Association for Information Systems
AIS Electronic Library (AISeL)

ECIS 2012 Proceedings

European Conference on Information Systems (ECIS)

5-15-2012

PARTICIPATION AND CONTROL IN ONLINE COMMUNITIES: COMPARING THREE CASES OF USER INVOLVEMENT IN SERVICE NETWORKS

Nadine Lindermann
University of Koblenz-Landau

Mario Schaarschmidt
University of Koblenz-Landau

Harald Von Kortzfleisch
University of Koblenz-Landau

PARTICIPATION AND CONTROL IN ONLINE COMMUNITIES: COMPARING THREE CASES OF USER INVOLVEMENT IN SERVICE NETWORKS

Nadine Lindermann, University of Koblenz-Landau, Universitaetsstr. 1, 56070 Koblenz, Germany, nadine.lindermann@uni-koblenz.de

Mario Schaarschmidt, University of Koblenz-Landau, Universitaetsstr. 1, 56070 Koblenz, Germany, mario.schaarschmidt@uni-koblenz.de

Harald von Kortzfleisch, University of Koblenz-Landau, Universitaetsstr. 1, 56070 Koblenz, Germany, harald.von.kortzfleisch@uni-koblenz.de

Abstract

This paper aims at investigating three different scenarios of user involvement in service networks. In particular, we chose a heterogeneous network of small and medium sized enterprises (SME), where firms form the network and users are the employees of those firms, a health care network, where hospitals and physicians are institutional members of the network and the role of the "user" is assumed by patients, and an open source service network (OSSN), where open source firms are institutional members of the network, and both employees of those firms as well as free developers may be considered "users." Based upon qualitative interviews we find transparency and perceptions of regulations and control to be important for institutional actors in service networks. As such, this study provides recommendations to service network managers and service network members that intend to make use of user's knowledge by means of collaborative tools and online platforms.

Keywords: Service Networks, User Involvement, Open Service Innovation, User Innovation

1 Introduction

Based upon the seminal work of von Hippel (1988), various authors have emphasized the shift from purely manufacturer-centric to a more customer-active and user-centric paradigm of innovation creation (e.g., Baldwin et al. 2006; Jeppesen and Frederiksen 2006; Ogawa and Piller 2006). Thus, instead of keeping the innovation process closed until the product is ready for a user test phase, innovative firms increasingly try to include users in early stages of the innovation process. In recent years, the emergence of phenomena such as Web 2.0, social software, and blogs has intensified the consideration of the user's role within the innovation process and thus the importance of users' knowledge for basically two reasons: (1) because the technology enables firms to capture user knowledge more easily, and (2) because users are willing to provide their knowledge, mostly unasked and for free (Wasko and Faraj 2005).

As a consequence of technical achievements on the one side and willingness to share information and knowledge on the other, numerous virtual online communities have been created that are intensively used by firms to get access to information that was formerly hidden (West and Lakhani 2008). Firms can access this information either passive (e.g., reading customer's blogs), active (e.g., offering own blogs for customer's feedback), or they can even interact with members of online communities such as in the case of online idea contests (Hutter et al. 2011). Interaction among members of an online community, in turn, can lead to the production of innovative ideas and even to the production of ready-to-market innovation such as in the case of open source software (Lakhani and Von Hippel 2003). Consequently, Bogers et al. (2010) refer to the phenomenon of innovative ideas that emerge because of interaction among members in online communities as community innovation.

In summary, a community of people with shared interests that provide their knowledge for free and do not have to be stimulated to do so, comprises an inherent value to various groups (e.g., firms, non-profit organizations, etc.) in various scenarios (e.g., product innovation, service innovation, process innovation). However, whereas research has given much attention to the relation between firms and customers/consumers as well as to product innovation in the context of user and community innovation (cf. O'Hern and Rindfleisch 2010), comparatively little research has addressed relations other than firm-customer relationship scenarios. Additionally, we observe a lack of studies pertaining to user involvement in service and process innovation.

This paper aims at closing this research gap by investigating three different scenarios of user involvement in service networks, that is, *"a network intentionally created and formally organized to pursue residual referral revenue for the member firms"* (Koza and Lewin 1999, p. 639). The peculiarity of service networks is that value creation and capture is distributed among network members. In addition, interests of including individual users into knowledge exchange in online communities may differ among service network members. However, different interests result in an increased need for control (O'Mahony and Bechky 2008). Thus, it is important to know how service network members (i.e. firms or non-profit organizations) rate the benefits from accessing user's knowledge as well as the level of control they judge as necessary to preserve their interests.

