Internal Innovation Communities from a User's Perspective: How to Foster Motivation for Participation

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Abstract. In order to further include the employees' creativity in the innovation processes, companies provide social software platforms for internal innovation communities to share, discuss and evaluate ideas. The main challenge for organizing such communities is to foster motivation for participation. In this paper, motivation theories are put in context with an innovation community concept developed at the automotive manufacturer Dr. Ing. h.c. F. Porsche AG. Firstly, an interview study analysis of this concept is used to identify new relevant expectations, hopes, needs and abilities of employees. Secondly, measures proposed in the past are evaluated. With the help of 20 semi-structured interviews it can be shown that each of the employees is unique and has own motivational deficiencies. Thus it is important that a concept for fostering motivation includes several measures which motivate the various users to participate. These measures are integrated into a holistic concept presented in this paper.

Keywords: tools for innovation, collaboration, innovation community, user motivation, enterprise 2.0.

1   Introduction

Researching the open innovation paradigm, *Chesbrough* suggests that organizations should integrate new sources for innovative product ideas from outside into their innovation processes [5]. However, *Gassmann and Enkel* found that limited absorptive capacities make it challenging to transfer external knowledge through organization boundaries [8]. Only recently more and more companies identify their own employees from various divisions inside the company as useful sources for new product ideas. Often, however, the accumulated knowledge and creativity necessary for generating such ideas is spread out widely through the organization. From a perspective of knowledge management these findings implicate two major tasks. Firstly, effective processes and tools for collaboration have to be provided through a software platform. Secondly, a culture of participation, curiosity and knowledge sharing has to be lived.

2   State of the Art

2.1   Research on Innovation Communities

Koch and Richter suggest that Social Software is suitable for collaboration and knowledge sharing especially in the case of large organizations [11]. As can be seen on popular internet applications, people are able and willing to share knowledge (e.g. on Wikipedia.org), discuss issues (e.g. on Facebook.com) and evaluate products (e.g. on Amazon.com) through social network functionalities. These typical functionalities for communication, collaboration and knowledge sharing can be transferred and adapted to an organization's internal platform for an innovation community, enabling employees to share, discuss and evaluate new product ideas. The Innovation Jam carried out by IBM in 2006 shows the potential of such platforms. *Bjelland and Wood* give an overview on the results of this online brainstorming session initiated by the IBM Top Management with the aim to bring together the creativity of more than 300.000 employees. As a result, in only 72 hours 150.000 employees, family members, business partners, clients and university researchers generated 46.000 ideas resulting in 10 new business units [4]. Since then *Reinhardt and others* have developed a variety of concepts for processes, structures and IT landscapes for social networks to support collaborative idea generation within organizations. However, after installation in organizations many of such innovation communities lack user participation.

One main reason for that can be found in studies of *Albers et al*: While in recent decades more and more effort was put into the development of computer tools for product engineering, the role of humans was neglected [2]. In order to organize a community for effective idea generation, the user has to be put in the center of a community concept. The innovation potential of an internal community can only be fully utilized if the user's expectations, hopes, needs and abilities are met. Hence, user acceptance is believed to be one of the keys to the success of any tool that is supposed to support the design process. This is why motivation theories from social sciences are in this paper put in the context of an innovation community platform developed at the automotive manufacturer Dr. Ing. h.c. F. Porsche AG.

2.2   Research on Motivation

Thus far, research has rarely considered the role of motivation in the context of community innovation. *Schattke* and *Kehr* analyzed motivation in innovation communities with 'the compensatory model of work motivation and volition'. [13] *Kehr's* model includes three components: Explicit motives, implicit motives and perceived abilities. [9] Explicit motives can be expressed by a person, they are consciously accessible and they constitute the reason for their actions. In contrast to that, implicit motives lead to behavioral impulses and are subconscious. Additionally, perceived abilities are the basis for people to perform certain acts. [9] With regard to implicit motives *McClelland* differentiates between the need for affiliation, the need for achievement and the need for power. The need for affiliation describes the desire of people to enter new social relationships and stay in touch with their friends. The need for achievement prompts people to explore what they are able to, so they can grow with new

challenges and expand their own limits. People who are motivated by the need of power aspire to have power and to keep it. They focus mainly on strength and control. Each of the types of need can appear more or less dominant to different individuals. [12]

Kehr states, that if explicit and implicit motives of a person are congruent, the person is enabled to be intrinsically motivated. If the perceived abilities also match these motives, the person can immerse into a 'flow' experience. [9] This is a state, in which a person has undivided attention to a task, a changed sense of time and no disturbing thoughts. [6] *Von Cube* relates 'flow' to the experience of mastering a challenge and go beyond one's expectations as in mountain climbing or complex problem solving. [7] This element is also addressed in 'the compensatory model of work motivation and volition'. It is found within the need for achievement.

