ARE WE IN THIS TOGETHER? EXPLORING PRIVATE-COLLECTIVE KNOWLEDGE COMMUNITIES

Research-in-Progress

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Abstract

A growing trend within the literature on value creation is the introduction of private-collective knowledge communities, which create opportunities for organizations to leverage knowledge. In these communities, participants privately invest in a project's success by freely revealing and contributing their personal resources such as expertise and time to a public good. Firms then use these public goods as the basis for their own product offering. In this paper, we focus on describing the nature of the relationships that exist within private-collective knowledge communities and subsequently develop a framework for how researchers and practitioners can understand the organization-user dynamics found within these communities. As such, our research questions are as follows: What factors impact the organization-user dynamics in private-collective knowledge communities and how do these factors affect the nature of the relationships within these communities? We conclude with initial results supporting our model and discuss future steps, limitations, and contributions.

Keywords: online communities, open source software, public-collective knowledge communities, value creation, relational dynamics

Introduction

Today as information and communication technologies (ICTs), and in particular Web 2.0, continue to penetrate society, the number of organizations developing co-creation activities is rapidly increasing. For example, a number of organizations have developed user innovation communities or electronic social environments that allow globally distributed customers to share their expertise and knowledge with one another and the organization by commenting on existing products and services and proposing new innovations (Dahlander and Wallin 2006; Di Gangi and Wasko 2009b). This research aligns with the notion that the future of competition lies in new approaches to value creation (Prahalad and Ramaswamy 2004a; Prahalad and Ramaswamy 2004b; Prahalad and Ramaswamy 2004c). Successful firms will be those that are able to attract and engage individuals to co-create value through the individual's experiences, technical expertise, and needs so that mutual benefits for both the organization and the individual may occur (Di Gangi and Wasko 2009a). Essentially, new forms of value creation that rely on substantial engagement and contribution of customers will result in a greater level of interaction and relationship building than prior models.

A growing trend within this literature is the introduction of private-collective knowledge communities that create opportunities for organizations to leverage this valued source of knowledge (von Hippel and von Krogh 2006). In these communities, participants privately invest in a project's success by freely revealing and contributing their personal resources such as expertise and time to a public good (von Hippel and von Krogh 2006). Firms then use this contribution as the basis for their own product offering.In recent years, the knowledge-based view (KBV) (Conner and Prahalad 1996), has received increased attention from scholars that believe firm-specific knowledge enhances the firm's ability to more efficiently coordinate activities through internal governance than through markets. Thus, the costs of communication and coordination are argued to be the primary metric influencing boundary decisions of a firm, and it is this firm-specific knowledge that is the basis of competitive advantage. Yet how do we make sense of user-innovation and private-collective communities in light of the knowledge-based view of the firm? First, these communities represent a distinct type of social structure. Individuals possess no direct or official relationship with a firm and as a result operate outside of its traditional boundaries. As a result, an organization must develop new techniques for managing this potentially vast resource in order to sustain the community's actions and benefits. Second, the source of the knowledge that is created in these communities resides outside the firm and thus may be subject to imitation by competitors. For instance, object-oriented software applications create the ability to reuse code from one application to the next making the developments in one community potentially beneficially to another that may be outside the organization's interests. Finally, the ability to transfer knowledge between individuals in the community and the firm may be hampered as there may not be a shared language and understanding with individuals within the firm's boundaries (Kogut and Zander 1992). As such, tensions exist in the interaction space between the user and the firm – "where the co-creation experience occurs, where individuals exercise choice, and where value is co-created" (Prahalad and Ramaswamy 2004c). The tension between the goals of the users and the ones of the organisation creates a potential failure point. If not managed successfully, the community will become unsustainable and the value lost to other communities and potential competitors.

