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# COMMUNITY FOR INNOVATIONS: DEVELOPPING AN INTEGRATED CONCEPT FOR OPEN INNOAVTION

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## Abstract

*This paper presents a research project called “GENIE”. It aims at developing a concept for integrating external stakeholders into a company’s innovation management through a virtual community. This novel instrument for opening up a company’s innovation process towards external stakeholders enables collaborative creation and implementation of innovations along the entire innovation process. We focus on software companies and aim at developing and testing this approach in several real-world settings.*

*Keywords: Open Innovation, Wisdom of Crowds, Virtual Communities for Innovations*

## 1 INTRODUCTION

### 1.1 Software companies’ innovation problem

Innovative strength in Germany compared to other countries can be found in the domain of engineering and industrial commodities. A prominent example is the German automobile industry (Holl et al. 2006). However, this can not be stated for German software producers, which are only average compared to other countries such as the US or other leading European countries. According to a survey by the German Federal Ministry of Education and Research, German software producers lack a business culture fostering systematic innovation activities. There is no systematic brainstorming in order to generate ideas for innovations. Idea generation takes place informally without sustainability and is often driven by coincidence (Holl et al. 2006, 118). Furthermore, software producers’ management of innovation is not using the innovative potential of customers. Customers’ demands, wishes, and requirements often are not used systematically for new product development. Usually, customers are merely treated as recipients of products, not as a source of innovations.

As a consequence, German software producers generate fewer “real” innovations compared to software producers from other countries. Usually, software companies, which are often organised as one-man as well as one-product business, generate incremental innovations. They “just” improve their existing software products over a long period of time without generating disruptive or radical innovations.

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However, this situation will endanger software producers' future perspectives in the highly competitive software market.

## 1.2 Potential of open innovation

A chance for software companies to overcome these problems lies on opening up the innovation activities to other resources, e.g., employees or other stakeholders but especially to customers and software users. Customers and other stakeholders should take part in innovational value creating activities. So customer and stakeholder integration into innovation activities stands for an important competitive strategy, especially for small and medium sized software producers.

This approach often referred to as "Open Innovation" (v. Hippel 2005, v. Hippel & Katz, 2002, Chesbrough 2003) becomes more and more important in product development. Literature describes the integration of customers as one of the biggest resources for innovations (Tidd et al. 2005, Wagner and Prasarnphanich 2007). Chesbrough illustrates the new paradigm of Open Innovation in the context of industrial research and development (see figure 1). The underlying idea is: The integration of stakeholders will open up the company's innovation funnel – more potential perspectives or ideas for creating innovations come to the innovation process. Or in other words: the amount of innovation potential that can be poured into the innovation funnel is rising because more actors are actively involved. Therefore, the company gains more ideas for innovations. Thus, the principle of collective intelligence or wisdom of crowds is the underlying assumption of Open Innovation (Libert and Spector 2008; Surowiecki 2005).

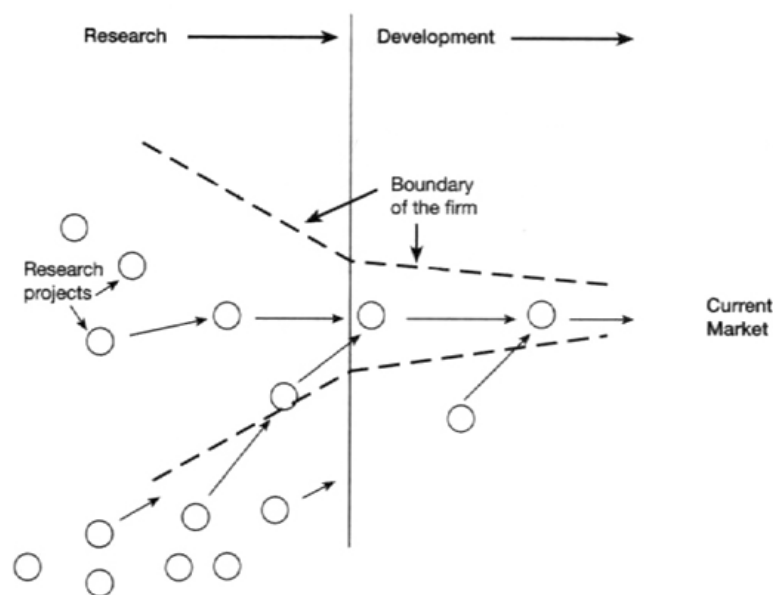


Figure 1: The open innovation paradigm (adapted from Chesbrough (2003))

