

**OPEN SOURCE AS CHALLENGE FOR MARKETING MANAGEMENT: EXPLORING AND
UNDERSTANDING PARTICIPANTS' MOTIVATIONS AS A BASIS FOR INTERACTIVE
COMMUNICATION STRATEGIES**

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SUMMARY

The internet has intensely influenced marketing communication. Initially driven by an information and transaction related focus, the World Wide Web reveals more and more its true strength: the social networking of people. The formation of communities is booming, forums and weblogs gain considerable attention and the digital version of social networks like myspace.com or facebook.com reach as much users as former internet giants such as AOL. In the course of this development, more and more brand and product related communication takes place in areas that are hard to reach for companies; either directly between consumers themselves or intermediary between consumers and consumer generated contents. Particularly, consumer generated contents and the networks where they originate from have gained growing interest in marketing management. As an interesting form of consumer-sided social organization, open source networks (OSN) have drawn special attention from both, academics and practitioners. Originating from counterparts to proprietary software development (e.g., Windows vs. Linux), these communities exist today as collaborative networks in a variety of application areas, e.g. as organizations of creatives generating texts, videos, images or audio sources (e.g., creativecommons.org, flickr.com or jamendo.com), as educational networks (e.g., MIT OpenCourseWare) or as collaborative marketing communities (e.g., Mozilla's spreadfirefox.com, P&Gs Vocalpoint or Converse's conversegallery.com). Due to the enormous variety of open source (OS) projects and the fact that all users of an OS community take part voluntarily, generating contents "for free", OSNs are a good basis to analyze the underlying motivations that drive consumers to produce business related contents – especially as one can draw from extensive previous research on motivations for taking part in OS software projects like Linux.

As for marketing management brand and product related consumer generated contents are of main interest, our paper focuses on marketing-oriented OSNs like the community marketing the OS browser Firefox at spreadfirefox.com. In the case of our research, a professional German community provider, specialized on open source marketing (OSM) projects, was chosen as partner for this study. In order to cover most of the variety of OSM facet's the particular focus lay on three different OSM projects conducted by large and well-known B2C companies. In detail the participants were recruited from projects conducted by Germany's number one discount mobile telephone provider (Simyo), the largest German bonus program (Payback) and the leading provider of custom, online apparel in Europe (Spreadshirt).

Our results yielded a multi factor solution that confirmed 7 out of our 13 hypothesized motivational factors: Learning and Stimulation, Ego-Boosting, Peer Recognition, Community Identification, Consumer Empowerment/Joint Enemy, Altruism and Brand Enthusiasm. Furthermore, it revealed two unexpected aspects of OSN motivation: A non-reward-orientation and the need for a community match.

Keywords: Consumer Empowerment, Open Source Networks, Open Source Marketing, Open Source Motivation, Motivation Theory

INTRODUCTION

The internet has intensely influenced marketing communication. Initially driven by an information and transaction related focus, the World Wide Web reveals more and more its true strength: the social networking of people. The formation of communities is booming, forums and weblogs gain considerable attention and the digital version of social networks like myspace.com or facebook.com reach as much users as former internet giants such as AOL. In the course of this development, more and more brand and product related communication takes place in areas that are hard to reach for companies; either directly between consumers themselves or intermediary between consumers and consumer generated contents. Particularly, consumer generated contents and the networks where they originate from have gained growing interest in marketing management.

As an interesting form of consumer-sided social organization, open source networks (OSN) have drawn special attention from both, academics and practitioners. Originating from counterparts to proprietary software development (e.g., Windows vs. Linux), these communities exist today as collaborative networks in a variety of application areas, e.g. as organizations of creatives generating texts, videos, images or audio sources (e.g., creativecommons.org, flickr.com or jamendo.com), as educational networks (e.g., MIT OpenCourseWare) or as collaborative marketing communities (e.g., Mozilla's spreadfirefox.com, P&Gs Vocalpoint or Converse's conversegallery.com). Due to the enormous variety of open source (OS) projects and the fact that all users of an OS community take part voluntarily, generating contents "for free", OSNs are a good basis to analyze the underlying motivations that drive consumers to produce business related contents – especially as one can draw from extensive previous research on motivations for taking part in OS software projects like Linux.

As for marketing management brand and product related consumer generated contents are of main interest, our paper focuses on marketing-oriented OSNs like the community marketing the OS browser Firefox at spreadfirefox.com. Thus, with special reference to research on OSN community motivation, this paper aims at providing a first empirical analysis for the identification of key motivational dimensions and factors in OS oriented marketing projects to answer the following research questions: Why do consumers take part in marketing-oriented OSNs, on which OSN characteristics is individual participation based upon, and what are underlying drivers that firms can address to induce people to participate in business processes voluntarily?

This paper is structured into three main sections: First, analyzing literature on OSN and collaborative marketing, a conceptualization of open source oriented marketing (OSM) is developed. Second, based on previous research on OSN motivation, motivational determinants and their specific role in OSM participation are introduced and analyzed. Third, empirical results of an exploratory study are discussed with reference to future research steps and managerial implications to efficiently integrate consumers in development and management of marketing processes.

CONSTRUCT DEFINITION AND LITERATURE REVIEW

Open Source Networks

In the last years, OSNs have gained a lot of attention from academics and practitioners. Spontaneously founded, all of these networks recruit their members on a voluntary base, and most of all disburden themselves of strict copyright standards by establishing flexible rights for a flexible use of intellectual property (Perens 1999, Open Source Initiative 2006). Collaborative OSNs such as Linux, Apache or Typo3 have shown that a large and complex system of software code can be built, maintained, developed, and extended by a worldwide network of participants who work in a highly parallel, relatively unstructured way although most of the community members are not even employed or paid by a central institution (e.g., Lerner & Tirole 2002, Weber 2004, Watson 2005, Feller & Fitzgerald 2002, Raymond 2001). Today many OSNs exist as intraorganizational networks (MNEs) on a global level (e.g., the community of the web browser Firefox) as well as interorganizational networks between e.g. two or more OS projects (e.g., the partnership between the OS Marketing community spreadfirefox.com and the developer community of the web browser Firefox at mozilla.org). OSNs have become so promising that many companies, e.g. IBM or Red Hat, even base their business models on OS projects like the Linux kernel (Watson 2005). It was therefore only a matter of time that resourceful companies and large OS communities tried to use the OS ideas to collaboratively market their products and/or services.