Hence, in this paper, we focus on describing the nature of the relationships that exist within private-collective knowledge communities and subsequently develop a framework for how researchers and practitioners can understand the co-creation activities found within these communities. We define organisation-user dynamics as the social process through which external individuals interact and exchange ideas, knowledge and resources with an organization to produce valuable goods (Dahlander and Magnusson 2008; Dahlander and Wallin 2006). As such, our research questions are as follows: What factors impact the organization-user dynamics in private-collective knowledge communities and how do these factors affect the nature of the relationships within these communities?

Evolution of Online Communities

The growth of ICTs has led researchers to explore how users can become a central actor within an organization's innovation and collaboration practices (von Hippel 2001; 2005; Wagner and Majchrzak 2006-7). The largest area of research to date has been within the software industry where user-driven innovation can be demonstrated by the proliferation of Free Open Source Software (FOSS) communities.

Traditionally, this literature distinguishes between two distinct business model types: the private and the collective. The private business model is based on an organization receiving support from private investors who foresee a potential from the capital invested. Conversely, the collective action model is concerned with how public goods, characterized by non-excludability and cooperation, can support a greater good regardless of personal gain (von Hippel and von Krogh 2003).

A private-collective model is characterized by a blending of the models where private parties investing their own resources, but eliminating any conditions on rights of use and personal ownership over the good produced (Dahlander and Magnusson 2008). According to Dahlander & Wallin (2006), the "user community can be seen as a complementary asset, which can be leveraged and combined with the internal assets to deliver competitive solutions". The individuals' engagement in the community is tied to the opportunity of attaining positive benefits (Lerner and Tirole 2002), which otherwise can lead to termination in the participation. Current research has suggested that organizations that engage directly with their environment must manage the relational dynamic to effectively co-create value differently than previous models (Di Gangi et al. 2010).

Consequently, private-collective knowledge communities present a unique challenge to both organizations and individuals. Specifically, which conditions from each of the originating models, private and collective, remain impactful when blended together? How does the philosophical belief in a public goods-based community contrast with the private, financial interests of an organization? It is these questions that drive the need to conduct an abductive theory approach (Dubois and Gadde 2002) to understanding the private-collective knowledge community model. In the next section, we outline the methodology used to develop a framework for private-collective knowledge communities.

Methodology

Based on our initial questions and the need for research to understand private-collective knowledge communities, we selected an abductive theory approach. According to Dubois and Gadde (2002) the abductive theory approach is particularly suitable when studying a new phenomenon where one wants to be open to all explanations for it. A cyclical process of checking and rechecking the phenomenon takes place in order to widen and modify the explanations. The approach allows us to enter into the current contextual environment without any pre-conceived notions as to how the interested parties interact, as it implies a stronger reliance on theory than is suggested by a pure inductive logic.

Research Setting

eZ Systems (eZ) was established in 1999 and has grown from being a small company to the world's largest Open Source Content Management software company in terms of downloads. The product, eZ Publish, has been downloaded more than 2.5 million times and has recently passed the 200 thousand installations mark. With customers such as the U.S. Navy, the Financial Times, and T-Mobile, eZ specializes in a content management solution relying on open source software. The development process at eZ is based on a combination of eZ employing developers and contributions from the user community, eZ Publish. Currently, the eZ Publish community has over 41,000 members that engage by testing, providing feedback, and developing translations and extensions for the eZ Publish software.

eZ's business model is based on a philosophy of openness, sharing, and innovation with an additional intention of generating profit through support and an enterprise version that is reliable for commercial use. The public goods component lies within the community version, which possesses the newest additions to the kernel, but with the risk of less reliability, incomplete documentation, and the lack of official user support. With the eZ ecosystem, eZ claims that they have the power of a huge company without the overhead, lack of speed, and high cost of a traditional large corporation. The users risk less compared to a pure open source software model since the product is delivered with total responsibility from eZ. This makes eZ a unique case since they combine the open source software model with the enterprise approach of taking responsibility for the products (Yin 2003).