This study assumes an ex-ante perspective rather than an ex-post perspective. In other words, instead of investigating observable behavior of users once an online community exists, this research considers expectations of user involvement of those who plan to make use of users' knowledge in service network scenarios. Thus, three cases were chosen where a network of institutions provides services and considers fostering exchange both (1) between members of the service network and (2) between users and members of the service network through online collaboration. For each case we conducted in-depth qualitative interviews with representatives of institutional actors within the service network about their expectations and perceptions of control. As such this research helps to identify impediments to involve system users in collaboration as well as service network members' expectations from integrating users.

2 Conceptual Background

2.1 Community Innovation and Idea Generation in Service Networks

The recognition of user communities as means to innovate beyond firm boundaries has lead to numerous publications in recent years (West and Lakhani 2008). For example, researchers have investigated scenarios in retail banking (e.g., Oliveira and Von Hippel 2011), windsurfing (Shah 2000), healthcare (e.g., Nambisan and Nambisan 2009), and open source software (e.g., Lakhani and Von Hippel 2003). In some cases, community members have even started to promote and market their own ideas, an action that is commonly referred to as user-entrepreneurship (Shah and Tripsas 2007).

However, in order to fully understand the concept of community innovation in (service) networks, one has to distinguish interactions between firms and communities from intra-community interactions (West and Lakhani 2008). In addition, since firms increasingly have started to assign own employees to engage in communities, firms have become parts of the community which makes a delineation of community boundaries difficult (Dahlander and Wallin 2006).

Despite the academic challenge to describe what constitutes "the community", it is widely accepted that communities generally benefit from technological movements such as the Internet. In contrast to bi-directional email exchange, in collaborative scenarios known as Web 2.0, community members can build their own profile and create virtual rooms in which they can interact with each other. However, the fact that firms or their representatives may equally be engaged in online communities yields interesting implications for knowledge flows: In the absence of Web 2.0 technologies, knowledge flows existed between organizations and between organizations and their direct affiliates, but not between organizations and affiliates of other organizations. For example, knowledge has been exchanged between firms, and within firms but not between firms and employees of other firms (Figure 1, left). With Web 2.0 new forms of knowledge exchange in networks are possible that, in turn, may lead to co-creation of ideas and services (Berry et al. 2006) (Figure 1, right).

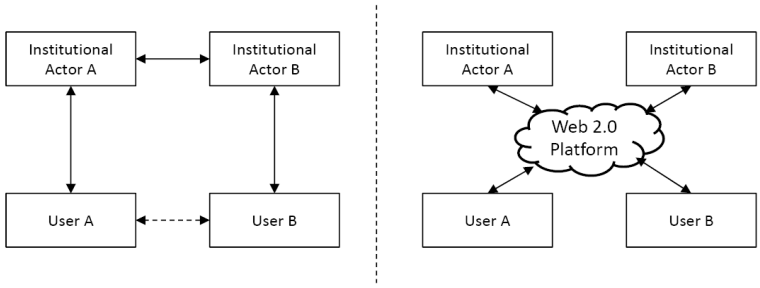

Figure 1. Different Forms of Knowledge Flows

With respect to service networks, the service offered by member A is complemented by the service offered by member B. Community innovation in this context – when enabled by technologies (Grace et al. 2008) – embraces service innovations that emerge conjointly from institutional member (e.g., firms, non-profit organizations) and users (i.e. service receivers) and which pertain to the network rather than to single members or users. As such, this innovation mode fulfills the requirements to be named open service innovation (Chesbrough 2011).

In summary, Web 2.0 technologies or platforms enable knowledge sharing between groups that has formerly not been possible. However, increased options of knowledge flows and exchange might increase individuals' and organizations' wish for control. For example, if employees of firm A are able to communicate and share knowledge with employees of firm B, CEOs of the each firm are likely to control the knowledge that is exchanged (Schaarschmidt et al. 2011). Thus, while much knowledge

exchange and idea generation occurs undirected beyond the control of firms in online communities and service networks especially, those firms or organizations that intend to benefit from online communities must also consider their options to control knowledge exchange.

2.2 Organizational Control in Communities

Control as understood in organization science is only necessary if group members pursue divergent interests (O'Mahony and Bechky 2008). In cases were interests are completely convergent, no control is needed since all group members pursue the same goal. However, usually interests among group members differ, such as in the case of online communities, and result in principal-agent relations. Ouchi (1979) has developed a framework that captures various approaches to control as a function of knowledge of the transformation process and the ability to measure output (Figure 2).

