me to try to be just as good or even better.*" The most interesting creations get downloaded frequently; the others fall into oblivion. The most useful functionalities also benefit from the support of many developers, but others lack technical support. Integration also promotes community growth by providing valuable content for all members. The more content the community possesses, the more attractive it is to users (Wiertz and de Ruyter, 2007).

Although the contributions of *Trackmania* players do not belong to the firm, they enhance its offer. In *Trackmania*, players' creations can be used directly in online car races. The community's innovations have also been gradually integrated into various game versions, such as automatic management of graphic resources, trading circuits and access to players' sites directly in the game (*Manialinks*), and rankings and a regional forum (*Maniazones).* In the Freebox community, the production of news, technical support, and software by the community are not directly captured by Iliad, but they contribute to its offer and reduce the cost of technical support. Today Iliad takes ideas discussed in meetings with the community leaders, develops them, and integrates them into new versions of the *Freebox*. At *DreamOrange*, R&D teams have ultimately adopted several tools used by members of the site. Initially they integrated the users' opinions into their concept for a new

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

service, before calling on them directly to produce new concepts. I summarize the six mechanisms that allow for innovation within a brand community in Table 2.

5. Discussion

5.1. Theoretical implications

My research points out that to innovate with a brand community, a firm must build a space of co-creation in order to attract the most innovative users in an active community and thus generate valuable user contributions. I have identified three processes and six basic mechanisms underpinning co-creation activities in an open innovation process with a brand community. These six mechanisms allow us to deepen the understanding of the phenomena involved in innovation with a brand community. My research makes it possible to discuss various elements relating to: (1) the type of brand community management, (2) the degree of company openness, (3) the role of users in an innovative brand community and (4) the complementarity between social and co-creation spaces in an innovative brand community.

First, it is possible to associate the firm and the brand community in the same innovation process, while avoiding the problems associated with the appropriation of innovation and the maintenance of an active community of users. Innovation starts in a firm and is improved in the brand community. In this case, to develop an innovative brand community, the firm should not directly control the community activities, but rather orchestrate them by providing tools for creation and animation (Parmentier and Mangematin, 2014). Direct control provokes conflicts and user involvement decreases (Dahlander, 2005), as the *DreamOrange* case shows. User creations should be framed but not controlled; otherwise, user involvement and motivation disappears. Integrating the community too deeply into the firm stunts its development. Opening the innovation process, animating an active brand community, structuring the role and contribution of users, facilitating the creation of many ties in the community and with the community, justifying the creative work and enhancing the adoption of user contributions by both the firm and the community, are the way to orchestrate a brand community in order to innovate with it. Moreover, the orchestration of relations with the community can help overcome strategic problems that result from strong relations with a user community, such as when the focus on existing clientele causes a firm to disregard potential customers and slows its development of new activities (Danneels, 2003). According to Danneels, strong links with clients enhance efficiency, and weak links improve flexibility. I suggest that by managing its relations with an innovative brand community, a firm can avoid this dilemma: It can maintain strong, regular, and intense relationships with the most creative users but also engage in weak, occasional, loose ties with other users. This approach grants it access to sources of innovation that then will be extensively socialized.

Second, it is not necessary to open firm boundaries completely to innovate with users. Rather, innovation with a brand community means revealing part of a firm's internal resources to the external environment (Dahlander and Gann, 2010). In our case studies, in contrast with open source settings, not all resources should be revealed. The firm instead retains ownership of its innovations while still enabling users to modify the offer to adapt it to their needs. Our research thus replies to the question concerning how innovation by users influences the boundary between a producer and a user (Bogers et al., 2010). Moreover, innovating with a brand community is a good way to open a firms' business model without the negative effects on value capture. Chesbrough explains that an open business model allows a company to be more efficient in creating and capturing value (Chesbrough et al., 2006). However, implementation is not easy and openness on value creation can induce negative effects on value capture, especially with an industrial partner (Chesbrough and Appleyard, 2007). Opening the business model with an innovative brand community enables improving performance (creating more value) from the ideas, knowledge, and content produced outside the firm, without the value capture problem. In this case, the mechanisms of theorization and integration are crucial. The firm must justify the work of users and facilitate the integration of their creations in the offers in order to maintain the motivation of the most creative users.