Research Phases

Our approach to defining the framework used within the private-collective knowledge community was twofold. First, we conducted an initial qualitative test using an open-ended questionnaire. Based on this initial feedback, the authors identified potential tension points and a framework of the key actors found

within the private-collective knowledge community. The second phase of the study was to explore the relational dynamics among the key actors through the use of semi-structured interviews.

Questionnaire Findings

The questionnaire included items asking respondents to discuss their perceptions about eZ and open source software, the communication structure within the eZ Publish Community, and the factors that motivate user collaboration with eZ Systems. A total of eighteen respondents completed the questionnaire. Each author reviewed the responses independently to identify central themes and areas of tension. Following this analysis, the research team met to discuss overlapping areas which resulted in the identification of three factors: 1) decision-making process, 2) communication dynamics, and 3) member development.

The first factor focuses on the nature of the community structure and the decision-making process used to guide eZ Systems in its decisions for what components would be included in the kernel and the subsequent enterprise edition of the eZ Publish software. We define decision-making as the method in which actions taken by the organization affect the product of the community (e.g., the eZ Publish application). In comparison to an open source software community where decisions are made through core developer boards and democratic actions, eZ Publish possessed a focal actor, eZ Systems, which controlled the kernel and the components included.[1] Consequently, the first tension point in the relational dynamics of the private-collective knowledge community model appears as demonstrated by the following quote. "… It's harder to give confidence to an open-source community driven by an editor than a community driven by a democratic or autocratic authority, because the editor of the CMS can always be suspected to promote it's (sic) own interest, and not the community one. I often ask myself: 'What *long-term guarantees* eZ Systems give to the eZ Community?'"

The second factor explores the communication dynamics that influences how the community functions and learns about the sponsoring organization's intentions. We define communication dynamics as the interactions among the main actors within the community that impact how an individual perceives the nature of the relationship between the community and the sponsoring organization. Initial feedback suggests that community members identify two types of organizational actors operating within the community – 1) organizational agents working on behalf of eZ that are embedded within the community (e.g., community managers) and 2) eZ the company as a distinct entity. Additionally, community members can be broken into two types of actors as well – 1) community members with an interest in eZ Publish and 2) employees of other organizations (e.g., eZ Partners) that are strategically invested in the eZ Publish platform and its continued success. The results of this question draw attention to the second potential tension point – the serving of multiple masters. As an organization, eZ Systems has an obligation to respond to its partners requests for software updates, fixes, and overall strategic direction; however, as an open source software company, eZ also is obligated to listen and respond to community members regardless of organizational affiliation. Furthermore, eZ Systems faces the difficult challenge of sharing information with multiple actors that require varying levels of detail in the amount of information disclosed.

The final factor indicated a desire for member development. As an open source software community, community members are provided with the opportunity to showcase their expertise and potentially attract businesses for employment purposes as well as further develop their skills in a collaborative environment. However, as a profit-oriented business, the organization is faced with the difficult challenge of balancing the need to enhance its community member's status (potentially causing this expertise to withdraw from the community due to increased demand from businesses employing them based on their displayed skills) and maintaining a core level of expertise to maintain the community's development.

Based on the results presented in this questionnaire, the authors identified a model of relational dynamics based on Folger's triangular model of fairness (Folger 2010). Folger's (2010) argues that three key actors can affect an individual's perceptions within an environment: 1) users (i.e., community members), 2)

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[1] During the course of this study, eZ Systems launched a Community Board designed to incorporate user feedback and a community voice into the decision-making process. This is discussed in more detail in subsequent sections of this manuscript.

organizational agents (i.e., employees embedded within the community), and 3) the organization. However, the initial results of this study indicate a need to refine and extend Folger's model via the introduction of third-party organizational agents (i.e., partners) and moving the organization into a more central role that operates both internally and externally to the community (see Figure 1). Please note that the factors affecting the relationships portion of the model will be discussed in further detail below from each actor's perspective.