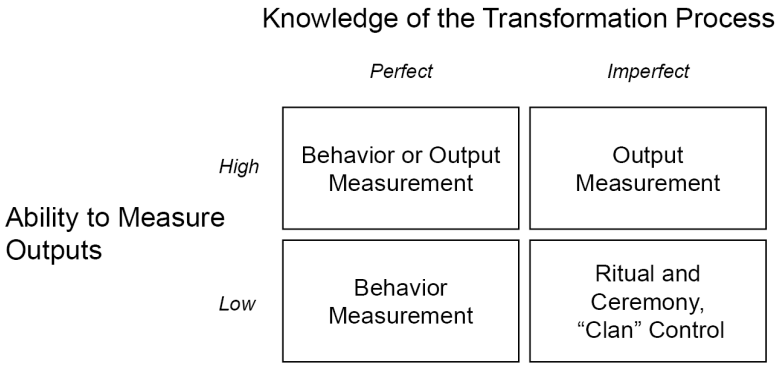

Figure 1. Organizational Control Framework (Source: Ouchi 1979, p. 843)

Knowledge of the transformation process refers to a supervisor's knowledge about the task employees have to fulfill. Ability to measure outputs refers to the possibility of measuring the employees output (e.g., produced pieces per day). In combination both dimensions form a framework of control based on whether or not a supervisor possess knowledge about the transformation process and whether or not a person's output is measurable. For example, workers in a factory usually underlie the authority of their direct lead workers who know how tasks have to be performed. Additionally, the workers output is measureable. Thus, the ability to measure output is high and knowledge about the transformation is perfect, which implies that both an outcome based and a behavior based control approach is possible (Ouchi and Maguire 1975). In situations where knowledge about the transformation process is incomplete such as in the case of sales, behavior control is not appropriate and control based on output measurement preponderates (Andersen and Oliver 1987).

However, control as posited by Ouchi (1979) pertains to organizational contexts where employees are bounded by legal labor contracts and are embedded in hierarchical command chains. In online communities it is by far more difficult to control behavior and output. Dahlander and O'Mahony (2011) argue that for open source projects it is possible to distinguish control over individuals from control over the project. Relatedly, we argue that controlling behavior by means of labor contracts is not possible in online collaboration scenarios. The only exception is that the firm that assigns employees to engage in an online community still has control options permitted by labor contracts – but only to the group of employees.

Organizations that intend to benefit from online communities by establishing an online platform for a service network tend to influence what happens within the community but are unable to control the individual by means of labor contracts. Thus, in accordance with Dahlander and O'Mahony (2011), organizations are most likely to control the content rather than controlling individuals. However, neither how organizations (in their role as service network members) perceive the necessity for control nor which modes of control they prefer has been in the focus of research yet.

3 Research Approach

3.1 Research Method and Objectives

Because the topic of this research with the focus on service networks is regarded as comparatively new, we used a case study design (Eisenhardt 1989; Yin 2003) and qualitative interviews (Schultze and Avital 2011) to address the identified research gap. The interviews have been transcribed and content analysis has been applied. Our coding scheme was based on concepts such as openness, control and fear to lose influence.We chose our cases according to several distinguishing aspects. For example, service networks pursue different aims in relation to knowledge exchange and consist of different institutional actors and different individuals that can be considered system or network "users" in the sense of user and community innovation (e.g., Henkel and Von Hippel 2005). Distinguishing aspects, though, embrace the relationship between institutional actor and network user, service innovation need, as well as access to the network.

According to these distinguishing features we chose a SME network, a healthcare network, and an open source service network (OSSN). Concerning innovation need, SME networks as the one we chose (see 3.1.1) perceive the need to innovate in non-competitive scenarios such as work-life balance for employees (e.g., Schaarschmidt et al. 2011). Regarding a healthcare network's innovation need, innovations in healthcare organizations are typically new services, new ways of working and/or new technologies (Länsisalmi et al. 2006), but within a service network, innovation is pertaining to the way how the service is delivered (Herzlinger 2006). The innovation need for OSSN can be traced back primarily to the need of aligning different services from different members (Feller et al. 2008).

Concerning access to the network for users, an SME network is comparatively close since users must be employees of member firms. Access to healthcare networks is usually open but in order to be considered a patient, a user has to be ill which is why we classified a healthcare network as semi-open. Finally, OSSNs are open for firms (that usually pay a member fee) as well as to users.