Open Source Oriented Marketing – A Case Study

A well-known company which has shifted their marketing efforts to an OSN is the Mozilla Foundation. The non-profit company organizes, coordinates and manages the development of the Web browser Firefox. With a market share of over 20 per cent, Firefox can be considered as the first serious challenge for Microsoft's Internet Explorer for years – not last thanks to their open source orientated marketing (Christ, 2004).

Central to Mozilla's innovative concept is the website "spreadfirefox.com". It can be seen as the internet headquarters of many worldwide marketing activities aimed at raising the browser's using rates (Lieb, 2004).

To jointly plan and coordinate the marketing for Firefox, Mozilla strictly follows the success rules of the OS movement (Weber, 2004). The non-profit company set up a community, founded the bases for a constructive idea exchange among the members and integrated mechanisms for motivation and the choice of possible marketing activities. The next step was to form teams of volunteers whose task was to judge ideas, work out details and coordinate the realization within the community (Mucha, 2004). Most part of Mozilla's strategic marketing planning and operational activities (e.g., artwork) are made-up in the OSN and assigned to associated community members as work packages.

What at first sight appears to be a little bureaucratically, at a closer look proves to be a live evolution process. Until January 2007, the project has already formed 15 different working groups with specific marketing foci. Each team organizes extensive marketing activities, for example regarding the browser's distribution via CD-ROM/DVD media in computer magazines, promotion on fairs etc. They also design strategies and tactics which every webmaster can use to increase the publicity and distribution of Firefox, for example using banners, badges, e-mail's signatures etc.

Thanks to their enormous passion, the community's participants even financed a costly double-page advertisement in the New York Times in 2004 („Firefox Advocacy Ad Campaign“) to promote the official introduction of the Firefox 1 browser (Kucuk/Krishnamurthy, 2006). The results of this collaborative marketing concept are considerable: Until September 2007, the server of Mozilla has achieved more than 400 Mio downloads (Source: Firefox.com). In the meantime, a whole number of examples, among others DaimlerChrysler, Converse or General Motors, show the potential of OS concepts in the area of marketing (Cherkov, 2005).

Considering these developments from a marketing point of view, it has to be asked, what motivates people to take part in collaborative marketing projects and whether the OS movement facilitates alternative ways for companies to authentically address their customers by actively integrating them in communication and marketing processes.

Conceptualizing Open Source Oriented Marketing

It be at the search of products or at the choice of a new merchant – in view of consumption decisions, the customers' exchange has gained special importance (e.g. by the

use of internet forums or weblogs). The influence of companies has faded increasingly. One can even say that nowadays, a considerable part of typical marketing activities occurs without the influence of the marketing departments (Moore, 2003). Using the digital medium internet as 'enabler', today's consumers' generation practices more and more its own manner of marketing and product discussion. According to an "open sourcing yourself" (Cherkov, 2005), an increasingly number of users offers home generated contents at community portals such as youtube.com or flickr.com – from brand enthusiastic self-made commercials to parodies of well-known commercials that misuse the company's brand messages (Kahney, 2004).

Positive consumers' resonance to this 'user generated content' can be derived from their high click rates (Blackshaw, 2005). Highly 'interlinked', these homemade 'clips' and advertisements are often distributed exponentially and gain the attention of the media (Cherkov, 2005). Furthermore, compared with perfected company campaigns, many consumers even prefer the semi professional marketing ideas, because they seem more genuine, more credible and no economic motive behind them is suspected (Blackshaw, 2005).

The concept of OSM now combines these developments with the ideas, ideals and success factors of the OS movement in order to achieve the classic aims of marketing management through collaborative processes. By actively integrating the consumers via an OSN into the planning and implementation processes of marketing, the ongoing trend to consumer empowerment shall be incorporated, reactance toward marketing and advertising shall be reduced and, according to a mutual win-win situation, the creative human resources of the consumers shall be used more efficiently (Cherkoff 2005, Christ 2004).

OSM encompasses a normative, a strategic, and an operative level. The normative level is of special importance as open source marketing constitutes a fundamental change of attitude regarding marketing in general: fewer restrictions in form of copyrights in favor of free idea exchange and lower planning safety in favor of an improved customer orientation (Brøndmo 2004). In terms of its strategic component, OSM refers to the cooperative and collaborative planning and specification of marketing aims, strategies, and activities in an OSN. Referring to its operative level, OSM addresses the collaborative organized, creative arranging and realization of marketing activities by flexible use of copyright standards (cf. CreativeCommons.org 2006).

In general, OSM includes for example:

- Access to marketing materials, which are no longer restrictively protected on copyright, but available to consumers under a flexible user's license.

- Permission and support of derivatives or further developments of advertisements, texts, logos etc.
- Free access to commercials or banners as well as storyboards, basic animations, text or sound files on the company's website.
- Possibility to discuss and criticize all relevant elements of corporate marketing management in forums, chats and blogs.

Consequently, OSM means primarily deallocation of marketing functions. The target group is not only allowed, but induced to improve the corporate marketing concept with additions, further developments, parodies or criticism.

Although there have been made a lot of empirical efforts on elaborating OS software programmers' motivation (e.g., Lakhani & Wolf 2005, Hertel et al. 2003 or Lerner & Tirole 2002), there is still a lack of a more broadened view on OSN motivation in general and OSM participation motives in particular. Thus, projects like the OSN organized at spreadfirefox.com show that people have the willingness to engage in OSM, but the reasons for them to take part can only be assumed so far.