Figure 1. Pyramid Model of relational dynamics and factors affecting the relationships
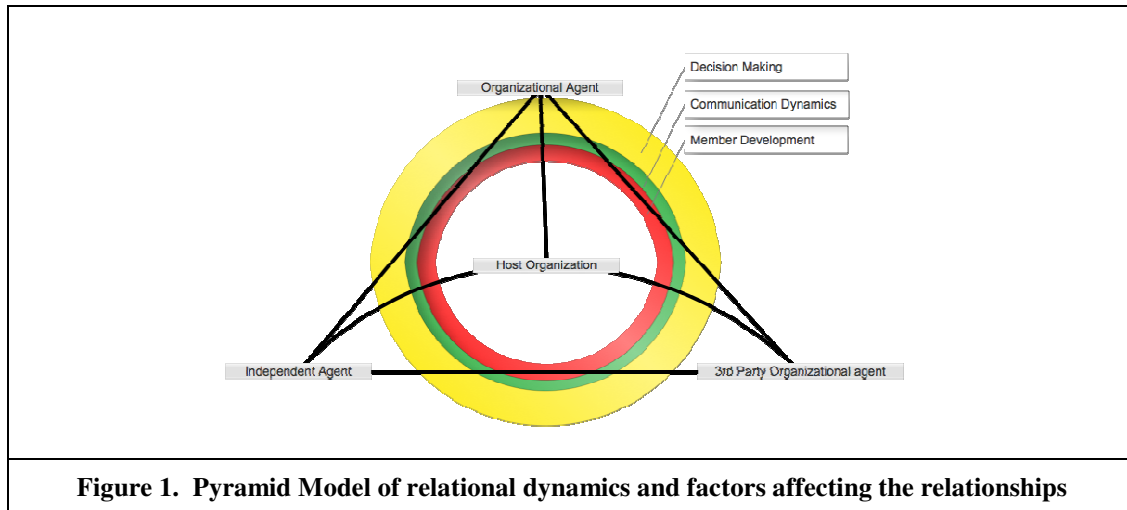
Semi-structured Interview Findings

Subjects were chosen based on the initial framework identified through the questionnaire that indicated a need to understand four actor perspectives – eZ Systems, eZ employees embedded within the community, 3rd part organizational agents, and traditional community members. At a minimum, three individuals from each category were interviewed with varying levels of engagement intensity (frequent to passing engagement). A total of sixteen interviews have been conducted to date. The authors collaborated with the Community Director of the eZ Publish Community to identify potential subjects. An interview guide covering each of the dimensions discussed above as well as additional questions to elicit potentially hidden underlying dynamics and tension points was created and sent to each interviewee prior to being interviewed. Following each interview, the researcher tasked with the interview asked the interviewee to recommend an additional subject to be interviewed creating a snowballing effect for our sample.

eZ Systems

Based on our initial dynamics, decision-making primarily relates to the decisions regarding the direction of the development of the eZ Publish software. eZ Systems fully controls the kernel and is primarily responsible for writing code. Recently, a Community Board was created in early 2011 which consists of people from eZ and the community. The primary reason for establishing the Community Board was for eZ Systems to bridge the gap between private and the open source development models giving the community greater authority over development decisions. However, eZ still sees its role as the directing agent within the eZ ecosystem in order to maintain a sense of balance between the private and the collective philosophies inherent within the community and the business model. As one of the founders of eZ states, "This is a challenge because as a community they want as much as possible, but if you give them the little finger, they take the whole hand – they want more when you give them something, and if they don't get something, then they get irritated. We have to educate them on this...we are a company and not a charity, so we have to make money – but this is a challenge and you have to differentiate between what you give away for free and what you sell."