## 1.3 Existing methods and practices for integrating customers in company's innovation activities

These so-called Open Innovation Systems require communication and interaction between all parties involved namely the company internal actors as well as its external stakeholders. In practice, a couple of methods and instruments are in use in practice, which allow stakeholder integration into the early stages

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of the innovation process. Literature describes three core-methods: the Lead-User-Method, Internet-Toolkits, and Ideas Competitions. (1) The Lead-User-Method implies systematic identification of single innovative customers - so-called lead users - and their integration into workshops in order to generate ideas and concepts for new products or services together with companies' employees (von Hippel 1988). (2) With the help of User-Toolkits, customers are asked to design concepts for new products via the Internet or a software application (von Hippel and Katz 2002). (3) By conducting Ideas Competitions, companies attempt to collect innovative ideas from customers (Walcher 2007).

The problem with existing methods and practices is that none of them fosters collaboration among involved parties, especially customers. In Ideas Competitions, even competitive situations are induced, preventing collaboration among idea contributors. But collaboration has been identified as a great potential of stakeholder integration (Gasco-Hernandez and Torres-Coronas 2004). Research shows that most innovations are not the result of a single inventor but rather of collaboration processes where many individuals contribute their individual knowledge, experiences, and strengths (Gasco-Hernandez and Torres-Coronas 2004; Franke and Shah 2003; Nemiro 2001; Sawhney et al. 2005). Furthermore, established methods and practices solely serve the early stages of the innovation process where ideas for innovations are generated. There are no practices or methods available that allow involved parties to enhance or elaborate collected ideas into innovation concepts or even prototypes.

## 2 COMMUNITIES FOR INNOVATIONS

### 2.1 The concept of communities for innovations

Opening up the innovation funnel to external stakeholders depends heavily on the willingness of those interacting and sharing ideas among each other. This willingness to share and collaborate can often be found in virtual communities, e.g. in the context of Open Source Software (von Hippel and von Krogh 2003). Therefore, we introduce the concept of a company induced virtual community for innovations consisting of the stakeholders of a software company, especially customers and company members. Previous work on community building in other domains has shown that to a certain extent it is possible to influence building and establishing virtual communities according to specified goals (Leimeister and Krcmar 2005, 2006).

The proposed Community for Innovation aims at supporting software companies at every stage of its innovation process. Acting via an internet-platform, the community members can generate ideas and collaborate with other community members. Each member of this community can submit ideas, connect with idea contributors that submitted similar or complementary ideas, and elaborate ideas in collaboration with matched members. Thus, the community enables forming various networks/teams that will collaboratively elaborate better, more meaningful, and relevant ideas compared to those initially submitted. Using this mechanism will help select the best ideas and will increase the benefit for the company significantly.

Furthermore, we assume that ideas generated in this manner will likely carry much so-called solution information. Solution information represents not only the customer's needs and wishes but also customer based suggestions that describe how to transfer these ideas into marketable products (von Hippel 1994). On the basis of those elaborated ideas the formed networks/teams can start developing innovative software prototypes collaboratively.

### 2.2 Requirements for communities for innovations

Building communities for innovations requires organisational as well as technical requirements. From an organisational perspective, the concept has to account for motivational aspects. The underlying question

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is: why should software users participate in the community for innovation? The research field of Open-Source may give insights for answering this question as our concept is comparable to open-source communities. There are a couple of research works analysing motivations of participants in open-source projects (Hars and Ou 2002, Hertel et al. 2003, Lakhani and Wolf 2005, Lerner and Tirole 2000). Open-Source project participants' motivation fall into two broad categories: internal factors (e.g., intrinsic motivation, altruism) and external reward (e.g., expected future returns, personal needs) (Hars and Ou 2002). Understanding motivational reasons of potential participants is essential for developing adequate incentives.

Every Virtual Community has its own social framework, which is embedded in daily life of every participant and is represented on its underlying Internet platform (Kelly and Jones 2001). So, another organisational requirement for building communities for innovation is to design a social framework. When designing a community for innovations from scratch, one has to develop norms, rituals, and policies about how members get to know each other, start debates, collaborative and other activities. Other questions that arise in this context are: What kind of governance should be established? Which rules should be implied and how should they be enforced? Several research works in the field of virtual communities have acknowledged the importance of social settings in communities (Preece and Maloney-Krichmar 2003) that can give insights for our research.