Third, all types of users are necessary to develop innovation activities in a brand community. The innovative brand community consists of complementary user categories that all contribute to the innovation process (the structuring mechanisms). In *Trackmania* for example, creators, managers, competitors, and casual gamers offer complementary contributions, although the lead user still plays a decisive role in the design phases and in building the community. Other user categories are more involved in consolidating the community through animation and theorization, which helps diffuse the innovation. In innovation communities that feature more lead users, activities that centre on problem solving and performance optimization create the most value (Mahr and Lievens, 2012). In an innovative brand community, other types of users also offer value (Schau et al., 2009). They identify problems or complete the contributions of lead users by focusing more on design, functionalities, and use. When mechanisms favour the development of an innovative brand community, it is possible to attract the most creative members, who then have a greater propensity to become involved in co-creation activities (Füller et al., 2008) while still developing other activities necessary for the vitality of the brand community (Schau et al., 2009).

Fourth, an innovative brand community is both a social activity space and co-creation activity space. A brand community is a social space where many links develop between users, and where many social activities facilitate the engagement of users in the community, thus enhancing brand loyalty (Muniz and Schau, 2005; Schau et al., 2009). But this type of social activity space is not enough to engage users in innovation activities. Identification of mechanisms for building a co-creation space in a user community enables understanding how to innovate with a user community that is attached to the brand, i.e.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

an innovative brand community. My work thus completes the research about the building of brand community (McAlexander et al., 2002) and the innovation with brand communities by providing specific information concerning how to develop co-creation activities in a brand community.

5.2. Managerial implications

A firm should dedicate itself to managing its relations with brand communities by facilitating the six mechanisms that support innovation with users. Such management practices require technical devices, such as toolkits for innovation that help users enrich the service and organize activities for the community. However, unlike Von Hippel and Katz (2002), who consider only product design and customization, I argue that toolkits can also reinforce the animation of the community, its relations with the firm, and the acceptance of user creations. They help the firm manage community relations and incorporate users' innovations. Furthermore, by attracting creators and lead users, tools help trigger community formation. In turn, the firm obtains an exceptional competitive advantage; a firm with classical innovation practices could never produce the 200,000 circuits created by the *Trackmania* community, in that each circuit takes approximately three hours of work. Its link with an innovative brand community saved the firm approximately 600,000 work hours and thus is one of its most important assets.

The community becomes a resource for both value creation and value capture, with several consequences for the firm's functions. Managing the link with the community constitutes a *core competency*, so the firm must devote resources to acquiring and developing the competency, including a community manager, financing for the community project, constant monitoring of the community, and specific tools. Moreover, the community becomes a stakeholder with as much influence as employees or shareholders. Any changes in the firm's offer, whether technological or marketing related, that do not stem from the community will require pretesting in the community before being widely introduced. The innovation process must also be reviewed to integrate inputs and innovations from the community, whether through direct integration with an innovation toolkit or by using evaluations by members of both business and community cultures. Furthermore, the firm should regard the community as a pool of talent and enhance its relations with that talent by recruiting the most innovative and active individuals as developers, community managers, or sales managers. Therefore, constructing an innovation process that is open to the brand communities requires the firm to review its strategy for managing innovation.

5.3. Limitations and implications for research

With multiple longitudinal case studies, I strengthen the robustness of the results, but they still cannot be generalized to all industries. This research has focused on sectors that sell digital products and services. Additional research should spread to other industrial sectors and study the differences between digital product and physical product innovative brand communities, especially with regard to organizational features. It would also be advantageous to consider other external factors such as market or technological and social dynamics that might favour innovation with a user community.

6. Conclusion

To build an innovation process involving a brand community, a firm should create and manage its relations with that community carefully. It can base its approach on six mechanisms that support innovation: animation, openness, structuring, linking, theorization and integration. This innovation process crosses firm and community borders and benefits from the assets provided by both types of organization. When the firm reshapes its boundaries, it can revise its innovation processes and integrate user knowledge and innovations. The resulting innovative offer includes a toolkit for innovation, provides support for brand community development, and encourages constant contact with the most active members. With its core competency of managing relations with the community, the firm can generate the most interesting innovations from the users' point of view, develop a loyal user base, enjoy lower innovation costs, and secure a strong competitive advantage in its field. Thus, a new type of competition seems likely to emerge, in which firms aim not only to develop the best product in terms of functionalities or cost, but also to give their product characteristics that enable users to innovate, give it meaning, hack it, and adapt it to their increasingly individual and complex needs.