The eZ ecosystem was built on the core values of open innovation: openness, sharing, innovation. Communication in the eZ ecosystem is characterized by people generally giving back to the community. However, there is a tension inherent in the private-collective model which the founder suggests is the basis of power in these two sub-organizations (i.e., eZ and the community). "It is a challenge to know

what should be kept within the company and what can be provided to the community." "If you take a traditional proprietary big corporation, who are the heroes? Those who know the most – and how do they keep their power? By making sure that all information goes through them. But in an open source community, the one with the most power is the one who shares the most knowledge since those who share the most obtain the most visibility and thus can acquire a great standing in the community. But we have to create a culture to handle this." Currently, eZ Systems is of the opinion that its one-way communication is working quite well (e.g., release announcements, information on ecosystem events). However, as the Chief Technology Officer states, the lack of communication may be due to the relatively low engagement of eZ engineers and consultants in the community because "It is not easy for the community to see what we are doing or prioritizing."

In addition to managing existing resources, eZ is also focused on attracting members to the community as opposed to facilitating their development. In this area, the organization sees it as the community's responsibility to oversee member development while it provides support and attracts new talent to the community. For instance, in May 2011, eZ launched a new initiative, the R&D Partnership, to facilitate individual members or small shop consultancy firms to sell their eZ software extensions to the market. The main idea is that eZ will handle the commercialization and support for community members selling their extensions through the R&D partnership. Taken collectively, the three dimensions discussed in the open-ended questionnaire find initial support within the perspective of eZ Systems with one modification – the role of eZ Systems is to attract new members rather than develop existing members which would be under the responsibility of the community.

eZ employees embedded within community. Among employees embedded within the community there is a strong belief that decisions for software contributions remain an internal process; however, eZ's primary goal is to remain a guide and provide the roadmap for the community to follow. As one employee states it is important to have structure as a company because it guarantees its products to its customers. The community is, in principle, able to contribute almost everything when it comes to developing the software, as long as they comply with the roadmap and the guidelines for contributing. The employees also agree that it is of utmost importance that the community members feel that they have a say on a daily basis. While taking into account all community member opinions would be unrealistic, the Community Board is regarded as an ideal vehicle in facilitating the involvement of the community in different decisions. The community can then be informed of the eZ's development efforts while the board can serve as a voice of the market.

Analyzing the communication dynamics related to the eZ employees being embedded within the community indicates that employees of eZ are concerned with communicating the core philosophy of the company when engaging within the community. This can be explained by the interdependent relationship that exists between the employees and the community. On the one hand, the employees of eZ are dependent on the feedback and ideas from the community in order to be able to develop software at the speed and a sufficient level of quality. On the other hand, the community is depending on the products from eZ to offer the products and services they provide to their customers. When help is needed, the community members are relying on each other as well as the input from eZ employees. However, concern over what can be shared and how an eZ employee's comments may be taken by the community (e.g., taken as an official response from eZ versus informal comment from a developer) may cause some employees to hesitate when communicating with the community.

The former CEO highlights that being part of the community as an employee of eZ is based on personal engagement with community members as individuals not as eZ Syste4ms. The other developers agree on this statement, but they also admit that they do not interact that much with the community. Naturally, some are more active than others, but there has been limited dialogue between the internal developers and the community. Time constraints, information overload, and the tension of what should be shared and what should not be shared, were identified as the main reasons for the lack of interaction. When being engaged with community members, the internal developers are feeling that they are distracted from the development tasks they are there to solve. There can also be too many questions to answer and when answered, their responses may be seen as a formal response on behalf of eZ, the organization.

In terms of development, developer employees indicated they interact with those who have a high technical skill level and are employed by partner firms. The contributions they receive are mainly from developers who are contributing as part of their work. The recognition they receive is basically based on

their ability to develop high quality software. As a result, member development is not as large of a factor for eZ developers engaging with 3rd party organizational agents.