With respect to the relationship between users and institutional actors, the relationship between SMEs and employees is characterized by a contractual relationship. Patients are not contractually dependent on physicians since theoretically they have the right to chose. However, relationships between physicians and patients are characterized by trust and high transaction costs. The relationship in the case of the OSSN is twofold. Developers that are employed by firms utilize a contractual relationship while free developers utilize a rather open relationship to institutional actors such as open source firms. Table 1 provides an overview of case characteristics.

	SME Network	**Healthcare Network**	**OSSN**
Institutional Actors	For Profit Firms	Hospitals / Doctors	For Profit and Not For Profit Organizations
Institutional Actor Representative	CEO	Doctors / Physicians	CEO
Network Users	Employee	Patient	Developer / User
Innovation Need	Service for Employees	Service Delivery	Service Combination
Access to Network (User)	Closed	Semi-Open	Open
Institutional Actor-User Relationship	Contractual relationship between employees and firms	Non-contractual patient-physician dependency	Partly contractual relationship between firms and employees; Partly non-contractual between free developers and the OSS project

Table 1. Overview of Case Characteristics

3.1.1 Case 1: SME Networks

The context of our first study is the 'WirtschaftsForum Neuwied e.V.', a regional network of SMEs in the north of Rhineland-Palatinate in Germany, which consists of roughly 120 SMEs employing about 10,000 workers. It was founded in 2002 and comprises companies primarily from the industry and business sector in the surrounding area of Neuwied. The regional network is heterogeneous in structure regarding respective size of the cooperating companies, represented branches, products and services and technological affinity. The collaborative activities thus focus on non-competitive areas (e.g. education, energy saving) and aim at fostering information and knowledge transfer between the cooperating firms as well as enhancing cooperation and business relations. The majority of this exchange is initiated or driven on the executives' level only, while employees are barely integrated into the collaborative work. However, the 'WirtschaftsForum Neuwied e.V." tends to focus on the integration of the employees' level to generate collective solutions for daily work life problems.

For our study 15 CEOs out of 15 member companies of the "WirtschaftsForum Neuwied e.V." were interviewed on a basis of an interview guideline. The interviews were directed at determining the goals and requirements of SMEs cooperating within a regional network in relation to employee involvement.

3.1.2 Case 2: Health Care Networks

In our second study we consider the 'BrustZentrum Mittelrhein', a breast cancer centre in the north of Rhineland-Palatinate, which was founded in 2005. As a result of political decision, seven regional hospitals are grouped together into a network in order to ensure an evidence-based, high quality care of patients with breast cancer. The cooperation between the hospitals is based on contractual arrangements as well as legal regulations. Thereby the cooperating partners undertake to follow the national and international guidelines for breast cancer care as well as to participate on certification procedures. Further contracts with selected specialists from the ambulatory sector regulate a qualitative, guideline-oriented service delivery with closely related partners of the supply chain. In addition the centre strives to foster the collaboration with physicians and specialists of the ambulatory sector in order to produce a seamless and continuous care according to the patient's needs.

With regard to our qualitative study, seven guided interviews were conducted with five physicians (gynecologist) and two clinicians of the breast cancer centre (chief physicians) on the basis of a semi-standardized questionnaire. The interviews focused on determining the collaboration between the physicians, the breast cancer centre, and the patients along the supply chain.

3.1.3 Case 3: Open Source Service Network

Open source software[1] firms usually are specialized and cannot offer complete solutions which is why they have started to create Open Source Service Networks (OSSN) in order to be able to offer customers a complete stack of solutions and thus to deliver the full range of services the customer demands. Feller et al. (2008, p. 476) define an Open Source Service Network (OSSN) as *"a network of firms that collaborate in order to service customer software needs based on open source solutions."* In this regard, OSSNs can offer access to all types of services that a user firm needs.

In our third study we focus on an Open Source Foundation located in Nuremberg, Germany, as an example of an OSSN. The foundation exhibits more than 100 member firms and started in 2006. Although formally acting as a foundation, it positions itself as an OSS network. The foundation runs

[1] Open Source Software (OSS) is an alternative to proprietary software in that the software as well as the software code is available for free (Lakhani and Von Hippel 2003).

several projects that are dedicated to "hot topics" such as Cloud Computing. However, other projects revolve around aspects of interoperability and OSS software stacks.

Considering our qualitative study, four guided interviews were conducted with CEOs of member firms of the OSSN on the basis of a semi-standardized questionnaire. The interviews focused on determining the collaboration between firms and firms on the one side, and firms and the OSSN on the other.

Table 2 provides an overview of our interviews.