For the purpose of an innovation community platform, where participation is voluntary, it is necessary to make sure that the users are able to have a flow experience. They need to be motivated explicitly as well as implicitly and must be enabled by their perceived abilities. Although *Kehr* offers different approaches to motivate people who have deficiencies in one of the three components of his model, *Schattke* and *Kehr* mainly concentrate on implicit motives and the need for affiliation, achievement and power. From these types of need the Authors derive recommendations for measures to motivate different types of employees.

A person who has deficiencies in explicit motives is not convinced that the action is required. Such a Person can be motivated by measures that focus on cognitive aspects. These are e.g. argumentation for the necessity of the action, setting goals and solving of conflicts of objectives. [10] A person who has deficiencies in implicit motives can be motivated by stimulating the needs for affiliation, achievement and power. Depending on the personal preferences, the need for affiliation can be stimulated by teamwork, the need for achievement can be addressed by challenging assignments and the need for power can be satisfied by the chance to earn prestige and responsibility. [10] A person who has deficiencies in perceived abilities is not able to solve the task with his abilities. These deficiencies can be overcome by making the task easier or by improving the person's abilities by assistance. [10]

3   Development of an Integrated Concept

3.1   Aim of Research

The authors are convinced that humans and their individual factors should be positioned in the center of product engineering when developing new methods and processes (see also [1]). In the case of an innovation community, an undefined number of users can be involved. Every one of them is a unique individual and will respond differently to measures of community management. Thus, when implementing a community platform, it is crucial to motivate all these different types of users. While approaches for stimulating implicit motives already exist [10], this paper aims at the identification of new relevant expectations, hopes (explicit motivation) and abilities (perceived abilities) of employees, the evaluation of existing measures for fostering (implicit) motivation, the development of new measures for innovation community management and the integration of these measures into one holistic concept.

3.2   Methodology

'The compensatory model of work motivation and volition' offers different perspectives on the motivation of users for participation within the community. Because of its broad approach this model has been chosen to support the framework for the further interview study analysis and the development of the concept introduced in this paper.

The interview study was conducted with the automotive manufacturer Dr. Ing. h.c. F. Porsche AG. Two workshops with innovation management experts have been held to identify relevant aspects for the following interviews. In addition, two innovation community platforms for demonstrational and test purposes were introduced to provide interviewees with a deeper understanding of variations in basic features of such platforms. Semi-structured interviews with 20 employees including current and potential users of an innovation community form the basis for the identification of relevant motives and the evaluation of possible management measures. Questions asked during the interviews concern the three areas explicit motives, implicit motives and perceived abilities. Thereby probable reasons for a lack of explicit motivation or perceived abilities have been identified and first potential solutions have been derived. Regarding implicit motivation 15 possible features for innovation community platforms were presented to the interviewees, who were asked to rank these according to how much they would like to use them. On the basis of the interview study, measures have been developed to foster motivation. Newly identified and evaluated measures are then checked for consistency because several measures can cause conflicts between various objectives. Those are identified and solved through a holistic concept.
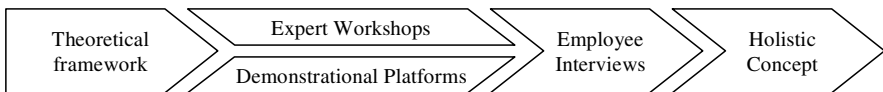

Fig. 1. Overview of this paper's research

4   Findings

4.1   Explicit Motives

Explicit motives are consciously accessible and the cognitive reason for people to undertake an action. Two major aspects of these motives were found in the experts workshops. Firstly, knowing about the relevance of the innovation community in a company and secondly, understanding the relevance of the specific innovation task that is to be solved by the community.