Third-party Organizational Agents

While eZ Publish is an open source software application, its development resides within a tightly controlled decision-making model. Namely, eZ Systems controls the components that are included in the enterprise addition which partner organizations utilize when implementing a solution for its customers. According to one 3rd party organizational agent, the eZ Publish Community participants have counterbalanced this limitation by externalizing community activities. Essentially, the community accepts a marginal role within the decision-making process because "we really just kinda defer to eZ systems too much on folk for maintenance activities of community for balancing and everything else in community". Within the community, members contribute using the principles of open source software. However, several members expressed concern over the nature of communication between eZ and the community – specifically the 3rd party organizations that affiliate themselves with eZ. For instance, one agent indicated a need for eZ to utilize a more active communication strategy and implement more transparent information sharing policies for topics highly debated within the community since "we don't have any real information are they going to continue like this, what is the politic they have for their company.. can we rely on the systems or not"

Agents expressed that the communication strategies currently used "have a good frequency on a daily bases and the quality of it is good" but they lack technical depth. In particular, as a progressive model that operates through the use of ICTs, eZ Publish has members distributed throughout the world which causes some coordination issues in terms of communicating across cultures. For instance, one agent stated that the "US is different, thin, and an ocean away and we have got a long way to go – hard to feel as much a part of the core. I would think that in Europe would be different would feel more part of the product, can just pick up the phone and reach someone because of the same time, and it has been around a lot longer". This friction is also heightened by the wide availability of activities across Europe, where eZ is very active in bringing people together physically. Conferences provide the opportunity for incidental learning and bonding to occur between agents and employees which may disadvantage agents that cannot attend due to travel distance and cost.

Additionally, several agents suggest that eZ should make an effort in trying to make the contributions made by community members more visible to boost member development (e.g., highlight new extensions and community awards). In particular, the availability of training was vital to new users because having "more content for beginners, more tutorials, videos and demos of what eZ publish can do in an easy way" lowers the entry barrier for entering the community. Taken collectively, the observations from the interviews of 3rd party organizational agents indicate support for the three dynamics found within the relational dynamics model.

Community Members

Where the three previous groups are categorized based on exclusionary attributes, community members are individuals that are independent of any particular affiliation. Members can be open source enthusiasts, entrepreneurs, and independent partners with no formal affiliation with eZ Systems (i.e., no financial arrangement with eZ). As a result, opinions and perceptions of the dynamics that exist within eZ Publish vary widely. For instance, the decision-making aspect of the model outlined previously received comments from both sides of the continuum. Individuals demonstrated an understanding of eZ's perspective that it possesses a dominant controlling role within the community, due to its financial support. While others indicated strong believe in the Community Board that would hopefully foster a democratic decision-making process and allow community members to play in leveling up field. As one member indicates that it "would be fair for those who are active participants in building the product, and the Community Board is a good thing, if people in the community who take care of the product, then they should be able to influence development and I think it is very important that this is a high motivation factor for any community member – ability to have influence." This indicates that community members have personal interests similar to 3rd party organizational agents and eZ for how the software develops and would like to be involved in the shaping the evolution of the software. However, other members indicate that "in the end it is the company itself that decides what is happening and even if they show to be more open this is not really happening, this is an outside observation." Essentially, the community

perceives its decision-making ability as being tied to the main sponsor -eZ systems- and not the traditional process used in open-source software communities.

Additionally, community members also expressed an interest in the nature of communication that occurs among the different members. For instance, several members indicate that the Community Director is "quite effective, works out well, provides sensible information, takes care of people, responds to tweets," which demonstrates an effective communication strategy for independent individuals operating outside of a partner organization. However, communication beyond the Community Director is lacking overall. Several members indicate that "there was almost no feedback on issues." In fact, when an issue arises that is either vague or not managed well, community members indicate a general displeasure with the approach taken by eZ. Specifically, the PR department enters the community and apologizes for the issue but typically does not follow through beyond the apology. One member hypothesized that this is because the "marketing people created the concept of community management, because behind community management there are users, the blogs, the customers, and when the community is happy, you have more chances to get happy customers. That's it." This suggests that there are currently two approaches to communication within the eZ Publish Community – the approach taken by embedded employees which is highly successful and the approach taken by non-embedded employees that draws criticism and concern from community members.