Case	Interviewees	Number of Interviewees	Interview Duration
SME Networks	CEO's of SMEs active in an SME network	15	90-120
Healthcare	Doctors from both the ambulant and stationary sector	7	30-45
OSSN	CEO's of OSS Software Vendors	4	45-75

Table 2. Overview of Interviews

3.2 Research Results

By means of comparing three different cases, we identified three issues that provide general statements concerning user involvement and participation of companies in service networks as well as the companies' level of control for participation.

(1) Asymmetrical relationship between institutional actors and network users

The first general issue refers to the involvement of the network users into the collaborative work. According to the research results, which are listed below, we can assume that each service network maintains an asymmetrical relationship between its institutional actors and network users. Information is a common factor, which causes this asymmetrical relationship: The institutional actors possess information about the network and decide which information they pass to the network users.

Case 1 SME Networks: The results of our first study show that the employees are not integrated into the collaborative work. It can be suggested that a majority of employees is not informed about the existence of the network. The executives maintain the information and decide which information they forward to their subordinates. As a result an information lack on the employee-side arises, which causes an asymmetrical executive-employee relationship concerning the SME network.

"I admit that I do not forward any information about the network to my employees. In my opinion most of the employees do not know that the "WirtschaftsForum" exist." (C1-I1: executive)

I do not know what my employees should exchange there. They have to concentrate on our business. That is why I decide which information about the network they receive." (C1-I7: owner)

Case 2 Health Care Networks: Since medical know how is necessary to decide on adequate service delivery, a lack of medical qualification on the patient-side causes an asymmetrical doctor-patient relationship. In this regard patients defer decision-making responsibility to the doctor (Shackley and Ryan 1994). The system user is thus dependent on the decisions of the institutional actor. Nevertheless the user maintains the possibility to choose between different service providers and services. In the context of our study, the institutional actors direct the system users through the service delivery network. Thereby the doctors provide as much information as needed, so that patients gain incomplete information vice versa:

"I do not give her any more information about the ongoing therapy, except she demands for them. In her special situation too many details just confuse." (C2-I1: gynecologist)

"The patient just knows that she will be treated in a hospital that is specified for breast cancer care". (C2-I4: gynecologist)

Case 3 Open Source Service Network: Although Open Source, as a development approach, is famous for its collaborative, distributed nature and culture of gift exchange (Lakhani and Von Hippel 2003), OSSNs pursue commercial aims. The reasoning beyond OSSN is that since no value can be generated from OSS directly, OSS vendors offer services to OSS such as implementing, customizing, and maintaining the software (i.e. productization) (Fitzgerald 2006). However, OSSNs consist of different types of vendors with different aims and different levels of technological and marketing knowledge. This heterogeneity is considered both an advantage and a challenge:

"The value of our association [name removed] *is fundamentally different for different groups: software vendors, service providers, universities..."* (C3-I2:software vendor, EIB)

"We share lots of goals such as promoting open source software and communicating its quality but when it comes to the business level, some of us are simply competitors." (C3-I1:software vendor, ERP)

(2) Immediate benefits through partnerships concerning the core business

The second issue illustrates the imperative to establish a win-win situation for the cooperating partners in order to ensure the willingness to collaborate. A win-win situation just arises if immediate benefits are generated, which refer to the companies' core business. In this regard, companies perceive a need for control that comprises the requirement to realize immediate benefits from cooperation.

While health care networks define goals of the cooperation and functions of the institutional actors via regulations and contracts, the goals of SME networks or OSSNs and the role of their cooperating firms are vaguely defined by contrast. As a result, the institutional actors of health care networks perceive immediate benefits from cooperation, whereas actors of SME networks or OSSNs lack of identifying direct benefits for their company. Hence position and role of each company has to be defined and/or represented within the network: The establishments of partnerships that allow for providing comprehensive customer solutions provide one possibility to position a company within the network.

Case 1 SME Networks: Although SME networks concentrate their activities on an information and knowledge transfer concerning non-competitive issues, the member firms are primarily interested in gaining short-term economical benefit from cooperation: From the executives' perception a "win-win" situation for all cooperating partners just arise if (1) partnerships of suppliers can be established within the network in order to create comprehensive business solutions for customers and (2) services are exchanged between the member firms. For this purpose they need relevant and useful information on the other firms as well as the possibility to represent their own company in order to communicate core business and services across the network.

