

A Model for Analyzing Online Communities

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ABSTRACT

We present a model for understanding and analyzing participation in social online services and online communities. The model is based on earlier research literature, and contains community elements such as policy, privacy, trust, motivation, and roles that influence and are influenced by participation activities. To further specify the model, we conducted a qualitative study consisting of interviews on participation in online communities. Subsequently, we organized an online survey that aimed at validating the elements presented in the model and the ways the elements influence one another. In addition to supporting the validity of the model, the findings present a fresh overview of the respondents' perceptions of participation in social online services and online communities. The model can be used in future studies; for example, to conduct statistical analyses of participation in online communities. Furthermore, the model can be useful for community organizers when starting to design a social online service that supports online community activities.

Keywords: Online communities, social online services, participation, design, model

1. INTRODUCTION

In recent years, social online services have become exceedingly popular. What is characteristic of such services is that the activities people do – ranging from creating and discussing content to playing games – are primarily social; in other words, they are performed together and influenced by others. Furthermore, such services may have specific features for social networking, such as constructing a public profile page, defining lists of users with whom a user shares a connection, and developing hyperlinked user profiles that enable browsing through the networks of connected people [4]. A fundamental outcome of such social activities is that communities can be formed in these online services. The benefits of online communities for business have been discussed, for example, by Hagel and Armstrong [6], and Antikainen [1].

In online communities, computer-mediated systems, such as social online services, allow people to establish and maintain personal relationships within the context of shared values and beliefs, or while pursuing a common goal. A social online service may be the “gathering place” for several online communities, but a casual user of the service is not necessarily a member of any of those communities. Thus, a social online service and an online community are clearly two separate things.

Community membership is perceived by each person on the basis of how closely he or she identifies with the other people, his or her shared values and beliefs, or the common activities and goals. From a practical point of view, community members are also service users. As members in different online communities pursue different goals (and with non-member users contributing more vaguely), the participation activities are multi-faceted. There is a need for a model that presents a systematic classification on the activities people do in the online communities and social online services, as well as the factors that influence these activities.

This paper elaborates on our earlier model of understanding online communities [2] by exploring participation in online communities and social online services in more detail. The model defines a set of interrelated elements that form an online community. In addition to presenting a holistic view, the model allows us to focus on any set of elements when analyzing online communities.

This paper presents a revised version of the model, discusses the validation efforts of the model, and gives some examples of using the model for designing social online services that cater to online communities.

We conducted a qualitative study to gain insight on how users of such social online services as Facebook and World of Warcraft and various online forums perceived their participation and what elements were considered to influence it. The model was used as the basis for a set of semi-structured interviews. Further, we arranged an online survey to explore elements of the model that were not discussed in the interviews. The intent with these two studies was also to evaluate the usefulness of the model in practice, and gain insight on whether it should be

revised or extended. We were also interested in learning about the experience of the respondents who participated in social online services and online communities.

This paper is organized as follows. In Section 2, we define the model on the basis of previous research literature. Thus, Section 2 functions also as a condensed discussion on related research. For a more complete review of research done in the field of online communities, see Äkkinen [15]. The qualitative study and its findings are presented in Section 3, and the quantitative study in Section 4. The findings are discussed in Section 5, followed by conclusions in Section 6.

2. THE MODEL

We have developed a holistic model for understanding the factors that influence participation in online communities. With some adaptation (explained below), the model can also be used to examine participation in online communities and social online services in general. Figures 1 and 2 present the model the way it has been validated and revised through the studies discussed in this paper. For comparison, the initial version of the model is presented in an earlier publication [2]. The model defines a number of elements (such as member, community organizers, privacy, trust) that are interconnected in various ways. The relationships or interconnection types between the elements are shown in the arrows of Figure 1; for instance, the privacy element influences participation, but participation also influences privacy aspects. Next, the elements are defined in more detail.

2.1. An Overview of the Model

As defined by Preece [10], an online community consists of people, who interact as they pursue to satisfy their needs; e.g., to obtain information or to experience feelings of belonging. These people form the *member* element of our model. Each member possesses *social capital*, including the shared knowledge, skills, understanding, and offers of help required to pursue the common interest [11]. As pointed out earlier, a user of a social online service is not necessarily a member of a community active in that service. Such a person is referred to in the model as a *user*.

Community organizers [6] are the people who maintain, sometimes for profit, the *social online service* atop which an online community forms. Community organizers may support sociability, for example, by defining a suitable policy, and by direct actions such as steering the discussions on-topic, encouraging reciprocity, and supporting shared understanding and common ground [5]. In the case of social online services without a clear objective to cater to communities, the function of the organizing people is that of *service providers* who maintain the service and give technical support.