References

Algesheimer, R., Dholakia, U.M., Herrmann, A., 2005. The social influence of brand community: evidence from European Car Clubs. J. Market. 69 (3), 19–34.
Benner, M.J., Tushman, M.L., 2003. Exploitation, exploration, and process management: the productivity dilemma revisited. Acad. Manage. Rev. 28 (2), 238.
Berger, C., Piller, F.T., 2003. Customers as co-designers. Manuf. Eng. 82 (4), 42–45.
Berthon, R.P., Pitt, L.F., McCarthy, I., Kates, S.M., 2007. When customers get clever: managerial approaches to dealing with creative consumers. Bus. Horiz. 50, 39–47.
Bogers, M., Afuah, A., Bastian, B., 2010. Users as innovators: a review, critique, and future research directions. J. Manage. 36 (4), 857–875.
Bogers, M., West, J., 2012. Managing distributed innovation: strategic utilization of open and user innovation. Creat. Innov. Manage. 21 (1), 61–75.
Burger-Helmchen, T., Cohendet, P., 2011. User communities and social software in the video game industry. Long Range Plann. 44 (5/6), 317–343.

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001

Chesbrough, H., Vanhaverbeke, W., West, J., 2006. Open Innovation: Researching a New Paradigm. Oxford University Press.
Chesbrough, H.W., Appleyard, M.M., 2007. Open innovation and strategy. Calif. Manage. Rev. 50 (1), 57–76.
Dahlander, L., 2005. Appropriation and appropriability in open source software. Int. J. Innov. Manage. 9 (3), 259.
Dahlander, L., Gann, D.M., 2010. How open is innovation? Res. Policy 39 (6), 699–709.
Danneels, E., 2003. Tight-loose coupling with customers: the enactment of customer orientation. Strateg. Manage. J. 24 (6), 559.
Davis, G.F., Marquis, C., 2005. Prospects for organization theory in the early twenty-first century: institutional fields and mechanisms. Organ. Sci. 16 (4), 332–343.
Eisenhardt, K.M., 1989. Building theories from case study research. Acad. Manage. Rev. 14 (4), 532.
Eisenhardt, K.M., Graebner, M.E., 2007. Theory building from cases: opportinities and challenges. Acad. Manage. J. 50 (1), 25–32.
Franke, N., Keinz, P., Schreier, M., 2008. Complementing mass customization toolkits with user communities: how peer input improves customer self-design. J. Prod. Innov. Manage. 25 (6), 546–559.
Franke, N., Shah, S., 2003. How communities support innovative activities: an exploration of assistance and sharing among end-users. Res. Policy 32 (1), 157.
Füller, J., Jawecki, G., Muhlbacher, H., 2007. Innovation creation by online basketball communities. J. Bus. Res. 60 (1), 60–71.
Füller, J., Matzler, K., 2007. Virtual product experience and customer participation: a chance for customer-centred, really new products. Technovation 27, 378–387.
Füller, J., Matzler, K., Hoppe, M., 2008. Brand community members as a source of innovation. J. Prod. Innov. Manage. 25 (6), 608–619.
Füller, J., Schroll, R., von Hippel, E., 2013. User generated brands and their contribution to the diffusion of user innovations. Res. Policy 42 (6/7), 1197–1209.
Greenwood, R., Suddaby, R., Hinings, C.R., 2002. Theorizing change: the role of professional associations in the transformation of institutionalized fields. Acad. Manage. J. 45 (1), 58.
Hemetsberger, A., Reinhardt, C., 2009. Collective development in open-source communities: an activity theoretical perspective on successful online collaboration. Organ. Stud. (01708406) 30 (9), 987–1008.
Hernes, G., 1998. Real virtuality. In: Hedstrom, P., Swedberg, R. (Eds.), Social Mechanisms: An Analytical Approach to Social Theory. Cambridge University Press, New York, pp. 74–101.
Jeppesen, L.B.O., Molin, M., 2003. Consumers as co-developers: learning and innovation outside the firm. Technol. Anal. Strateg. Manage. 15 (3), 363–383.
Jeppesen, L.B., 2005. User toolkits for innovation: consumers support each other. J. Prod. Innov. Manage. 22 (4), 347–362.
Jeppesen, L.B., Frederiksen, L., 2006. Why do users contribute to firm-hosted user communities? The case of computer-controlled music instruments. Organ. Sci. 17 (1), 45–63.