Relevance of the Innovation Community
The interviews revealed that "the projects [the employees are] working on don't leave a lot of time. If [they] spend time working in the community […] it should be valuable for the company." [Interviewee 15] Furthermore they say that "working in the community is definitely not prioritized." [Interviewee 5] In summary because of the lack of time it is important for the users that ideas can be efficiently added. In addition, reasons for the relevance of an innovation community need to be obvious. Therefore it is important that the employees see the necessity for innovation on the one hand and the suitability of a community to generate innovation on the other hand.

Relevance of the Innovation Task
The attention of an innovation community can be led by specific innovation tasks. Even if an employee is convinced by the relevance of an innovation community, it is further necessary to give arguments why the particular innovation task is important. One interview partner who worked in a workshop with a test community platform says that "in order to generate an additional value for the company, [he] always tried to solve the given task." [Interviewee 15] Furthermore an interview partner explains that "the main point is what the benefit for the [company] is." [Interviewee 2] In summary the users expect the tasks to be within a strategically relevant area and on a question, on which answers from the community can make a noticeable impact.

4.2   Implicit Motives

Implicit motives can be strengthened by stimulating the needs for affiliation, achievement and power. This can be accomplished by implementing specific functions in the innovation community platform. In the expert workshops, in literature and in case studies from existing platforms such functions were collected. After an introduction of the different functions that stimulate the need for affiliation, achievement and power, the results of the evaluation are analyzed and visualized in this chapter.

Functions to Stimulate the Need for Affiliation, Achievement and Power
Functions to stimulate the need for affiliation must address the desire of people to establish new relationships and stay in touch with existing relationships. Therefore functions for communication are important to people who are motivated by the need for affiliation. Examples for this kind of functions are the possibility to send personal messages and a chat function. Furthermore it can be shown to users who else is online in the community. [13] In addition, further functions can include the possibility to set up personal profiles and to link with colleagues.

   Functions to stimulate the need for achievement are effective if they give the employees the chance to engage in new challenges and improve their skills. Therefore a function for asking experienced members for feedback can be interesting. Ratings given from others also provide feedback on one's achievement. [13] Furthermore tools for visualization give the community members the chance to give feedback more easily and improve the quality of their posts. The personal skills can be improved by following categories in order to learn more about specific topics.

   Functions to stimulate the need for power are supposed to give the employees the chance to gain prestige. This can for example be reached with the name and the portrait of the idea generator placed next to his idea. Motivation of employees that focus on career can be achieved through a function to inform the supervisor by automatically forwarding own ideas. Power can also be gained by becoming a moderator. Employees can be motivated by having their ideas compared to others in a ranking and earning a title like 'innovator of the month'. [13] Additional statistics provide the possibility to compete with others.

Evaluation and Visualization of the Functions
Fifteen potential users were asked to rank the suggested functions by their personal preference. The result of that analysis can be seen in figure 2.
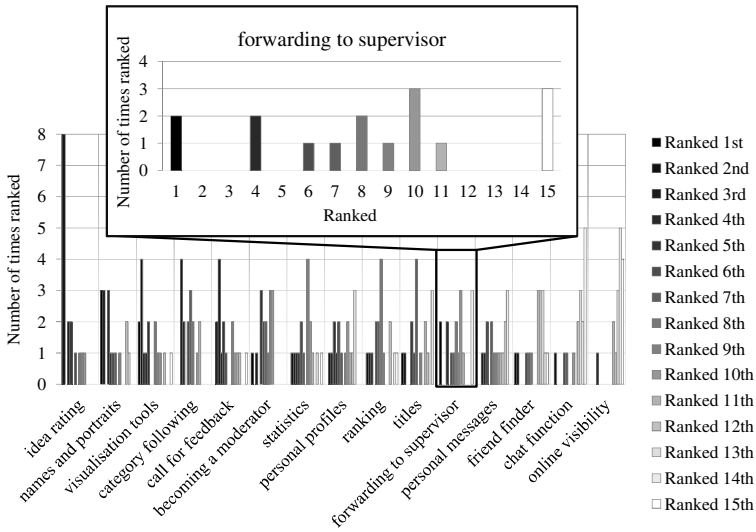
Fig. 2. Ranking of functions according to personal preferences of interviewees
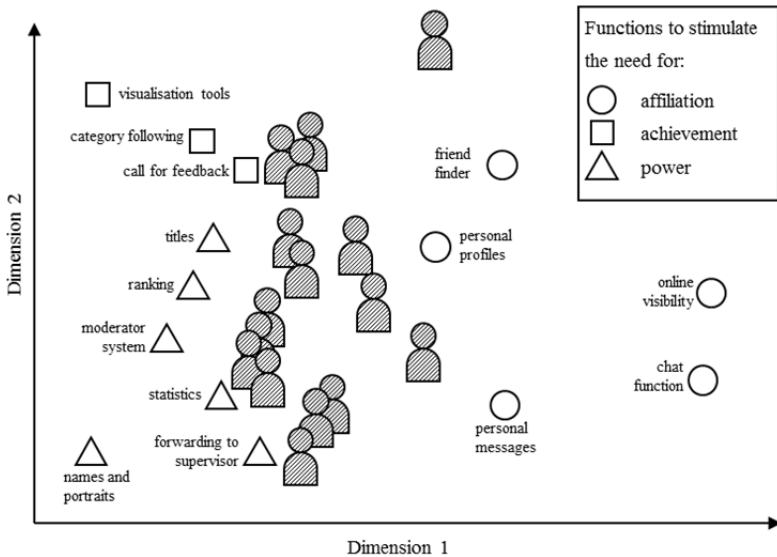