CONCEPTUAL MODEL

OSM Motivational Dimensions

Ample of research has been made to elaborate and identify consumer motivational drivers. Theories differ on the particular needs that a person is attempting to fulfill and from where the energy is derived from, but almost all have in common that motivation requires a desire to act and having a mutual objective (Ramlall 2004). In this motivational theory effort, we therefore focus on the two well established approaches of (1) *need-based* and (2) *expectancy-based motivation* to explain individual participation in OSN.

(1) *Need-based motivation* - Need theories attempt to identify internal factors that energize behavior. Needs as defined previously are physiological or psychological deficiencies that arouse behavior. These needs can be strong or weak and are influenced by environmental factors (Blackwell et al. 2001, Solomon et al. 2002).

(2) *Expectancy-based motivation* - "Expectancy theory holds that people are motivated to behave in ways that produce desired combinations of expected outcomes" (Kreitner & Kinicki 1999). An individual will therefore act in a certain way based on the expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual (Vroom 1964).

Thus, participating in an OSN requires one or more unfulfilled needs as well as the individual expectancy that the need-based deficiencies could be removed by the specific OSN. Together, these two theories (need and expectancy) are assumed to explain an individual's willingness to actively participate in an OSN.

Against this background, Figure 1 shows our proposed conceptual model to investigate specific OSM motivations and motivational drivers.

-----*Insert Figure 1 about here*-----

To analyze OSM motivation, our conceptual model integrates the three dimensions of a pragmatic, a social and a hedonistic motivation (Wiedmann & Langner 2006).

Pragmatic motivation: A pragmatic motivation integrates all need and expectancy based motivations that are related to a direct benefit for the consumers' participation in an OSN like e.g. receiving appealing compensations (rewards), enhancing one's individual job perspectives (signaling), meeting respectable personalities (get-in-touch) or receiving help in other projects (reciprocity).

Social motivation: The social dimension integrates all motivational factors that are related to interpersonal relationships in the community like identification processes, peer recognition, altruism or a joint enemy (e.g. a competing brand or a dominating company like Microsoft in the software market).

Hedonistic motivation: The hedonistic motivation finally includes specific and non-specific emotional drivers for participating in an OSN like emotional appeal and brand enthusiasm (is there an emotional brand/consumer fit and has the brand the power to activate?) and fun and flow experiences during the community work.

Based upon previous research on OS motivation, Table 1 shows a hypothetical taxonomy of consumers' motivation in OSM.

-----*Insert Table 1 about here*-----

METHODOLOGY

Sample

A professional German community provider named TRND, specialized on OSM projects, was chosen as partner for this study. In order to cover most of the variety of OSM facets the particular focus lay on three different OSM projects conducted by large and well-

known B2C companies. In detail the participants were recruited from projects conducted by Germany's number one discount mobile telephone provider (Simyo), the largest German bonus program (Payback) and the leading provider of custom, online apparel in Europe (Spreadshirt). In contrast to spreadfirefox.com, all analyzed OSM projects covered only particular marketing aspects – in detail: internet marketing (Spreadshirt), product marketing (Simyo) and marketing communication (Payback). Table 2 provides a description of the sample characteristics.

-----*Insert Table 2 about here*-----

Respondents mainly aged 20-39, those with higher education and those without executive functions were over-represented, which is indicative of the fact that many business students and lower employees participated as they are particularly interested in marketing. The higher percentage of younger and male consumers in the sample may be also attributed to the greater internet usage of younger people and males.

Instrument

All measures used in the study were adapted from existing scales and previous research on OSN motivation. The wording of scales was adapted to suit OSM projects. Items were rated on five-point Likert scales because they are more commonly used in Germany than the seven-point scales. Capturing other areas of interest, such as motives e.g. affiliated to brand enthusiasm, required the formulation of additional scale items, which were derived from exploratory interviews conducted with OSM participants and experts. Finally the questionnaire was face validated twice using exploratory interviews and pre-tested offline and online. The online questionnaire was accessible for participants of the three different OSM projects through a link on the homepage of the participating community as well as through individualized e-mails. Participants had to authenticate themselves by login and password assuring that only active OSM community members took part. Of 483 invited community members 246 people answered the questionnaire – a remarkable 51 per cent response rate.

Analysis and Reliability

The data was (exploratory) factor analyzed to produce a factor solution that accounted for 58 per cent of the variance with 52 of 79 items loading onto 9 factors with a Keyser-Meyer-Olkin measure of 0.89. All items had medium (>0.45) up to high factor loadings (>0.8) and the factors' Cronbach's alpha were 0.84 on average, indicating that the chosen scales and

items were reliable and generalizable to OSM participants. All factors with low Cronbach's alphas (<0.6) were excluded from further analysis's.

RESULTS

OSM Motivational Factors

Our results yielded a multi factor solution that confirmed 7 out of our 13 hypothesised motivational dimensions. Furthermore it revealed two unexpected aspects of OSM motivation: A non-reward-orientation and the need for a community match. Table 3 shows our proposed 9 factor solution.

-----Insert Table 3 about here-----

In the following all factors are introduced, analyzed and discussed in detail.

Pragmatic Motivation Dimensions

Factor 1_P Learning and Stimulation: The only dimension that could be confirmed in case of a pragmatic motivation is *Learning and Stimulation* in task accomplishment. Even though an OSN dedicated to the development of e.g. an operating system for a computer may not be considered extremely creative or stimulating by outside observers, it may be rated as a highly creative and challenging problem-solving process and good learning opportunity by some individuals engaged in the project (Lakhani & von Hippel 2003, Lakhani et al. 2002, Lerner & Triole 2002). The same seems to hold for marketing related processes like e.g. developing an ad campaign or creating artwork during an OSM project. Consequently, the possibility to learn and to improve one's skills in challenging OSM projects affects an individual's willingness to participate.

Factor 2_P (Non-)Reward-Oriented: The second pragmatic factor includes a *Non-Reward-Oriented*. Actually a reward-oriented motivation originates from expected costs and benefits such as investment of time and money, making new friends, or risking one's health. The higher and the more likely the expected gains are perceived, the higher is the motivation to participate in a network like an OSN (Simon et al. 1998). The opposite holds for expected losses - so much for theory. OSM motivation seems to be a little different. Not only could any reward-oriented motivation be reproduced, but also the opposite seems to hold for OSM (at least in the analyzed projects): Non-monetary compensations seem to motivate the OSM community a lot more than direct compensations for invested working hours.