The final area of concern expressed by community members deals with the overall member development for members. Primarily, this area focuses on recognition and incentives that can be provided to foster increased member engagement. For instance, several users expressed an interest in expanding the current awards program to recognize not only a global best contributor, but several contributors (possibly from a variety of regions) and groups of individuals that work together as an effective team to "reward people for creatively cool ideas or give them more influence." Additionally, development opportunities that will help transition newbie users into experienced developers (such as documentation, tutorials, and learning materials) was considered to be an important factor to community members. As one member states, "one important thing is the teaching relationship – mentor- mentee- relationship, younger people helped by older, more experienced," indicating that the development efforts should come from within the community aligning with eZ's perspective on member development. Taken collectively, community members support the perspective of the three key dimensions to the relational dynamics supporting the initial observations found within the open-ended questionnaire.

Final Observations

Overall, initial support is found for a pyramid model of relational dynamics (Figure 1). Each key actor within the private-collective community identified decision-making, communication dynamics, and member development concerns as important factors. On many occasions, multiple actors agreed on overall responsibilities (e.g., member development views by eZ and community members). However, there also appears to be instances where each actor must balance the needs of the others to effectively maintain the sustainability of the community. For instance, one community member commented on the difficult position of the Community Director as both an employee of eZ and a community member. "<NAME> has a difficult position, I would say. He is actually the bridge, well, he tries to… to be the bridge between eZ Systems as a company, and the community. And… you should know that sometimes it's not that easy." Based on the comments from interviewees, both employees and external members, the Community Director is largely seen as a successful bridge. However, each of the comments about why the Community Director is a success is based on personal qualities, behaviors, and/or approaches suggesting that the outcomes currently experiences may not be replicated with a different employee in this position. As a result, identifying perceptions about what is considered an equitable balance between different parties' interests remains to be explored. The research presented here is an initial analysis of a specific private-collective knowledge community. The next steps currently underway by the authors explore how these factors influence the sustained engagement of each actor within the community.

Conclusion

In conclusion, our task was to understand what factors impact the organization-user dynamics in private-collective knowledge communities where tension exists between the goals of the users and the

organisation. To fulfill our task, we relied on KBV and extended the design of Folger's triangular model of fairness (Folger, 2010) that identified three key actors to a pyramid of four key actors, each of which has its own perceptions of fairness: 1) users (i.e., community members), 2) organizational agents (i.e., employees embedded within the community working for the organization – in this case eZ), 3) the organization (i.e., eZ), and 4) employees of the organization (i.e., eZ) embedded in the community. Three areas of tension emerged that were common amongst all relationships between the different actors: communication dynamics, decision-making, and member development.

Our results have implications for firms or organizations interested in building a sustainable private-collective community for value co-creation. Applying the pyramid model with a focus on each of the three tension areas will enable practitioners to understand the needs and interests of each of the key actors as well as the overall complexity of the relationships that must be taken into consideration when designing or running a private-collective community. In terms of limitations of this study the generalizability of results represent one concern. It is difficult to assess how representative our findings are to other private-collective communities. Further research should focus on identifying and researching similar communities for generalizability purposes. It would also strengthen the study to carry out content analysis of messages shared by community to further enrich our analysis. Our findings suggest that private-collective communities share similarities with other inter-organizational organizations such as private-public partnerships, partnerships, alliances and joint ventures. These similarities include conflicting underlying goals, inter-organizational trust, and conflict resolution. Thus, future research should compare private-collective communities with other inter-organizational bodies.

In conclusion, this research sought to understand how organizations can strike a balance with a community of individuals external to its formal organizational boundaries to co-create value via knowledge contributions. To co-create value under this model, organizations must understand how to develop a sustainable yet complex web of relationships such that the outcomes of the model are mutually beneficial to all parties. Failure to do so can result in tension and disengagement by community members and may lead to the question – will your community still exist?

Acknowledgements

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