"All companies just can gain money from the network if we all know: Who is doing what? Who provides which conditions? Is it profitable to buy from a member firm?" (C1-I1: executive)

"It would be useful if I could access on an address pool that contains information about the members. My company needs electricians, carpenters, tillers that I could find there. So it will be easier for me to provide broad services to my customers." (C1-I4: owner)

Case 2 Health Care Networks: On the basis of regulations and contractual arrangements, responsibilities and service delivery are defined within the supply chain. This causes a mutual state of dependencies between the service providers, which forces them to collaborate: Hospitals are dependent on physicians, since physicians admit their patients to them. Physicians are dependent on hospitals due to their limited possibilities for treatment and their responsibility for patient care after hospital stay. Hence cooperation generates a win-win situation for all institutional actors.

"I would become angry, if my patients are not coming back to me. If they stay in hospital, I would take my consequences. Everyone knows that the hospitals should not spoil their chances with the physicians. (C2-I3: gynecologist)

"The physicians know that they need the hospitals due to their limited possibilities." (C2-I2: clinician)

By means of arranging service delivery within a network, the actors obtain the possibility to provide complete patient solutions along the supply chain. As a result health care networks generate direct value when they act as basis for offering comprehensive services according to the patients' needs.

"We have to pull together to ensure a good treatment for our patients" (C2-I1: gynecologist)

"The physicians do not want the patients to stray somewhere. They want that I take responsibility for them." (C2-I5: clinician)

Case 3 Open Source Service Network: Member firms are concerned about the benefits de novo firms actually gain by becoming a member. The OSSN is in a recursive-circular situation because they need the fee of new members to grow and to pursue its aim but at the same time new members can only be attracted once the network provides a benefit to those firms.

"In order to attract new member, web site visitors directly must find potential benefits for themselves." (C3-I4: software vendor, Data Security)

"We will lose members (or at least their activity) if we cannot provide them the benefits we claim to provide" (C3-I3: software vendor, ERP)

(3) Request for regulations within collaboration

The last issue leads to the assumption that service networks require control by means of regulations that organize and coordinate the collaborative work. In this regard user involvement in service networks require a high level of control in order to preserve the company's interests.

Case 1 SME Networks: The SME network lacks of regulations with respect to the information and knowledge exchange, resulting in a high need of control on the executive level. Hence cooperation stagnates and employees are still kept away from cooperative activities. In addition to a general overview about the member structure of the network, the executives ask for network-wide policies that meet their information security needs and that arrange a goal-oriented exchange.

"The exchange of confidential information is delicate. How can I exert influence on this exchange and who ensures some safety arrangements so that I can be sure about my information?" (C1-I5: executive)

"Exchange might occur all-around the network and anybody wants to add her or his own knowledge. But the question is: Is this kind of exchange constructive, or does it require some more regulations?" (C1-I4: owner)

Case 2 Health Care Networks: Our second study shows that strong regulations of service delivery within the network minimize the need of control.

"I know that everything works well" (C2-I2: gynecologist)

Consequently we can state that regulations replace control. In turn, if the actors' needs and requirements for collaboration are not entirely met, the actors perceive disorganization within the network.

"The chief clinician – and not an assistant doctor who is coincidentally occupied in the hospital at that time - should be responsible for the first and final connection with the patient. Otherwise there is a high risk that too many different languages are spoken" (C2-I3: gynecologist)

"The oncologist, the gynecologist and the family doctor want to see the patient. But who will take the responsibility for the patient's aftercare? I have no influence on that!" (C1-I2: clinician)

Case 3 Open Source Service Network: Regulations pertaining to the investigated OSSN itself are in their infancies. Few representatives of member firms are heavily engaged while others only show up at yearly meetings. The engaged persons heavily influence the functioning of the association, but not necessarily the functioning of the service network. The problem for the OSSN primarily lies in the fact that Open Source implies participation and democracy, but when it comes to the delivery of services,

which basically is the only option to generate revenue in Open Source contexts, people tend to protect their shares. Thus, although the aim of OSSN is to conjointly offer solutions to professional customers, the single member firm aim to retain control over their products and services.

"Decisions concerning our products will entirely be made here!" (C3-I2: software vendor, EIB) [Here refers to the room where the interview was conducted; the firm's headquarter]

4 Implications for Technical Platform Design

Community innovation in service networks refers to the idea of using the creativity and innovative ideas of the community members. Service innovations thus emerge conjointly from institutional actors and users that are part of the network. Given this context, using Web 2.0 technologies implies consequently breaking down innovation processes to the network user level and thus systematically opening up a heterogeneous and broader knowledge base to idea generation. In this regard, we examined the relationship between institutional actors and their network users, as well as the level of control for cooperation and user participation within service networks by means of three case studies.