Social Motivation Dimensions

Factor 3_S and 4_S Peer Recognition and Ego Boosting: *Peer Recognition and individual Ego-Boosting* are main motivating forces in OSNs. The challenge of e.g. programming in the OS environment is a source of satisfaction. This is a consistent finding across most surveys (Lakhani & Wolf 2005, Hertel et al. 2003, Lerner & Tirole 2002, Weber 2004, Bonaccorsi & Rossi 2003). Therefore, ego as a main motivator is not only tolerated but openly accepted in many online communities. The same seems to hold for OSM projects. Consequently, the possibility to demonstrate one's skills to others (peers) as a source of satisfaction affects an individual's willingness to participate in an OSM project.

In addition, participants improve their skills through the active peer review that is prevalent in OSNs (Weber 2004, Moody 2001, Raymond 2001, Wayner 2000). In general, contributions to the community (like software code in an OS software project) have to pass an intense peer review before and after submissions become part of the solution (e.g. the official software). Credit files and public e-mail archives ensure that e.g. bad working styles or the disrespect to conventions and logic are communicated back to the original author, same holds for excellent work. Peers in every OSN, members, and interested outsiders, who discover mistakes, often suggest specific changes to improve the outcome of the project (von Krogh et al. 2003, Dalle & David 2003). This interactive process improves both, the quality of the work and the overall skills of the individual participants. Similar processes seem to be a motivating force in OSM projects, too. Consequently, the possibility to work and to improve one's skills under a comprehensive peer review influences an individual's willingness to participate in an OSM project.

Factor 5_S and 6_S community identification and community match: The closer an individual identifies with an OSN or an active subgroup, the higher is the likelihood for taking part personally – a strong element of a shared *identity and belief system* within the community (Weber 2004, Lakhani & Wolf 2005, Raymond 2001, Levy 1994). For instance, OS software programmers, who do not just appreciate, but actually live the idea of “free” software, only participate in an OS software project, when they find like-minded people. Individuals, who feel and define themselves as members of an OSN and behave according to the norms and standards of this group, do not simply weigh costs and benefits when they decide whether they want to be involved in a group, they also look for an identity fit with the OSN. Similar processes can now be assumed for OSM projects, too.

Factor 7_s Consumer Empowerment/Joint Enemy: To many network members, community participation and identification is part of an ongoing battle with a *joint enemy* (Weber 2004, Lerner & Tirole 2002). In OS software networks, e.g. Microsoft is such an often scold villain. However, this single company only acts as a proxy for many companies developing proprietary products or services. The underlying motivation here is simple to understand: it combines concerns about business practices, (technical) aesthetics, freedom, and independence. As our research shows, OSM participants have a similar opinion. They think “Marketing is much better if the consumers are involved actively in the development”. Consequently, the existence of and the possibility to ally oneself against a “joint enemy” or for a common goal (like participation or integration in marketing processes) affects an individual’s willingness to participate in an OSM project.

Factor 8_s Altruism: It is a practical benefit to get something to work/develop a special solution or idea for your own use (Weber 2004, Bergquist & Ljungberg 2001, Raymond 2001). Sharing this solution or idea with other people in the world via internet can even bring additional satisfaction as e.g. a specific software code or a new marketing technique can help hundreds of other OSN members get their companies running - particularly if the cost of sharing is near zero. Consequently, the possibility of working in a beloved domain and therewith altruistically helping others to find a solution for a given problem affects an individual’s willingness to participate in an OSM project.

Hedonistic Motivation Dimensions

Factor 9_s Brand Enthusiasm: For OSN members it is not only relevant what they do but rather for whom they do it. In this domain falls the strong motivational effect of brand enthusiasm. Some brands (like Firefox or Apple) have the emotional power to activate their customers in a way that they voluntarily engage in business related communities like internet forums, Chats (e.g. IRCs) or even brand-focused fan clubs (Roberts 2005, McConnell & Huba 2002). The same seems to hold for OSM projects (at least for the analyzed ones). Consequently, brand enthusiasm as a strong emotional motive force affects an individual’s willingness to participate in an OSM project.

OSM Motivational Factors and Weekly Project Working Time

After having identified the general OSM factor structure, the next step was to explore possible differences between respondents low and high in their OSM motivation. In this context, it has to be stated that all respondents were active members of the OSM community. Therefore, they may altogether share the same beliefs about participating in an OS project as

non-members given that they were actually engaged in this context. Nevertheless, the answer to the question what may distinguish high motivated contributors from low motivated ones could be a general basis for efficient communication strategies.

For that reason, we examined the general OSM factor structure in relation to the participants' actual weekly project working time (WT). The question was: Comparing participants with a (1) low, (2) medium, and (3) high weekly project working time, are there any differences in terms of the relatively importance of the identified OSM factors? An ANOVA was examined for each of the three WT-groups (WT1: ≤ 1 hour, $n = 92$; WT2: >1 hour and ≤ 3 hours, $n = 80$; WT3: > 3 hours, $n = 74$) for the dependent measures related to the OSM Motivational Factors. The results are presented in Table 4 and Figure 2.

-----Insert Table 4 and Figure 2 about here-----

Comparing the OSM motivational factor mean scores across the three WT-groups, the results demonstrated differences with WT3 showing the highest mean scores regarding all factors. It appears that respondents with a high weekly project working time attach greater importance to all motivational aspects of OSM participation. The most important factors for this group were '*Community Match*' and '*Ego Boosting*', the factor '*Altruism*' showed the lowest mean score for this group. Respondents with a medium weekly project working time (WT2) attach special importance to '*Learning and Stimulation*' and '*Brand Enthusiasm*' whereas the factors '*Consumer Empowerment/Joint Enemy*' and '*Altruism*' showed the lowest mean score of all groups. In contrast to this, respondents with a low weekly project working time (WT1) assign special importance to both '*Consumer Empowerment/Joint Enemy*' and '*Altruism*'. This group showed the lowest mean scores for '*Learning and Stimulation*', '*Community Match*', '*Brand Enthusiasm*', and '*Ego Boosting*'.