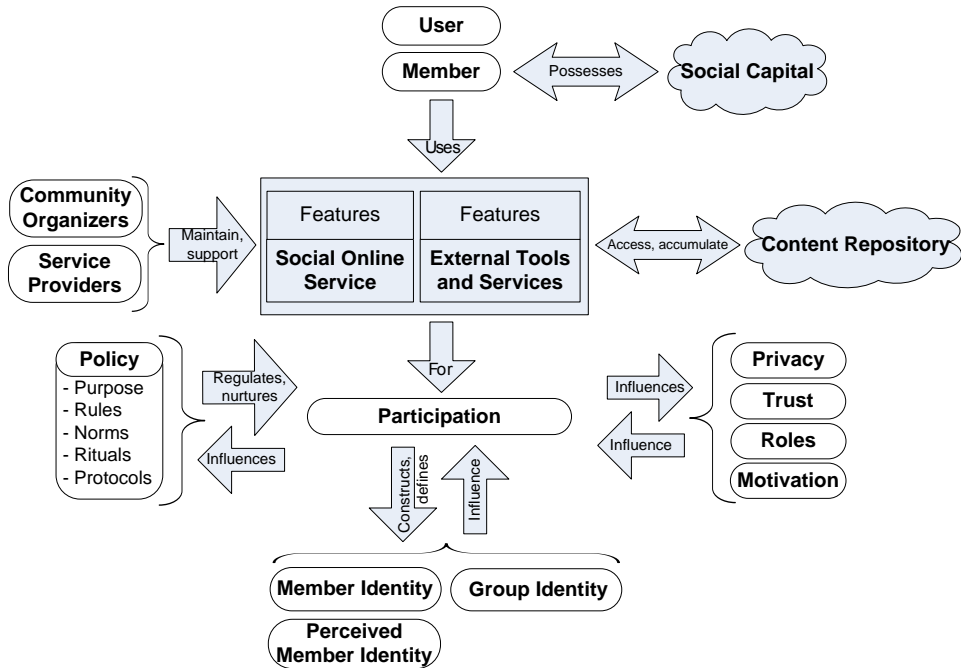


Figure 1. An Overview of the Revised Model

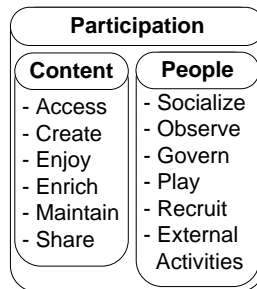


Figure 2. Classification of Participation Activities as Included in the Model

The technological elements of the model are the *social online service* and *external tools and services*, which offer a set of features for a member to participate in the online community, or for a user to access information and content from the service. The feature set can be augmented if the social online service allows creating or linking new applications to it; for example, the way that Facebook enables as a social online service. Thus, what appears to be a feature of a social online service

may originate from some other online service. The service is accessed with an interface running; e.g., on a specific client application or a generic Web-browser.

The *content repository* element refers to all the content (digitized information and artifacts such as text, audio, and video files) that is accessed and created by all service users and community members. The content repository can be a single database, or the content accessed from a social online service may actually be dispersed over the Internet.

The activities of participants do not occur in isolation, but are regulated, nurtured, or influenced by the community's *policy*, by each member's *privacy* concerns, *trust* relationships, and chosen *roles*, and by the *motivation* of people. A member's participation constructs and defines his or her *member identity*, which may in turn influence his or her participation in the community. Although the user of a social online service is not necessarily a community member, the user is still affected by the policy, privacy, trust, roles, and motivation factors, as these regulate or influence the information and content that are available. Next, these elements influencing participation are explained in more detail.

According to Preece [10], policy includes the shared *rules, norms, protocols, and rituals* of the community. Furthermore, a community forms around a common *purpose*, such as a shared interest, need, or service that provides a reason for the community [Ibid.]. Thus, the purpose influences the other elements of the online community, including its policy. The way the policy of an online community is defined and the intensity with which it is enforced can regulate or nurture participation.

Privacy can be seen as a key element influencing participation. Following Westin [14], we understand privacy as the claim of people to determine when, how, and to what extent information about them is communicated and to which audience. Some aspects of privacy may be voluntarily given up in exchange for some perceived benefits. If the perceived risks outweigh the possible benefits, privacy is likely not given up. If there is not a sufficient level of trust between two interaction parties – for example, member-to-member or member-to-community organizer – the risks may be perceived as too great; so, they restrain from performing an action between the parties.

Members can have specific, sometimes even multiple, roles while participating to an online community. Roles can be understood with reference to the purpose of the community, as the “who does what” in driving the community's purpose. The roles can be official or behavioral. The interface of the social online service may identify the official roles; e.g., through a badge or on-screen title such as “moderator,” “teacher,” “contributor,” or “host.” A member can choose to take on a behavioral role that has not been implicitly implemented into the social online service; e.g., the role of a critic, clown, martyr, or the creator of a new application. A member in a certain role may be expected to participate in a certain way while refraining from doing some other things.

The motivation of a member influences to a great extent his or her participation. According to Reeve [12], intrinsic motivation can be experienced as a natural motivation force that increases the engagement in an activity without

extrinsic rewards and external pressures. In contrast to such intrinsic motivation, extrinsic motivation emerges from environmental incentives (Ibid.). The social online service, community organizers, or other people can offer incentives that provide extrinsic motivation for members to participate.

In a social online service, each user has a member profile that can appear as a thumbnail picture, a nickname, the real name of the member, an animated figure, a combination of these, or a profile page with lists of interests, accomplishments, friends, group affiliations, etc. Furthermore, according to our model, each member has a *member identity*, which is the perception a member has of himself or herself within a particular online community. In our model, *perceived member identity* is an aggregate of a member profile (that can be, for example, visual, stylistic, and behavioral like the gestures of an avatar) and a member's past actions (including, for example, reputation) in the online community.

In other words, perceived member identity is a record of how all the other people recognize a member on the basis of his or her online appearance and actions. Perceived member identity influences member identity because a person is to a varying degree influenced by how others respond to him or her. Participating in an online community continuously constructs and defines a person's member identity and perceived member identity. For example, creating and personalizing content are effective means for a member to define to himself/herself and others what type of content he or she likes and dislikes, is capable of creating, and so forth. What a person desires his or her member identity to become (i.e., how others will perceive him or her, for example, as helpful or trustworthy) in turn influences his or her participation activities.