The main implication for technical platform design can be summarized as follows: Overcoming the asymmetrical relationship between institutional actors and network users requires transparency about the service network and its participants on the platform. Concurrently, the institutional actors' needs for control have to be met in order to preserve the company's interests. Transparency and control form a contradictory relationship. With more transparency, the level of control is reduced while more control impedes transparency. Service networks and their institutional members therefore are challenged by the question of how to pursue control while enabling transparency. According to this statement we provide three general requirements for the design of technical (Web 2.0-based) platforms that focus on user participation in online communities:

(1) Transparency to overcome asymmetrical relationships between institutional actors and users

First of all transparency has to be ensured on the platform to overcome the asymmetrical relationship between institutional actors and network users. Transparency can be defined as availability of information about network structures, processes and actors. Given this context, the platform should provide information about the service network, its cooperating companies (company profiles) and network users (user profiles).

Information availability has to be ensured by means of providing information as well as providing access to this information on the platform. Thereby the provision of information assumes the willingness of the institutional actors to share information across the organizational network. Concerning the need for regulations that organize the collaborative work, the willingness for sharing information might depend on policies that regulate the access to it.

(2) Mission statements to communicate immediate benefits across the network

Cooperation requires a mission statement that both communicates goals and responsibilities across the network and directly refers to the company goals of the cooperating firms. According to Pearse II (1982, p. 16) a mission statement defines *"[…] the fundamental, unique purpose that sets a business apart from other firms of its type and identifies the scope of the business's operations in product and market terms"*. Thus a mission statement identifies the scope of the network's business in order to determine its purpose and benefits for the participating firms. In addition to the mission statement, further information about the companies has to be provided on the platform that allow for defining the position and role of each company within the service network. This information should provide an overview about the companies' business, branches and services.

(3) Having a man on the inside to regulate cooperative work

The need for control requires technical applications that coordinate and regulate both the access to the platform and the information and knowledge exchange (e.g. defined procedures for registration).

According to Ouchi's (1979) framework, in the scenario of user involvement in service networks, output is hardly measurable and knowledge about the transformation process incomplete. Thus, the remaining option is clan control. In turn, clan control only occurs if the level of divergent interests is minimized by, for example, common mission statements. Furthermore, firms that intend to protect their commercial interests should assign own employees to actively work in online communities as a "man on the inside" (Dahlander and Wallin 2006).

5 Conclusion

Since actual research on user involvement in inter- and cross organizational innovation processes has focused on the relations between firms and customer/consumers so far, the aim of our paper was to examine both the relationship between institutional actors of service networks and their network users as well as the level of control for cooperation and user participation within these networks.

Therefore three cases of service networks were chosen that allowed for (1) identifying general issues concerning the participation of network users in cooperation and (2) determining the expectations from integrating users with respect to control. For each case we conducted in depth-qualitative interviews with representatives of these networks in order to find out their similarities and differences.

The interviews yielded that (1) each service network maintains an asymmetrical relationship between their institutional actors and network users and (2) the institutional actors perceive a high need for control within cooperation. The need for control comprises both the requirement to realize immediate benefits from cooperation as well as the request for regulations that organize and coordinate the collaborative work. Our results lead to recommendations to service network managers and suggestions of technical platform design that intends to support user participation within service networks. These recommendations encompass (1) transparency, (2) the formulation of a mission statement and (3) "a man on the insight" to overcome the asymmetrical relationships between institutional actors and network users and to meet the requirements for control.

References

Anderson, E. and Oliver, R. (1987). Perspectives on behavior-based versus output-based salesforce control systems. Journal of Marketing 51(4), 76-88.

Baldwin, C.; Hienerth, C. and Von Hippel, E. (2006). How user innovations become commercial products: A theoretical investigation and case study. Research Policy 35(9), 1291-1313.

Berry, L.; Shankar, V.; Parish, J.T.; Cadwallader, S. and Dotzel, T. (2006). Creating new markets through service innovation. Harvard Business Review, 47(2), 56-63.

Bogers, M.; Afuah, A. and Bastian, B. (2010). Users as innovators: A review, critique, and future research directions. Journal of Management, 36(4), 857-875.

Chesbrough, H. (2011). Open Service Innovation. Jossey-Boss, San Francisco, CA.

Dahlander, L. and Wallin, M (2006). A man on the inside: Unlocking communities as complementary assets. Research Policy, 35, 1243-1259.