Comparing the three groups, the factors '*Learning and Stimulation*', '*Ego Boosting*', '*Community Match*', and '*Brand Enthusiasm*' showed the highest differences and the F test could reveal significant results at the 5% level. To investigate this significance, a Bonferroni multiple comparison procedure was utilized at an experiment-wise error rate of 0.05 to determine which pairwise contrasts were significant. Findings revealed significant differences between WT1-2 and WT1-3 relating to the factors '*Learning and Stimulation*', '*Ego Boosting*', '*Community Match*', '*Brand Enthusiasm*', and '*Consumer Empowerment/Joint Enemy*'; between WT1-3 relating to the factors '*(Non-)Reward-Oriented*', '*Peer Recognition*', and '*Community Identification*'; and no significant differences between the groups relating to the factor '*Altruism*'.

Overall, the results showed the strongest differences with reference to the evaluation of the factors ‘*Learning and Stimulation*’, ‘*Community Match*’ and ‘*Brand Enthusiasm*’. These differences might be attributed to the fact that participants with a high weekly project working time tend to take their participation in the network very seriously, as they see the OSN as an opportunity to learn (Learning & Stimulation) and meet likeminded people (Community Match). Participants with a medium weekly project working might want to be part of their favorite brand (Brand enthusiasm) but weigh their need to do this not as high as the previous group; and participants with a low weekly project working time are mainly motivated by the ‘opportunity’ to help altruistically, which therefore seems to be the weakest driver for participation.

DISCUSSION

Our research was motivated by the need for more clarity of conceptualization and measurement of consumers’ motivation for participating in business processes voluntarily. In this context our results of analyzing OSM projects reveal an interesting view on motivation. As almost none pragmatic and hedonistic motives could be confirmed, consumers’ motivation appears to be determined mainly by brand enthusiasm, learning & stimulation as well as community aspects. This fact makes OSM projects a very interesting research object for both practitioners and marketing researchers. Not depending on external rewards, an “intrinsic” motivation seems to be mainly responsible for a participation decision. Keeping this aspect at the back of one’s mind, OSM projects could be a very promising supplement to customer clubs and other means of exchange with the customers. However, the importance of brand enthusiasm and its dependencies needs to be analyzed in more detail, as new brands or companies perhaps do not own as much awareness as needed to attract enough interesting community members.

Still, the missing of almost all direct benefit-oriented rewards as motivational drivers combined with brand enthusiasm is surprising. Expressed with some exaggeration, there is a theoretical possibility that OSM projects attract mainly brand enthused marketing rookies with the need for social exchange. In this case, the practical use of an OSM community for marketing management could be very limited, as special marketing aspects like submarket related strategies could not be discussed or developed properly because of the missing knowledge and experience of project members. Depending on the community composition, some OSM projects would be even degraded to some kind of marketing research panel. With a view to social demographics, the composition of community members show indeed a large

number of suspected marketing novices (74 per cent are either students, work in low positions, or are unemployed at the moment). But there is also a small fraction of executives (15 per cent are team leaders, department managers, or higher) whose participations do not really fit to the assumption of OSM communities as sole “marketing workshops” for beginners. The aspect of OSM community composition therefore has to be examined more into depth, as practical examples like spreadfirefox.com prove that a resourceful community composition is possible.

MANAGERIAL IMPLICATIONS AND FUTURE RESEARCH STEPS

Managerial Implications

There are wide-ranging managerial implications of our research. A central assertion is that consumers’ motivation for creating brand and product related contents is not limited to a single motivational driver like reward-oriented benefits but a complex composition of clearly distinguishable factors. Engaging customers to become part of marketing communication, therefore demands a certain variety of different stimuli and a sense for using them in the right mixture and intensity. As many of the factors motivating OSM participants are similar to OSN motivational drivers in general and OS software developer’s motivation in particular, marketing oriented OSNs will be able to adopt many of the success factors from other OS projects (like efficient community exchange processes, rules for behavior or usability aspects) enabling social motives like community identification, peer recognition or ego boosting.

Similar to OS software development, OSM projects as well seem to have an idealistic component. The consumer empowerment factor shows that not only challenging tasks and a functioning community are needed to motivate OSM participants but also a fundamental attitude towards consumer integration in marketing processes must be communicated throughout the project. In other words: OSM members need to feel that their participation codetermines the OSM outcomes and that their ideas are taken seriously.

In view of the impact of a hedonistic motivation (brand enthusiasm) on the willingness to take part in an OSM project, managers might discover the power and relevancy of a relationship based collaborative marketing community not only for supporting traditional marketing campaigns but also in view of the possibilities to identify and target new employees with high capabilities and an intrinsic motivation for marketing.

Future Research Steps

Focusing on marketing-related OS projects, this paper has examined motivational sources and individual motives for consumers taking part in brand and product related business processes/communities in general and OSM projects in particular. Of course, our results are only a first step and should be further developed in different ways. First, in the next step of developing hypotheses, we should as well emphasize the interplay between the different variables. This will have to lead to a proper causal modeling of effects between the dimensions of motivation and OSM participation. In this context we will also have to add the conceptualization of different forms of OSM projects, consumer characteristics (typologies) and their explanation in view of their impacts on motivations. In order to make well-founded statements regarding OSM projects' purposes and their optimal community composition, it also has to be analyzed how community composition affects OSM project results.

As important the generation of such an extended model might be, we believe that first of all, we should try to empirically find out the relevancy of different variables measuring motive intensity and rank to portray need and goal-oriented motivation in a more aggregated sense. Against this background we might concentrate a more advanced causal modeling on important variables. Such a procedure seems to be important insofar as the amount of variables and relationships between them is so high that one would run the risk "getting lost in complexity".