Members of an online community can form smaller groups by themselves, and the members of each group can share a *group identity*. The participation of a group's members influences and is influenced by the identity of that group.

2.2. A Classification of Participation Activities

The *participation* element acts as an umbrella term for all the activities people do in online communities. The model classifies the activities of participation into two principal categories labeled *content* and *people*, as illustrated in Figure 2.

In *content* category activities, a community member is involved in various ways with digital content. Traditional digital content includes, for example, text, images, audio, video, and objects used in virtual worlds. Content can also be interactive; for example, games that are played against the system implemented in the social online service. In our initial version of the model, the content category consisted of four types of activities – *get*, *enjoy*, *maintain*, and *share* – that we adapted from the GEMS model proposed by Lehtikoinen et al. [8], which is a conceptual tool for modeling the personal content experience.

In *get* activities, content is accessed, received, created, captured, purchased, and traded. On the basis of findings from the qualitative study (discussed in Section 3.2), we replaced the *get* element with *access* and *create* elements. The

concept of accessing content is rather straightforward. Examples of creating content include writing to a forum, taking photographs, making videos, and programming a new application.

During *enjoy* activities, content is recalled, read, listened to, remixed, viewed, edited, and personalized. Furthermore, playing the games associated with the social online service is a part of enjoying or using interactive content.

In *maintain* activities, content is organized, trimmed, rated, protected, and archived. These activities also include tagging content and moderating it; for instance, screening for and removing material that is defined as inappropriate by community policy.

During *share* activities, content is sent, shown, published, given, printed, sold, and traded. The shared content can be virtual items that are used in online games or virtual worlds.

On the basis of findings from the qualitative study, as will be explained in Section 3.2.5, we added the *enrich* activity to the content category.

The second high-level category of participation activities consists of communication and other interaction between members as mediated by the features of the social online service. These types of participation activities are classified as *socialize*, *observe*, *govern*, *play*, *recruit*, and *external activities*. This set of activities was defined on the basis of our experience with online service participation.

Examples of *socializing* include getting acquainted with other members, private and public messaging, giving feedback, free-form discussing, flirting and arguing in a chat room, hanging out with guild members in a virtual world, winking and poking, and so forth. Socializing can be synchronous or asynchronous. Socializing can greatly contribute to the formation of smaller groups like guilds and clans within the larger online community.

An aspect of participation is *observing* what people have done or are currently doing. An example of this type of participation is to look at photographs posted by a member in order to see what that person has been up to lately, and maybe make comments the next time when chatting with him or her. Further examples of observing include looking at the social networks of community members in order to see “who is friends with whom” (e.g., social investigation and social network surfing uses and gratifications, as discussed by Joinson [7]), and to check out the skills and equipment of another player in an online game.

Governing involves enforcing the policy of the community. Both community organizers and regular members can contribute to governing. The means for governing include actions such as “delete posting,” “remove content,” “ban user,” “demote,” and “promote,” which are enabled by features in the social online service. In other words, governing may involve giving punishments for inappropriate activities and rewards for activities defined in the community policy as appropriate.

Play activities are such that a member plays the games or other playful applications associated with the community so that he or she primarily interacts with the other members, rather than with the game system as in the case of enjoying interactive content.

The community policy may define the *recruiting* of new members as a key activity. New members can be recruited by sending e-mail invitations to acquaintances via the social online service, or through peer pressure or face-to-face recruiting. Means for inactively recruiting members include placing to one's Web page or blog a banner or badge that leads to the social online service.

External activities may be a relevant form of participation for members. This means that some members of an online community participate together in activities that occur outside the social online service; for example, on some other computer-mediated system (such as an external chat channel) or in a face-to-face situation. Some of the content produced during an external activity (for example, photos or stories) may be published in the social online service (cf. Olsson et al. [9]).

3. THE QUALITATIVE STUDY

This section discusses our set-up and methodology (3.1) and presents the results of the interviews we conducted (3.2).

3.1. Set-Up and Methodology

We conducted altogether 18 semi-structured thematic interviews to evaluate our pre-suppositions (as expressed in the online community model) on what kind of activities occur in the participation in various kinds of online communities. The structure of the interviews was principally based on the two categories of participation activities (content interaction and interaction with people), and the social capital and content repository elements in the online community model. We wanted to find out how well the 10 pre-defined activities (get, enjoy, maintain, share, socialize, observe, govern, play, recruit, and external activities) in practice explain online community participation, how users see their participation activities, and whether additional activities were needed to complete the classification. Hence, no quantitative analysis of the frequency of activities in various categories was made.

The study covered four various groups of online community members: (1) Facebook users, (2) discussion forum users, (3) members of a World of Warcraft guild, and (4) service administrators or other users in a responsible role.

Facebook is a social online service that was launched in 2004 and has, by 2009, attracted 200 million registered users. Facebook users join networks to connect and interact with other people through private and public messaging and photo sharing, and by using various applications; for example, for playing games. Joinson [7] has identified a set of distinct uses and gratifications among

Facebook users; namely, social connection, shared identities, content, social investigation, social network surfing, and status updating.

Discussion forums are very common on the Internet. Online bulletin boards have existed since the 1970s and are thus one of the oldest types of online communities. Since the 1990s, as new online service technologies were introduced, the term “online forum” has largely replaced the term “bulletin board.” An online forum is a Web application for conducting discussions and posting content. In most forums, users have to register before they can post messages and content.