Dahlander, L. and O'Mahony (2011). Progressing to the center: Coordinating project work. Organization Science, 22(4), 961-979.

Eisenhardt, K. (1989). Building Theory from Case Study Research. Academy of Management Review, 14(4), 532-550.

Feller, J.; Finnegan, P.; Fitzgerald, B. and Hayes, J. (2008). From peer production to productization: A study of socially enabled business exchanges in open source service networks. Information Systems Research, 19 (4), 475-493.

Fitzgerald, B. (2006). The transformation of open source software. MIS Quarterly 30(3) 587–598.

Grace, A.; Finnegan, P. and Butler, T. (2008). Service co-creation with the customer: The role of information systems. Proceedings of the 16th European Conference on Information Systems (ECIS), Galway, Ireland.
Henkel, J. and von Hippel, E. (2005). Welfare implications of user innovation. *Journal of Technology Transfer,* 30, 73-87.
Herzlinger, R. (2006). Why Innovation in Health Care is so Hard. Harvard Business Review, May 2006.
Hutter, K.; Hautz, J.; Füller, J.; Mueller, J. and Matzler, K. (2011). Communitition: The tension between competition and collaboration in community-based design contests. Creativity and Innovation Management 20(1), 3-21.
Jeppesen, L.B. and Frederiksen, L. (2006). Why do users contribute to firm-hosted user communities? The case of computer-controlled music instruments. Organization Science*,* 17, 45-63.
Koza, M.P. and Lewin, A.Y. (1999). The Coevolution of Network Alliances: A Longitudinal Analysis of an InternationalProfessional Service Network. Organization Science, 10(5), 638-653
Länsisalmi, H.; Kivimäki, M.; Aalto, P. and Ruoranen, R. (2006). Innovation in Healthcare: A Systematic Review of Recent Research. Nursing Science Quarterly 19(1), 66-72.
Lakhani, K. and Von Hippel, E. (2003). How open source software works: Free user-to-user assistance. Research Policy 32, 923-943.
Ogawa, S. and Piller, F. T. (2006). Reducing the risks of new product development. MIT Sloan Management Review*,* 47(2), 65-71.
Oliveira, P. and Von Hippel, E. (2011). Users as service innovators: The case of banking services, Research Policy 40(6), 806-818.
Ouchi, W. and Maguire, M. (1975). Organizational control: Two functions, Administrative Science Quarterly 20, 559-569.
Ouchi, W. (1979). Conceptual Framework for the Design of Organizational Control Mechanisms. Management Science, 25(9), 833-848.
O'Hern, M. and Rindfleisch, A. (2010). Customer co-creation: A typology and research agenda, Review of Marketing Research 6, 84-106.
O'Mahony, S. and Bechky, B. (2008). Boundary organizations: Enabling collaboration between unexpected allies. Administrative Science Quarterly 53, 422-459.
Pearce, J.A. II. (1982). The Company Mission as a Strategic Goal. Sloan Management Review, Spring 1982, 15-24.
Nambisan, P. and Nambisan, S. (2009). Models of consumer value co-creation in health care, Health Care Management Review 34(4), 344-354.
Schaarschmidt, M.; Von Kortzfleisch, H.; Valcárcel, S. and Lindermann, N. (2011). Web 2.0 Enabled Employee Collaboration in SME Networks: A CEO's Perspective. Proceedings of the 19th European Conference on Information Systems (ECIS), June 9-11, 2011, Helsinki, Finland.
Schultze, U. and Avital, M. (2011). Designing interviews to generate rich data for information systems research, Information and Organization, 21(1), 1-16.
Shackley, P. and Ryan, M. (1994). What is the Role of the Consumer in Health Care? Journal of Social Policy, 23(4), 517-541.
Shah, S. (2000). Sources and patterns of innovation in a consumer products field: Innovations in sporting equipment. MIT Sloan School of Management, Working Paper No. 4105.
Shah, S. and Tripsas, M. (2007). The accidental entrepreneur: The emergent and collective process of user entrepreneurship. Strategic Entrepreneurship Journal 1, 123-140.
Von Hippel, E. (1988). Sources of Innovation. MIT Press, Cambridge, MA.
Wasko, M. and Faraj, S. (2005). Why should I share? Examining social software and knowledge contribution in electronic networks of practice. MIS Quarterly 29, 35-57.
West, J. and Lakhani, K. (2008): Getting Clear About Communities in Open Innovation. Industry and Innovation, 15(2), 223-231.
Yin, R. K. (2003): "Case Study Research – Design and Methods". Thousand Oaks: Sage Publications.