Preparing the empirical test of our model the dimensions of the variables need to be operationalized in more detail. In some cases we already can fall back on our existing and somewhat tested measures, in other cases we will have to start from scratch. Especially in view of the different dimensions of OSM projects characteristics, it might be worth starting with exploratory interviews with well-experienced OS community network members, which are likely to yield further items. Further steps of the empirical work have, of course, to meet the state of the art of the use of sophisticated multivariate methods. For example, it might be useful to compare different approaches of formative and reflexive construct development and testing (Diamantopoulos & Winklhofer 2001, Jarvis et al. 2003), and, due to the fact that we cannot assume linear relationships between the different variables, we should also draw on nonlinear causal modeling (cf. also using neural networks).

Despite the limitations and necessary steps in future research, the primary contribution of our paper was a first analysis and taxonomy of motivation leading towards the explanation and genesis of consumer generated content in general and participation in OSM projects in

particular. Combined with our results regarding the intensity of different motivational drivers analyzing working time differences, we have also shown that consumers' motivation for participating in marketing related communication and development processes voluntarily is very complex and depending on a variety of important determinants. OSM therefore is and will be an interesting field of research in the future.

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FIGURES AND TABLES

FIGURE 1: The Conceptual Model of Consumers' Motivation in OSM

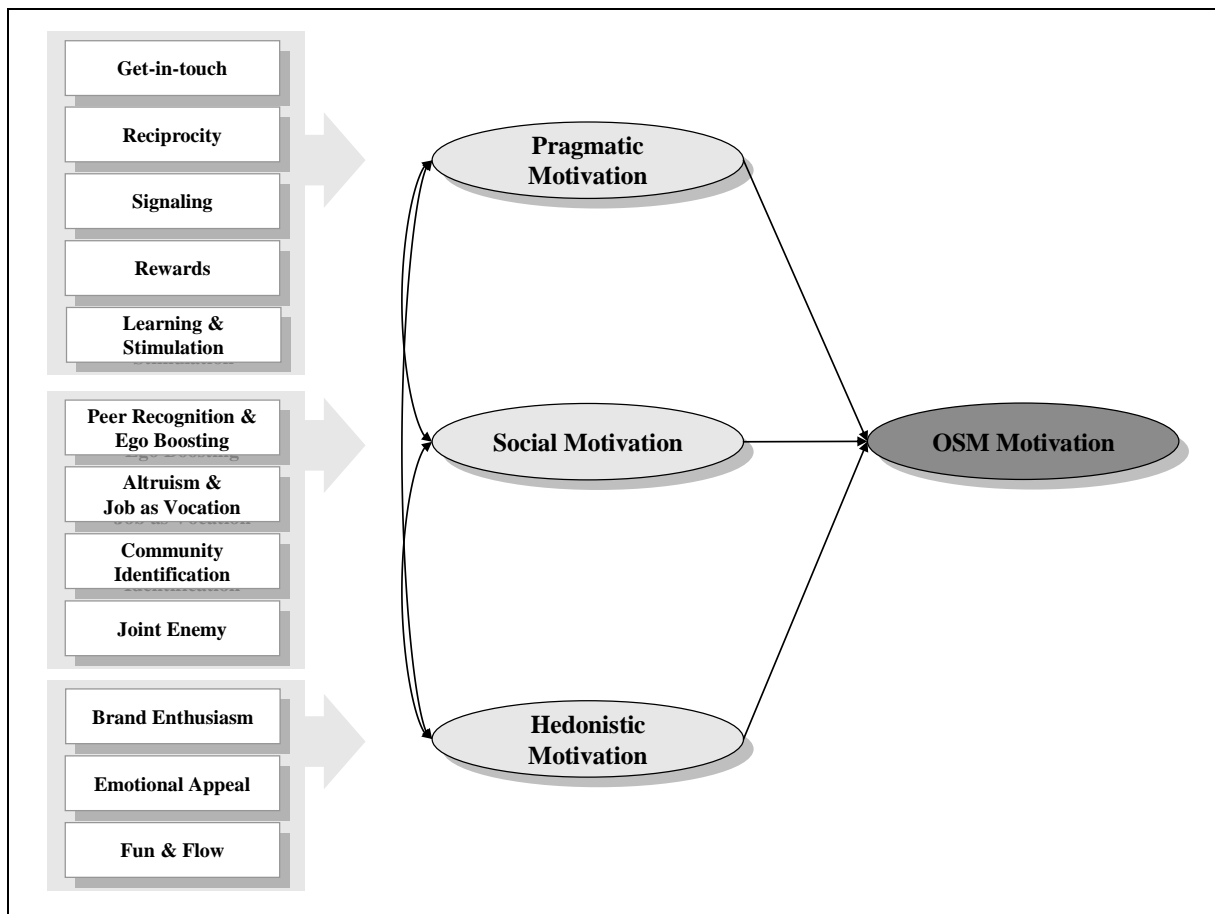


TABLE 1: Open Source Marketing Motivational Dimensions and Determinants

Dimension	Determinant and Description	Author(s)	Proposition
Pragmatic Motivation Dimensions	Get-in-touch: Getting in touch with leading executives and famous specialists in an OSM project is a main driver for OSN motivation.	Weber 2004, Cherkoff 2005, Raymond 2001	P ₁ : <i>The chance of cooperating with a leading company executive or a famous expert in a collaborative project may affect an individual's motivation to participate in an OSM project.</i>
	Signaling: Many community members regard their participation in an OS project as a demonstrative act to show the quality of their work.	Lakhani & Wolf 2005, Lerner & Tirole 2002, Lerner & Tirole 2001, Klandermans 1997	P ₂ : <i>The possibility to signal one's skills to relevant others may affect an individual's motivation to take part in an OSM project.</i>
	Rewards: A rational consideration of reward-oriented costs and benefits drive the motivation to participate in a network like an OSN.	Simon et al. 1998, Lerner & Tirole 2002, Lakhani & Wolf 2005, Hars & Ou 2002, Hertel et al. 2003	P ₃ : <i>The character and expected value of reward-oriented benefits in terms of immediate and/or delayed benefits may affect an individual's willingness to participate in an OSN.</i>
	Reciprocity: OSN members often hope to get help and support in the future given that their previous contributions to the community or specific members of it have created a tacit reciprocity agreement.	Bonaccorsi & Rossi 2003	P ₄ : <i>The incentive to create solutions to their particular needs and/or the possibility to create a tacit reciprocity agreement by helping the community may affect an individual's willingness to participate in an OSM project.</i>
	Learning and stimulation: Even though an OSN may not be considered extremely creative or stimulating by outside observers, it may be rated as a highly creative and challenging problem-solving process and good learning opportunity by some individuals engaged in the project.	Lakhani & von Hippel 2003, Lakhani et al. 2002, Lerner & Triole 2002	P ₅ : <i>The possibility to learn and to improve one's skills in challenging projects may affect an individual's willingness to participate in an OSM project.</i>
Social Motivation Dimensions	Ego boosting: Since participation in an OS project may represent a source of satisfaction, ego as a main motivator is not only tolerated but openly accepted in many online communities.	Lakhani & Wolf 2005, Hertel et al. 2003, Lerner & Tirole 2002, Weber 2004, Bonaccorsi & Rossi 2003	P ₆ : <i>The possibility to demonstrate one's skills to others (peers) as a source of satisfaction may affect an individual's willingness to participate in an OSM project.</i>