World of Warcraft is a massively multi-player online role-playing game (MMORPG) that was first released in 2004 and has become very popular by reaching around 11 million subscribed players in 2009.

By this selection of social online services, we aimed at gaining insight of as diverse a set of types of participation in various community services as possible, and thus being able to evaluate the applicability of the model from several viewpoints. Of the 18 participants, six were Facebook users, five discussion forum users, four World of Warcraft guild members, and three admin users. The discussion forum users represented forums with dissimilar topics; for example, sports, pets, anime movies, and music. The admin users similarly represented various online communities: music forum and sports forum administrators and an experienced Geocaching.com user. In fact, most of the participants also used services other than the primary one they were categorized in by the researchers. The users, therefore, were not asked to limit their answers based only on the interaction in this primary community or service. All the study participants were Finnish. Their ages varied between 18 and 31. Ten of them were male, and eight were female. The quotations in this paper have been translated from Finnish to English by the authors. An early version of the report and a discussion of the findings from the qualitative study were published in [3].

3.2. Results of the Interviews

Inquiries about the participation activities in online communities were based on the classification presented in the *earlier version* of the online community model [2]; namely, *content interaction*: get, enjoy, maintain, share; *interaction with people*: socialize, observe, govern, play, recruit, and external activities. Other activities not fitting any of these classes were discussed with the study participants; hence, we were able to gain insight into whether the participation categorization would require updating.

3.2.1. Participation with Content

Activities that involved creating content were probably the most repetitive ones the participants identified in their own behavior. Such activities were, for example, taking photos, writing about opinions and experiences, creating content by playing (e.g., new equipment for characters and high score lists), composing music, creating instructions, and creating statistics of discussions (activities of the administrator participant). Textual and conversational content was seldom

created with the intention to create content but it “[...] *borns naturally due to communication*,” as suggested by one of the Facebook users. This comment confirms the dualistic nature of content, on one hand, as digital objects created and consumed in the service, and, on the other hand, as a means and part of communication. One Facebook user expressed this nicely: “*I create content by being present in the service.*” In order to get content, several users mentioned service- or content-dependent and concrete activities, such as buying content like music, having to register and sign in to a service, acquiring a premium membership, using search engines, and asking for other users’ help.

Enjoying content came up as a diverse set of activities: social interaction with friends, browsing content, personalizing the view to the social online service, finding new experiences and imagining oneself in others’ shared stories, viewing the recent activities and feelings of friends, or trying out new things available in the community.

Maintaining activities included, for example, filing, maintaining one’s online identity by reviewing own actions, cleaning up excess and trifling content, upgrading the storage capacity for own content, managing the settings of the social online service, and finding other related discussion topics where a new thought could be posted. Maintaining activities were done partly in the file-managing system of the operation system in the user’s computer and partly in the social online service’s own content repositories, as well as in the service settings.

Sharing can be considered a rather simple activity as such, but the ways and reasons to perform it and choose recipients are quite diverse. The most common and traditional forms of sharing were shared Web links in IRC or discussion forums, shared multi-media in online galleries, and shared information through discussions. Playing was also regarded as sharing of information about oneself or at least one’s online identity. Overall, both very explicit and deliberate, and implicit and tacit ways of sharing occurred. A few motivations for sharing were stated as well: i.e., helping by sharing information, giving tips to others about interesting content, and sharing one’s own experiences. In deciding with whom to share, participants perceived the quality of content and information as a substantial factor. The best and most interesting items were shared in public forums, whereas the ones with lower quality and interest were shared in IRC or other instant messaging service.

3.2.2. Participation with People

Socializing activities primarily involved exchanging instant messages privately or in groups and discussing more asynchronously in larger public groups. Also sharing content and other mediated communication were regarded as socializing by a couple of interviewees, because of their social motivation. The information shared in such activities was, for example, sharing knowledge, recent personal news, and opinions, agreeing on everyday errands, discussing sensitive matters that are easier to discuss through written text, or merely sharing small talk.

Naturally, the type of socializing depends on the relationship with the other party (a close friend versus merely another user in the service). One of the Forum users stated that “*users become people when they were met face-to-face.*” For most participants, socializing online was an additional way of socializing besides face-to-face. A few interviewees said that it is often easier to initiate social interaction with another person through the online service. After the initial online contact, it is more convenient to continue interaction off-line as well. All in all, socializing was considered to occur widely through various services on the Internet rather than through merely one service.

Observing other users was also a very common activity performed by the study participants. Almost all interviewees mentioned at least one of the following activities that can be classified as observing: browsing profile pages, sharing content and friend lists, reading messages and comments in public and private forums, and watching others’ avatars’ gear, appearance, and way of playing. Often, the best way to perform observing was said to be socially interacting with the other user. Thus, the observing activity can take place simultaneously with socializing activity. A few participants emphasized that observing in an online context actually does not differ that much from an off-line context; i.e., it is based on similar social norms and ways of communicating. The inherent interest in other people was seen to lead the users to investigate and create better conceptions of each other.

Governing activities were well recognized by the study participants, but only a few of them had performed such actions because performing governing activities usually requires certain status and rights to edit the published contents in the service. A few participants were acting as moderators in discussion forums, which meant performing such activities as deleting or moving old and irrelevant message threads, checking the validity of recently published information, and creating statistics.