From a technical perspective, the community for innovations requires an adequate IT-based platform. This platform needs to offer a mutable and freely composable set of IT-tools. Needed IT-tools can be categorized as follows: 1) tools for communicating (chat, bulletin board, usenet etc.), 2) tools for visualizing and presenting ideas, and 3) tools for collaborating. The design of IT-tools for the community has to be adjusted according interaction practices of the community for innovation members. Otherwise, the tools will not be used (Orlikowski et al. 1995). For example, it is proved that computer supported cooperative work-media will have different effects in specific settings (Olson and Olson 1997). Furthermore, the research on virtual communities shows different impacts of technologies in different kinds of communities as there are significant differences between the various technologies available for supporting online communities. (Preece and Maloney-Krichmar 2003). So, the right set of technologies out of each category has to be identified for the technical design of the community for innovations.

### 3 RESEARCH APPROACH AND METHODOLOGY

As the research object "community for innovations" is new and hardly investigated, general theories about this novel research object do not yet exist. Stating and validating hypotheses which are purely deduced from theory - as common in empirical-analytical research designs - cannot be applied here. We aim at developing a concept in a real-world setting and continuously improve it as we learn.

For designing novel, socio-technical innovations such as communities for innovations, explorative methods are often most fruitful. We therefore design this research as an Action Research project. According to Baskerville's (1999) action research cycle, the project is structured in for circular phases.

**Diagnosing:** In this phase, aspects out of the research object "community for innovations" - namely the domains of customer integration into innovation processes, motivation, collaboration etc. - will be analysed from theoretical as well as from practical perspective. We will develop requirements for the community building and management. For example, we will employ the "inducements-contributions-theory" in order to account for motivational incentives of the community members. The developed requirements will give guidance for the further research process.

**Action Planning:** Based on the results of phase one, we will plan the concept of Communities for Innovations in detail. We will design an organisational concept as well as an IT-platform that will offer adequate IT-support for the different tasks of the community. Thus, we will give answers to the following

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questions: (1) What are adequate incentives for the community members to submit ideas as well as to link to other members and to collaborate with them? (2) How must the community be organised/the organisational structures look like so that the concept will work? (3) Which interaction and communication needs will the community members have? (4) Which existing or newly to develop IT-tools are needed to support the activities and tasks occurring in Communities for Innovations? (5) How can these IT-tools be integrated and orchestrated on a single IT-based platform?

**Action Taking:** In this phase, the concept planned in phase two will be tested. As a main goal of the field test, we will analyse, if, how and why the concept works or not. We will run the test in cooperation with a large ERP software company in order to get access to its customer base. The customers will be potential members of our pilot community.

**Evaluating:** After implementing the concept, the observed results will be evaluated according to a pre-defined evaluation scheme. We aim to find out if, e.g., the following questions can be answered: (1) Will the Community breed ideas for innovations? (2) Will the community members elaborate ideas collaboratively? (3) Will the elaborated ideas arising from collaboration processes be more useful compared to those arising from other methods and practices of stakeholder integration (How can the quality of ideas be measured)? (4) Will the elaborated ideas arising from Communities for Innovations contain solution information (If yes, to which degree)? (5) Will the IT-tools provided to support creative activities be accepted by the community?

## 4 CONCLUSION

The concept of community for innovations seems to be a promising approach. Two main aspects make us believe that this concept can work: 1) From an organisational perspective, the Open-Source phenomenon shows that collaborative software development via the Internet can work. 2) From a motivational perspective, several research results confirm that customers actively get themselves involved in manufacturers' innovation processes without asking for monetary reward (Franke and Shah 2003, Harhoff et al. 2003, Henkel and von Hippel 2003). This phenomenon is discussed in literature as "free revealing" (Harhoff et al. 2003).

As our concept of community for innovations is new it has to be tested and verified in practice. The results of our field tests will give answers to the question if communities for innovations will be an alternative or even a better method for integrating customers and stakeholders into manufacturers' innovation process compared to User Toolkits or Ideas Competitions. At the end of our research project the following open research questions should be addressed: What are the implications for open innovation theory applying the concept of communities for innovations? What are the key lessons learned after testing the concept in the field?

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