	Peer recognition: Participants may improve their individual skills through the active peer review that is prevalent in OSNs. This interactive process improves both, the quality of the work and the overall skills of the individual participants.	Weber 2004, Moody 2001, Raymond 1999, Wayner 2000, von Krogh et al. 2003, Dalle & David 2003	P ₇ : <i>The possibility to work and to improve one's skills under a comprehensive peer review may affect an individual's willingness to participate in an OSM project.</i>
	Altruism and job as vocation: Sharing a special solution or idea with other people in the world via internet can bring additional satisfaction as it can help hundreds of other OSN members to get their companies running - particularly if the cost of sharing is near zero.	Weber 2004, Bergquist & Ljungberg 2001, Raymond 2001	P ₈ : <i>The possibility of working in a beloved domain and therewith altruistically helping others finding a solution for a given problem will affect an individual's willingness to participate in an OSM project.</i>
	Community identification: Individuals, who feel and define themselves as members of an OSN and behave according to the norms and standards of this group, do not simply weigh costs and benefits when they decide whether they want to be involved in a group, they also look for an identity fit with the OSN.	Weber 2004, Lakhani & Wolf 2005, Raymond 2001, Levy 1994, Simon et al. 1998, Klandermans 1997	P ₉ : <i>A shared identity and belief system within the OSM community or an active sub group is a key predictor for an individual's community participation and identification and may affect an individual's willingness to participate.</i>
	Consumer empowerment/joint enemy: Community participation and identification may be part of an ongoing battle with a joint enemy concerning business practices, (technical) aesthetics, freedom, and independence.	Weber 2004, Lerner & Tirole 2002	P ₁₀ : <i>The existence of and possibility to ally oneself against a joint enemy may affect an individual's willingness to participate in an OSM project.</i>
Hedonistic Motivation Dimensions	Brand enthusiasm: Some brands (like Firefox or Apple) have the emotional power to activate their customers in a way that they voluntarily engage in business related communities like internet forums, chats or even brand-focused fan clubs.	Roberts 2005, McConnell & Huba 2002	P ₁₁ : <i>Brand enthusiasm as a strong emotional motive force may affect an individual's willingness to participate in an OSM project.</i>
	Emotional appeal: Engaging in an OS project may serve as an act of aesthetical self-expression; quality and beauty - both matter as there are always several ways to solve an (engineering) problem.	Lakhani & Wolf 2005, Lerner & Tirole 2002, Weber 2004, McVoy 1993, Hertel et al. 2003	P ₁₂ : <i>The possibility of and motivational need for aesthetical self-expression may affect an individual's willingness to participate in an OSM project.</i>
	Fun and flow: OSN participants may be seeking flow states, in which enjoyment is maximized, by selecting OS projects that match their skill levels with the given task difficulty, a choice/challenge that may not be available in their regular jobs.	Csikszentmihalyi 1975, Nakamura & Csikszentmihalyi 2003, Voiskounsky & Smyskiva 2003, Lakhani & Wolf 2005, Weber 2004, Diamond & Torvalds 2002, Himanen 2001, Torvalds & Diamond 2001	P ₁₃ : <i>The enjoyment of a challenging activity and the possibility to reach a state of flow while working in and/or for the community may affect an individual's willingness to participate in an OSM project.</i>

TABLE 2: Demographic Profile of the Sample

Variable		n	in %
Age	≤ 19	44	17.89
	20-29	129	52.44
	30-39	56	22.76
	40-49	15	6.10
	50+	2	0.81
Gender	Male	149	60.57
	Female	97	39.43
Education	Not graduated from school	12	4.88
	Lower secondary school (Volks- und Hauptschule)	9	3.66
	Intermediate secondary school (Realschule)	45	18.29
	A-levels (Abitur/Fachabitur)	121	49.19
	University degree	53	21.54
	No answer	6	2.44
Industry	Industry sector	19	7.72
	Banking sector	8	3.25
	Services sector	93	37.80
	Retail sector	15	6.10
	Not (yet) employed at the moment	58	23.58
	No answer	53	21.54
Position	Employed without executive function	69	28.16
	Team leader	18	7.35
	Head of department/Head of Division	17	6.94
	Chief Executive Officer/Director	2	0.82
	Self-employed/freelance	24	9.80
	Not (yet) employed at the moment	113	46.12
	No answer	2	0.82
Profession	Employee	90	36.59
	Laborer	6	2.44
	Executive (governmental)	7	2.85
	Self-employed/freelance	27	10.98
	Student/Apprentice	77	32.11
	Unemployed	90	36.59
	Other (Retired, Homemaker, etc.)	37	15.04
Weekly Project Working Time	≤ 1 hour	77	33.19
	>1 hour and ≤ 5 hours	119	51.29
	> 5 hours and ≤ 10 hours	29	12.50
	> 10 hours and ≤ 20 hours	6	2.59
	> 20 hours	1	0.43