A few examples of other users’ governing activities were suggested; i.e., remarking, reporting about, and acting upon indecent activity or content, and evaluating the quality and relevance of content and its comments. Also leading activities, such as steering a group gaming session, determining the next goals or leading through one’s own expertise and examples, were regarded as governing the community itself and its future trends.

Of the discussed services, playing activities were present mostly in World of Warcraft and Facebook, where users generally know their gaming partners. In these services, playing was regarded as mediated and implicit. Although playing was seen as the main form of participation in World of Warcraft, social interaction also occurred because of the nature of the game (e.g., because of the need to cooperate with others in order to be successful in the game).

Recruiting other people to the community or service was common for about half of the study participants. Among mentioned recruiting activities were inviting via e-mail or by using service-specific inviting mechanisms, persuading friends face-to-face or via instant messaging and advertising in other social forums. In one strictly governed World of Warcraft guild, there were certain

members who were appointed to be responsible for recruiting new members. Generally, the motivation for recruiting seems to be getting familiar people to join and become potential interaction partners.

External activities were very common for most participants. Such activities vary from off-line events organized for a large number of people from the community or service to informal, small-scale, ad hoc meetings. The general motivation was getting to know each other better. When asked for examples of external activities, the interviewees mentioned only real life meetings. Typically, the more close-knit the community is (e.g., those gathering around an IRC channel), the more there seemed to be external activities outside the Internet.

3.2.4. Findings Supporting the Model

In brief, the interviews gave support to the validity of the classification of participation activities as defined in the model. All 10 activities belonging to the two top level classes of interaction with content and people were discussed by most of the study participants. However, for several participants, it was challenging to think of content and people as separate categories as they often were so tightly interconnected in the service and interaction within it. One motivation for users to create content is to communicate their opinions and thoughts, and to let each created content item form a part of their perceived member identity. New relationships can emerge with the help of content, and content can act as a facilitator of social interaction (e.g., socializing and observing).

Content is often seen as a “by-product” of communication. In addition, content (as well as people) can act as an attraction and motivation to join the service, and, in fact, people are often seen as the content of the service. As one of the Facebook users phrased it: “*Content of the service is the social interaction with others.*” Considering the above-mentioned facts, we conclude that the people and content categories are partially overlapping in the practical participation activities, and thus a strict division between the categories should not be made when using the model to analyze participation. Instead, the user of our model should consider how a certain behavior or activity of a member appears in, and affects, both the people and content categories.

3.2.5. Revisions to the Model

The interviews also brought up the need to revise certain aspects of the classification as they were defined in the initial version of the model as published in [2]. These revisions appear in the current model depicted earlier in Figure 2. The revisions are as follows. Most interviewees considered that making a distinction between *get* and *enjoy* activities was confusing, as content is not simply “get” (in the sense of “accessed”) for its own sake, nor can content be enjoyed without first accessing it. Thus, *get* activities in the sense of accessing content may be a redundant category. On the other hand, activities related to creating content are not that obviously included in the *get* category. A solution is

to replace the *get* category with *access* and *create* categories, although creating content is not a straightforward concept either (as will be discussed below).

In addition to the participation activities defined in the model, a few other activities related to content also came up in the interviews; namely, advertising one's own content, commenting on content, developing and programming new services or features in the services, and creating verbal guides to the service. Advertising or promoting content could be a useful additional activity to the classification. Developing a new service or application can also be regarded as a form of creating content, as the new service or application provides content for the other users. It is problematic to interpret commenting on someone else's content as an activity of creating content. Thus, the model was extended with the *enrich* category. Enriching content involves augmenting an existing content item; for example, by writing a comment to it, rating it, adding a hyperlink to it, and so forth.

Socialize activities seem to be almost omnipresent because, in the discussed services, content is so often created, shared, or commented on by community members or fellow users. Thus, *socialize* appears to be a redundant category when using the model to examine online communities and social online services. However, the *socialize* category includes also such activities as obtaining and giving social support, and maintaining friendships, as recognized by Ridings and Gefen [13]. The need for *socialize* activities needs to be explored when developing the model further.

The category of *play* could not be properly validated through the interviews. Playing may be just one manifestation of socializing activities, as it is somewhat higher in level of abstraction than the other categories. In other words, playing might be a special approach to socializing; e.g., in the sense of "kidding," "fooling," or "not serious" – not just playing in the sense of engaging in competition.

The interviews gave support to the validity of the *external activities* category; however, all the mentioned external activities had taken place off-line rather than on some online system external to the discussed service.

The concept of content was understood broadly by the participants. According to them, content is created, used, and appreciated by users. The study participants proposed that content tells something about its creator or sharer. Content was seen as social content, information content, or both. Most interviewees acknowledged interaction and relationships to other users as important content in social online services. Traditional media content was also considered important in such services; however, the emphasis was on user-created content (such as shared experiences and knowledge). One of the Forum users summarized content as "*everything that people create and do in the service.*" The findings suggest the nature of content as dualistic; i.e., as stored digital objects consumed in the service and as a means of communication. Textual and conversational content was seldom created with the *intention* to create content, but it was seen to born from communication.

The interviews gave evidence also of the validity of the social capital and content repository elements as defined in the model. With regard to social capital, people were seen as content of the service and as an important factor. Familiar people were most likely recruited to the communities. Thus, the total social capital of a member affects his or her participation. The content repository element can be seen as the total amount of content in the service and the members' personal content repositories on their PCs (where content management often occurs) to the extent they are willing to share it.