Kozinets, R.V., 2002. The field behind the screen: using netnography for marketing research in online communities. J. Market. Res. 39 (1), 61–72.
Kozinets, R.V., Hemetsberger, A., Schau, H.J., 2008. The wisdom of consumer crowds: collective innovation in the age of networked marketing. J. Macromarket. 28 (4), 339–354.
Lakhani, K.R., von Hippel, E., 2003. How open source software works: "free" user-to-user assistance. Res. Policy 32 (6), 923.
Leimeister, J.M., Huber, M., Bretschneider, U., Krcmar, H., 2009. Leveraging crowdsourcing: activation-supporting components for IT-based ideas competition. JMIS 26 (1), 197–224.
Mahr, D., Lievens, A., 2012. Virtual lead user communities: drivers of knowledge creation for innovation. Res. Policy 41 (1), 167–177.
Marchi, G., Giachetti, C., de Gennaro, P., 2011. Extending lead-user theory to online brand communities: the case of the community Ducati. Technovation 31 (8), 350–361.
McAlexander, J.H., Kim, S.K., Roberts, S.D., 2003. Loyalty: the influence of satisfaction and brand community integration. J. Market. Theory Pract. 11 (4), 1.
McAlexander, J.H., Schouten, J.W., Koenig, H.F., 2002. Building Brand Community. J. Market. 66 (1), 38.
Miles, M.B., Huberman, A.M., 1994. Qualitative Data Analysis: An Expanded Sourcebook. Sage Publications, Thousand Oaks.
Muniz Jr., A.M., O'Guinn, T.C., 2001. Brand community. J. Consum. Res. 27 (4), 412–432.
Muniz Jr., A.M., Schau, H.J., 2005. Religiosity in the Abandoned Apple Newton Brand Community. J. Consum. Res. 31 (4), 737–747.
Nambisan, S., Baron, R.A., 2009. Virtual Customer Environments: testing a model of voluntary participation in value co-creation activities. J. Prod. Innov. Manage. 26 (4), 388–406.
Nambisan, S., Baron, R.A., 2010. Different roles, different strokes: organizing virtual customer environments to promote two types of customer contributions. Organ. Sci. 21 (2), 554–572.
Parmentier, G., Mangematin, V., 2014. Orchestrating innovation with user communities in the creative industries. Technol. Forecast. Soc. Change 83, 40–53.
Piller, F., Kumar, A., 2006. For each, their own. Ind. Eng. 38 (9), 40–45.
Piller, F.T., Walcher, D., 2006. Toolkits for idea competitions: a novel method to integrate users in new product development. R&D Manage. 36 (3), 307–318.
Raymond, E., 1998. The Cathedral and the Bazaar.
Raymond, E., 1999. The Magic Cauldron.
Roberts, D., Hughes, M., Kertbo, K., 2014. Exploring consumers' motivations to engage in innovation through co-creation activities. Eur. J. Market. 48 (1/2), 147–169.
Schau, H.J., Muniz, A.M., Arnould, E.J., 2009. How brand community practices create value. J. Market. 73 (5), 30–51.
Svejenova, S., Mazza, C., Planellas, M., 2007. Cooking up change in haute cuisine: Ferran AdriÃ as an institutional entrepreneur. J. Organ. Behav. 28 (5), 539.
Umit Kucuk, S., Krishnamurthy, S., 2007. An analysis of consumer power on the Internet. Technovation 27 (1/2), 47–56.
Vargo, S.L., Lusch, R.F., 2004. Evolving to a new dominant logic for marketing. J. Market. 68 (1), 1–17.
Von Hippel, E., 1986. Lead users: a source of novel product concepts. Manage. Sci. 32 (7), 791.
Von Hippel, E., Katz, R., 2002. Shifting innovation to users via toolkits. Manage. Sci. 48 (7), 821–833.
Von Hippel, E., 2005. Democratizing Innovation. The MIT Press.
Wiertz, C., de Ruyter, K., 2007. Beyond the Call of Duty: Why Customers Contribute to Firm-hosted Commercial Online Communities. Organ. Stud. (01708406) 28 (3), 347–376.
Wu, S.-C., Fang, W., 2010. The effect of consumer-to-consumer interactions on idea generation in virtual brand community relationships. Technovation 30 (11/12), 570–581.
Yin, K.R., 2003. Case Study Research, Design and Method, third ed. Sage Publications, Ltd..

Please cite this article in press as: Parmentier, G., How to innovate with a brand community. J. Eng. Technol. Manage. (2015), http://dx.doi.org/10.1016/j.jengtecman.2015.08.001