Fig. 3. Multidimensional unfolding to visualize the personal preferences towards different functions within a community platform

Except the function 'rating ideas', which is a basic function and expected by the interviewees, the distribution of the ranking is heterogeneous. The function for automatic idea 'forwarding to supervisors' is for example ranked first by two employees and ranked last by three others. One possible explanation for such discrepancy is that power motivated users focus on that function, whereas employees who are motivated by the need for affiliation and achievement do not consider this function as important.

If the decision whether to implement certain functions in the community platform or not was based on the averaged rating of the potential users, functions would not be taken into account although they are most important to some users. In addition in figure 3 the data is visualized by multidimensional unfolding. This statistic method allows to project objects and subjects by their similarity in a two dimensional space. [3] Thus functions that are ranked high by an interviewee are placed close to him, whereas functions that he dislikes have a larger distance to him.

By looking at figure 3 it can be seen that similar functions like the 'chat function' and the 'online visibility' function are placed close to each other. Furthermore the functions that stimulate the need for affiliation are clustered, as well as the functions that stimulate the need for power and achievement.

4.3   Perceived Abilities

Usability

Most interviewees stated that they have experience with internet applications like Wikipedia, Facebook and Amazon. However they say that "even small technical difficulties can demotivate potential users." [Interviewee 16] For example the community platforms for demonstrational and test purposes had a few deficiencies in this area, which "threw [users] back in [their] motivation." [Interviewee 15] Furthermore an interviewee says "even though [he] consider[s the innovation community] as very important, [he expects] that the access and the handling with the community platform is very easy and uncomplicated." [Interviewee 16] In addition care should be taken that the "effort is as low as possible to work" [Interviewee 10] in the community platform and "ideas [can] be entered efficiently." [Interviewee 5] In summary the interviewees expect an intuitive community platform with a comfortable access.

Selection of Innovation Tasks

One interviewee is "sure, that [he] can contribute to some innovation tasks more than to others, based on [his] experience." [Interviewee 3] Another interviewee "believe[s] that everyone has his favorite topics." [Interviewee 15]. By the sample of interviewees it was confirmed that different users have individual knowledge, specific technology or market expertise and personal intellectual skills. Depending on the area, topic and the question of the innovation task, users felt more or less creative. If a task makes it too hard for a user to contribute at all, he might get frustrated. Thus, an innovation task is only motivating, as long as it appears solvable to users. On the other hand, users who are driven by the need for achievement might get bored if a given task is too simple and lets them only generate ideas which are already obvious. For such users the optimal level of excitement can be reached, when a task appears challenging and demands just the very best effort of the user to solve.

5   Application in an Example Case

At the example of a community concept developed at Dr. Ing. h.c. F. Porsche AG it is shown how the findings from Chapter 4 can be applied on a community platform. Firstly measures are recommended, secondly they are analyzed in a holistic context.