4. THE QUANTITATIVE STUDY

After the qualitative study, we conducted a quantitative study to complement the findings from the interviews and to further validate the model. As the interviews focused on different aspects of participation, the online survey examined the other elements of the model.

4.1. Study Set-Up and Methodology

We conducted an online survey to collect data about social online service users' and online community members' participation activities and the elements that affect the participation. Part of the questions was used to gather background data about the respondent; for example, the respondent's perceived "socialness" (that is, how social and active the participant considers himself or herself and whether it is easier for him or her to deal with people online or face-to-face). The remaining questions were constructed on the basis of the elements of the model (participation in general, roles, privacy, trust, motivation, policy, member identity, perceived member identity, group identity, social capital) and the hypothesized ways the elements are interlinked (for example, aspects of trust that influence participation).

The intended population of the study was anyone using social online services. The invitation for participation was distributed among many social online services: Facebook, IRC-galleria, Flickr, geocaching.com, hattrick.org, various discussion forums (e.g., World of Warcraft, sports forums, and pet forums), bulletin boards, and various mailing lists that have potential social online service users subscribed. The survey was published in both the English and Finnish languages to avoid excess culture-bound distortion in the data and to widen the scope of the study in a geographical and cultural sense. Both language versions were piloted in two consecutive rounds with altogether eight users. In the analysis phase, the data from both the English and Finnish survey versions were merged for common analysis of the entire data. All the responses were treated anonymously. A few responses were eliminated from the data as their reliability was questioned because of heavily anomalous answers and doubtful background information.

The survey was kept online for a month during April–May 2008, during which altogether 281 people responded to the survey (149 to the English version and 132 to the Finnish). The respondents' ages varied between 16 and 61 years,

with a mean of 27.21 years and a median of 25 years. Of the respondents, 59.4% were male and 40.6% female. With regard to nationality, 58.2% of the respondents reported to be Finnish, 12.9% British, 3.2% German, and 25.7% from other countries.

The most used service types were instant messaging services (54.7% used daily) and photo- or video-sharing services (13.7% used daily). Facebook was the most used specific online service (41.2% used it daily). From this set of users and services, online gaming services (World of Warcraft and Second Life) did not stand out in the statistics, with only 3% of daily users altogether. Facebook (29.5%) and MS Messenger (28.5%) were considered the most important of the proposed services.

With regard to the frequency of participation in social online services, 31.7% of the respondents claimed to be active participants, 23.8% rather active, 27.4% average, 12.5% rather passive, and only 4.6% passive (mean 3.66, Std. dev. 1.18). Regarding the background variables, the rate of missing values varied between 0.0 and 3.9 % (mostly 0.4–1.2%).

In reporting the results, we based the percentages on the valid percentage (i.e., the missing values are ignored). None of the responses were eliminated from the data because of, for example, too low experience or frequency of use of the suggested services. Only a few obvious hoax responses (e.g., several questions unanswered, or only extremity or middle alternatives answered, or answers provided during late night) were eliminated to raise reliability of the study.

4.2. Results of the Survey

Certain variables were recoded to compare user groups based on their level of socialness, services in use, roles, and experience. The services were categorized in four classes based on which service type was reported to be the most important:

1. “Social networking” – Facebook, IRC galleria, Windows Live Spaces, MySpace, LinkedIn (33.5% of total)
2. “Forums and blogging” – Forums or news groups, blog (13.5%)
3. “Instant messaging” – MS Messenger, ICQ, IRC, Skype (44.8%)
4. “Other” – Flickr, Twitter, Last.fm, World of Warcraft, other services (8.2%)

Next, some findings from the survey are presented on the basis of the model’s element to which they relate.

4.2.1. Roles

We asked users to define the roles in which they act in the social online services and communities, using a three-grade scale of “never, sometimes, primarily.” Rather expectedly, the most commonly cited primary roles were consumer (of content or knowledge) (45.9%) and observer (33.7%). Only 12.5% of the respondents had never acted as an observer, and 14.9% had never acted as a consumer. The most common roles in which the respondents had sometimes

acted were observer (53.7%), creator of content (51.8%), and publisher (51.8%). Helper (61.6%) was seen often as a role in which to sometimes be, but, in the analysis phase, this was regarded more as a characteristic and nature of certain people rather than an official role. Only consumer and observer roles were stated as primary. This might be because of the high number of lurkers and passive members in the social online services and communities.

Generally, the function of roles seems to be to ease interaction and work allocation, as 53.8% of the respondents either strongly agreed or somewhat agreed with the statement, “Roles help clarify who does what in a service” (mean 3.54). Furthermore, 62.8% strongly agreed or somewhat agreed with the statement, “People in specific roles are expected to do specific things” (mean 3.66).

4.2.2. Motivation

Motivation was asked about in two questions – one about the motivation to participate in social online services, and the other relating to the motivation to participate in online communities. The scale in both questions was a five-grade scale:

1. Strong negative influence
2. Negative influence
3. Neither negative nor positive
4. Positive influence
5. Strong positive influence

With regard to motivation to participate in social online services, the statements, “My friends are using the same service,” and “I can trust the service (it is safe, for example, from identity theft),” were the most positively influencing (38.6% and 37.7%, respectively, responded “strongly positive influence”). Apparently, people with whom they are already friends attract people to certain services. It is easier to interact in the service or community when there is someone you know, and the recruitment is mostly based on person-to-person relationships.