TABLE 3: OSM Motivational Factors

Items	Factor Loadings
Pragmatic Motivation Dimension	
Factor 1: Learning and Stimulation	
	$\alpha = .892$
The OSM project is an excellent possibility to develop new abilities.	.813
By participating in the OSM project, I am demanded optimally in my abilities.	.738
My participation in the OSM project gives me the possibility to learn what, in future, can be useful for me.	.699
The OSM project gives me many new suggestions for my own projects.	.690
In the OSM project I let my imaginations run wild.	.678
Compared to my usual job, the participation in the OSM project is far more creative.	.599
My position in the OSM project gives me the possibility to take on responsibility and to make decisions.	.585
I take part in the OSM project because I can improve the prospects on a better position (e.g., new job, promotion etc.) fundamentally by "self-marketing".	.492
Factor 2: (Non-)Reward-Orientatation	
	$\alpha = .697$
I only take part in the OSM project because of the benefits.	-.793
I only take part in the OSM project, because I receive a corresponding compensation for it.	-.766
I help willingly at the OSM project, no matter what I get for it.	.469
Social Motivation Dimension	
Factor 3: Ego Boosting	
	$\alpha = .862$
My reputation increases when I commit myself continuously to the OSM community.	.676
I pay attention that my contributions to the OSM community are noticed by other members.	.590
It is very important to me to attain recognition within the OSM community.	.515
Sharing my knowledge and abilities with others is very satisfying to me.	.502
I can achieve fulfillment through my work in the OSM community.	.499
One immediately recognizes that I am responsible for a certain contribution to the OSM community.	.471
It is very important to me to be able to bring in my personal opinion in the OSM community.	.456
I can realize my ideas in the OSM community.	.456
At the OSM project the "sporting" discussion about the most creative ideas is the predominant aspect.	.441
Factor 4: Peer Recognition	
	$\alpha = .833$
I am very proud when my ideas and suggestions are accepted by the community.	.688
I am very proud when my ideas are used by well-known companies.	.629
I enjoy introducing new people into the OSM community.	.506
I enjoy bringing people together.	.480
I get at least so much back from the OSM community as I have given.	.454
Factor 5: Consumer Empowerment/Joint Enemy	
	$\alpha = .827$
Marketing is much better if the consumers are involved actively at the development.	.801
In the ideal case marketing measures should be designed by the consumers.	.796
Marketing is by far more effective if it gets con-arranged by the consumers.	.675
Consumers have the right to be allowed to take part in the marketing of large companies.	.621
Factor 6: Community Identification	
	$\alpha = .832$
Referring to the OSM project, the participation in a new form of cooperation appeals me to in particularly.	.696
I joined the OSM project because I want to be part of the exceptional community.	.639
The OSM community is a suitable platform for people who seek fun.	.562
The participation in the OSM community is decisive for the equal rights between consumer and company.	.559
I can identify totally with the OSM community.	.550
Very innovative ideas are developed in the OSM community.	.406
Factor 7: Community Match	
	$\alpha = .852$
The OSM community is the best place for people with the same interests.	.784
Nowhere else one can meet so many like-minded as in the OSM community.	.782
People from the OSM community are like a big family to me.	.626
With the help of the OSM community I can find cooperation partners for other projects too.	.574
By participating the OSM community I get the possibility to do what I am very good in.	.401
Factor 8: Altruism	
	$\alpha = .819$
For me it is the most beautiful feeling to have done something which gives other people a joy.	.731
I enjoy helping others.	.730
Hedonistic Motivation Dimension	
Factor 9: Brand Enthusiasm	
	$\alpha = .917$
The OSM project's brand is the perfect brand for people like me.	.865
The probability that I will use the services of/buy the OSM project's brand again is very high.	.826
The probability that I will recommend the OSM project's brand is very high.	.772
I can identify totally with the OSM project's brand.	.770
I can recommend the OSM project's brand to a friend or acquaintances without hesitating.	.751
I am proud to be consumer of the OSM project's brand.	.748
I always trust the OSM project's brand.	.479

TABLE 4: OSM Motivational Factor Loadings and Means

	Factor Loadings	Means WT 1	Means WT 2	Means WT 3	F-value	Sig	Post hoc (.05)
Pragmatic Motivation Dimension							
Factor 1: Learning and Stimulation	$\alpha = .892$	-.382	.208	.249	11.681	.000	All but 2-3
Factor 2: (Non-)Reward-Oriented	$\alpha = .697$	-.241	-.006	.305	6.387	.002	1-3
Social Motivation Dimension							
Factor 3: Ego Boosting	$\alpha = .862$	-.338	.078	.336	1.421	.000	All but 2-3
Factor 4: Peer Recognition	$\alpha = .833$	-.240	.077	.214	4.717	.010	1-3
Factor 5: Consumer Empowerment/Joint Enemy	$\alpha = .827$	-.106	-.152	.297	4.862	.009	All but 1-2
Factor 6: Community Identification	$\alpha = .832$	-.255	.053	.260	5.831	.003	1-3
Factor 7: Community Match	$\alpha = .852$	-.360	.084	.357	11.944	.000	All but 2-3
Factor 8: Altruism	$\alpha = .819$	-.005	-.122	.138	1.308	.272	-
Hedonistic Motivation Dimension							
Factor 9: Brand Enthusiasm	$\alpha = .917$	-.344	.152	.263	9.546	.000	All but 2-3
		<i>n = 92</i>	<i>n = 80</i>	<i>n = 74</i>			
		<i>≤ 1 hour</i>	<i>>1 hour and ≤ 3 hours</i>	<i>> 3 hours</i>			

FIGURE 2: OSM Motivational Factor Means