5.1   Measures to Foster Motivation for Participation

Five major issues have been identified in the interview study: The user's understanding of the relevance of an innovation community as well as the specific innovation tasks, providing functions to stimulate the users' implicit motives, ensuring usability of the software and the adequate selection of innovation tasks. In the example case these issues are addressed with the following recommendations:

1. In order to show to the users the relevance of the innovation community platform it is recommended, that the top management publishes statements for innovation communities in the platform, articles are printed in the company magazine and the CEO sends an e-mail to the users directly calling for participation. Furthermore the priority in working in the platform can be improved if the top management also participates in the community. In addition, videos of successful cases from the past can be presented to show the suitability of a community to generate innovation.
2. In order to show the users the relevance of the specific innovation tasks it is recommended that the tasks are related to the organization's strategy, endorsed by statistics and studies explaining why each task is going to be important for the future.
3. Considering that every potential member of the community is an individual, the innovation community platform should offer a multitude of different functions to motivate all kinds of users. On the other hand, there are hardly any users who want to use every possible function. As a consequence every member should be able to decide on his own if he wants to use a function or not, e.g. rankings.
4. For high usability the access to the community platform should be quickly found, for example via a link on the intranet homepage. After the computer login, an additional login request for the community platform should be avoided. A video explaining the platform and answers to frequently asked questions can help inexperienced users. To identify difficulties, the community platform should be established in several steps, starting with testers who are not easily frustrated.
5. Since every user will define his perceived abilities differently, it is suggested, that several innovation tasks are given to the community at the same time. The users can then decide which task they would like to work on. Just like different goals are chosen by mountain climbers according to their own physical fitness, different tasks should cover various levels of complexity and various topics. In addition, a 'free ideas' task should be opened to address ideas which don't match given topics.

5.2   Holistic Concept on Motivation in an Innovation Community Platform

Since the employees have different motivational deficits the recommended measures address all three components of 'the compensatory model of work motivation and volition'. These various measures have to be checked for consistency. It is recommended that the community platform has a large number of different functions. However, it should be easy and uncomplicated to work with.

One interviewee describes one testing platform as "extremely confusing." [Interviewee 16] Another interviewee says about the same testing platform, that "it is a matter of taste, what is too much [or] too few. [Apparently, he is] already used to other community platforms" [Interviewee 3] and, "because [he has] seen a lot of platforms, [he is] able to imagine something behind all the functions." [Interviewee 3]

Thus different users with different experience perceive the usability of the same platform more or less easy to handle.

In order to equip the platform with interesting functions but prevent an overload, an analogy to smartphones may be considered. Smartphones can have a lot of different functions. Their handling, however, is perceived intuitive. One reason for that is that there are only a small number of functions installed, when delivered. Once a user gains more experience, he can then enhance the smartphone through downloading and installing new applications of his choice. This logic can be transferred to innovation communities. Like smartphones functions the community platforms functions should be modular. In the beginning, every user should only see basic functions to ensure a good usability. However, he should then be able to customize the platform according to his needs. From the user's view, such self-determination is important for the acceptance of the platform. That is why as few functions as possible should be enforced upon a user or withheld from him.

6   Conclusion and Outlook

The findings on the basis of 'the compensatory model of work motivation and volition' indicate the complexity of motivating users to participate in an innovation community. Since every user is unique and responds differently to measures of community management, a 'one-size-fits-all'-approach is rarely adequate. With the example case it is illustrated how motivation for participation can be fostered. A broad set of measures regarding layout design, processes and communication of a community platform is recommended. Furthermore a modular platform is proposed which can be individually configured by the users according to their motives and abilities.

Kehr's 'compensatory model of work motivation and volition' showed to be suitable to analyze motivation in innovation communities. For future research on human factors further theories from the social sciences may be considered. In order to solidify the findings and validate the described measures for the example case further analysis on cases from other organizations should be carried out . The presented concept needs to be further developed and additional objectives and requirements within the context of organizations have to be considered, This includes intellectual property management, information technology security, data protection, human resources, cost optimization and processes of moderation, transfer and implementation of ideas. Whilst research on innovation communities has started only recently and methods and processes for community management will become more and more enhanced in the future, putting humans in the centre will be the most important success factor.

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