The proposed factors “I enjoy the content,” (5: 27.5%, and 4: 57.0%), “I enjoy the social interactions” (5: 53.7%, and 4: 23.4%), and trust of the other users and maintainers positively affected motivation.

“Creating a consistent online identity that is in some way different from the real-world me” was considered the most negatively influencing of the proposed factors (1: 12.9%, and 2: 18.9%).

“I get new challenges” and “The service gives me rewards or benefits for participating” were considered as neither positive nor negative, as in both questions 55.7% of the responses were “neither/nor.”

With regard to motivation to participate in online communities, the most positively affecting were “Maintaining social connections” (5: 28.3%, and 4: 53.3%); “I have mutual interest with the others” (5: 19.2%, and 4: 57.5%); “Sharing content and knowledge I have” (5: 18.3%, and 4: 54.2%); “If I share content and knowledge, the others will share and vice versa” (5: 18.3%, and 4:

51.2%); and “Chance of making new friends” (5: 13.3%, and 4: 45.0%). Based on the results, none of the proposed motivation factors can be said to have influenced participation negatively, but a couple of factors were mostly considered neither positive nor negative; namely, “I can contribute to governing the community” (3: 67.6%), and “The other people give me rewards for participating” (3: 66.4%).

Generally, only a few of the motivation factors proposed in the questionnaire seemed to affect the motivation more negatively than positively. The possibility of enjoying the social interaction and content, having mutual interests, reciprocity, and trust factors seem to affect motivation most positively, whereas getting rewards and being able to participate to governing duties were considered to affect negatively or not at all.

4.2.3. Member Identity

Details related to how respondents perceived the member identity element were solicited with the question, “How important are the following actions for representing yourself in a service?” The five-grade scale was:

- 0 Don't know
- 1 Unimportant
- 2 Somewhat unimportant
- 3 Not relevant for me
- 4 Somewhat important
- 5 Very important

With regard to the elements affecting users' identities most, a few outstanding factors emerged. The respondents indicated that the factors affecting their identity most were: their actions and behavior in the social online service (5: 22.5%, 4: 45.0%, mean 4.63); and having a unique nickname (5: 16.7%, 4: 42.5%, mean 4.38). Also considered important were: “The style or topic of the content I create or share about me” (5: 9.2%, 4: 43.5%, mean 4.17); “Using my real name” (5: 9.0%, 4: 32.2%, mean 3.92); and “Using a recognizable picture of me” (5: 11.6%, 4: 30.5%, mean 3.91). However, regarding the two latter factors, 35-45% responded “unimportant” or “somewhat unimportant.” By being a relatively large sub-group, the Facebook users affected the distribution rather much as 51.9% thought that using their real name is somewhat or very important, and 55.0% thought that using a recognizable picture is somewhat or very important. Yet, “Having an avatar that somewhat looks like me” was not considered as important. Only 11.1% of the Facebook users regarded it somewhat or very important, and 51.5% regarded it unimportant or somewhat unimportant (mean 3.04). Furthermore, the factor, “Developing the properties of my avatar,” was regarded as rather unimportant (1 + 2: 45.8%, 4 + 5: 14.1%, mean 3.09).

4.2.4. Group Identity

A notable number of respondents somewhat agreed (31.4%) or fully agreed (8.1%) that they feel that a group they belong to has an identity that differentiates

it from other groups in a service. However, most respondents neither agreed nor disagreed (48.3%) with this proposed argument. This might be explained by the nature of most services; that is, the other communities (for comparison) are not identified because it either is not possible (for example, they are not public) or there are no other communities in the service.

The most important group identity strengtheners were, “The group has an identifier (name, slogan, or logo)” (5: 21.0%, 4: 43.9%, mean 3.75); “The people in the group do things together” (5: 19.2%, 4: 44.1%, mean 3.71); and “The group has defined goals” (5: 16.6%, 4: 42.8%, mean 3.64). The least important of the proposed factors (mean 3.12) was “The people in the group have specific roles.” In sum, all of the named factors were considered at least somewhat important.

The most important group identity weakeners were “People fool around” (5: 22.8%, 4: 36.8%, mean: 3.63), and “People don’t focus on the topic” (5: 18.0%, 4: 38.0%, mean 3.54). The least important group identity weakeners were the factors “people criticize others” (mean: 3.16), “there are no leaders” (mean: 3.21), and “people in the group compete against each other” (mean: 3.27).

4.2.5. Privacy

Privacy concerns affect participation greatly, especially when persons start to use new social online services or join new online communities. To the statement, “I don’t let privacy concerns restrict my participation in a service,” the responses were slightly more emphasized at the “disagree” end; namely, 15.1% strongly disagreed and 37.4% somewhat disagreed (mean: 2.77). Although this signifies that privacy concerns indeed restrict users’ participation, 36.2% either agreed or somewhat agreed with the statement; that is, they did not feel that privacy concerns restricted their participation. Only 11.2% either agreed or disagreed. This split distribution might be explained by the presence in the study of various services and users with various experience. Not all services are such that the social pressure or service culture obliges users to share personal information in detail.

The reasons for restricting participation were inquired, using the following statements. As much as 34.9% agreed or somewhat agreed with “I have learned about misuse of personal information in a service, so I have limited my participation in the service” (mean 2.92). Although most respondents disagreed with “Someone has behaved badly toward me in a service, so I have limited my participation in the service” (1: 22.7%, 2: 24.9%, mean 2.57), as many as 21.6% agreed (4: 16.1%, 5: 5.5%) with this statement. The most significant reason, however, seems to be “I don’t want irrelevant people to contact me so I limit what I do in the service.” A total of 11.3% strongly agreed and 34.9% somewhat agreed (mean 3.11) with the statement. It is interesting that what others have done seems to have restricted the respondent’s participation activities.

4.2.6. Policy

Policy factors were inquired with various statements, both with a nominal scale (prohibiting, hindering, regulating, assisting, easing, have no influence) and interval scale (ranging from “strongly disagree” to “strongly agree”).

Matters most positively affecting participation in an online community were “All kinds of topics are allowed” (easing: 30.5%, assisting: 24.2%), and “There are regularly organized events for the shared activities” (easing: 21.7%, assisting: 38.2%). Other positively affecting matters were “It is stated what people should and should not do” (easing: 13.8%, assisting: 22.2%), and “It is stated that discussion and content should be strictly on topic” (easing: 13.7%, assisting: 20.3%).

The most negatively affecting matters were considered to be “Content and activities are not moderated” (prohibiting: 10.3%, hindering: 35.1%), and “It is stated how interaction between people should proceed” (prohibiting: 5.9%, hindering: 26.0%). Based on this, it can be said that certain explicit limitations ease in keeping the community “on topic” but, at the same time, the types of interaction between people should not be restricted.

Most respondents agreed with the proposed factor, “By observing other people, I can learn what is appropriate behavior in a community” (strongly agree: 26.3%, somewhat agree: 49.3%, mean: 3.93). This suggests that the policy is often a set of unwritten norms that have to be learned by observing others (or through one’s own actions and others’ feedback on them) during the early stages of participation.

5. DISCUSSION

Although the findings of the qualitative and quantitative studies give support to the validity of the model, a number of the findings have additional implications for the design, organization, and governing procedures of future social online services. In the following paragraphs, we discuss some of these.

A focal segment of the participants acts as *observer* as their main role or at least sometimes. This might be partly due to the lack of written and established rules, as well as to the fact that the social online services tend to evolve perpetually. Therefore, people learn from one another the norms of the communities and new ways of performing tasks. Furthermore, respondents regarded that their own actions and behavior in the service affect their identity the most. In service design, providing more information about other group members’ habits and activities would ease the process of learning the community’s rules, offer a better sense of community, and concretize the community norms and values.

The findings suggest that several factors highly affect the group identity; namely, having a distinct identifier, members doing things together, and the group having defined goals. This fact also implies that the group identity affects its members’ identities. The members are partly defined by the groups or communities to which they belong. Therefore, groups should be provided with

tools for creating a proper and alterable identity or profile – something by which the group, as well as its members, would be more easily identified. Also, the services should be as dynamic as possible with regard to personalization (being able to affect one's member identity as well as the service's functionality, appearance and privacy).

The majority of the respondents either agreed or strongly agreed with the proposed factors that there are communities in online services because people share interests, knowledge, and content. Thus, community organizers could strengthen the sense of community among people by making the shared interests more visible in the service user interface, and by socially acknowledging members who share content and knowledge.

Since most respondents were Finnish, the generalizability of the results must of course be questioned. However, we did not find many significant differences between the answers of various language versions, but instead other background variables, such as level of socialness and the mainly used service type, seemed to influence the variance of the responses more. We infer that the cultural background, overall, has a smaller influence on member participation on the Internet as there exist various rules and norms in the services, and the social interaction does not occur face-to-face where cultural issues often become visible. At this stage, the goal was to consolidate the model and the validity of the elements; thus, the interplay of the elements and comparisons between various background variables are presented in future publications.

6. CONCLUSIONS AND FUTURE RESEARCH

We have developed a model for understanding and analyzing participation in social online services and online communities. Further, we have presented the results of two studies based on the elements defined in the model. The findings of the studies provided insight on the respondents' views on participation in the social online services and online communities they represented.

The findings of the qualitative study gave support to the validity of the model's classification of participation activities and provided input on how to revise certain aspects of it. The revisions have been presented in this paper.

The findings from the quantitative study did not point out reasons to immediately revise the model, but, instead, they suggest that future research is needed to understand how the elements can interact, partially overlap, and influence one another.

The model's classification of participation activities can be used in future studies; for instance, to conduct statistical analysis on the participation activities in different types of online communities. Through the classification, it is possible to statistically track how a community member's participation evolves over time; for example, which activities are prominent during certain stages of membership or while performing certain roles.

The model can be used to analyze a wide range of service types. However, it must be noted that the emphasis between the elements varies largely based on the

type of service. There were highly significant differences between the various roles of the respondents, which impress the extent of various user needs even more. This was evident also in the results of the evaluation. These facts implicate that, when a service is designed, the details and importance of each element of the model have to be well considered.

With regard to the model as it is after revision, there remain a number of areas for future research. First, the model needs to be further validated through a combination of methods. Future studies may reveal that the configurations of the model's elements and their interconnections are somewhat different in various types of online communities. Some elements may be more prominent in communities organized around games than, for example, around peer support or professional use. The need for *socialize* activities has to be explored further in the model's classification of participation activities.

Other directions of future research include taking into account deviant behavior, the temporal dimension in the development of the community and each member's individual participation, understanding the culture or a particular community, peer enforcement of norms, and interconnections between activities in the *content* and *people* categories. The model should be augmented to take into account the various strengths of the social ties between the members. A final major direction of future work is to develop the model into a design and evaluation tool.

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