

Posters, Lurkers, and in Between: A Multidimensional Model of Online Community Participation Patterns

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Abstract

Existing research divides online community participants into two separate groups: posters, who publicly participate in the community's activities, and lurkers, who read but do not post or respond to ongoing conversations. The current study expands the concept of participation patterns in online communities from the standard binary distinction to a broader perspective of participation behaviors. We propose a model with two continuous dimensions, publicity and intensity, over which participants can be located. Intensity indicates the frequency of total activities performed by a participant in the community. Publicity represents the degree of exposure in a participant's activities: their ratio of public activities as posting to non-public activities as reading. We examined a corporate online community with a variety of discussion groups. In October 2003, the management of the corporation decided to turn participation in the discussion groups from anonymous to identifiable. To understand the effects of this change, we used several techniques, including calculating posting and visiting frequencies before and after the change and analyzing discussion group posts. We also developed open-ended questionnaires for community participants. The findings suggest that the change had a crucial impact on shaping participation patterns in the community. A variety of publicity and intensity behaviors were observed before as well as after the anonymity removal. A decrease was observed over the publicity dimension. However, users did not report that they moved categorically from posting to lurking behavior. An increase was observed in intensity, indicated by an increase in the number of visits to the community's website. This kind of understanding of the complex effect of such a change would not have been possible with a simple binary model, and shows the value of a richer behavior representation.

1 Introduction

Online communities provide means for their members to participate in a rich variety of patterns. Somewhat surprisingly, existing research refers to the online communities' participants in a dichotomous manner, dividing them into posters and lurkers. *Posters* are the members that actively participate in the community's discussions, whereas *lurkers* are the silent participants who just read the messages posted by the posters.

In the early days of groupware research, there was disagreement as to whether lurkers should be considered legitimate members of the communities. Some referred to them as outsiders, not contributing to the creation and maintenance of the community (Pickering & King, 1992, Kollock & Smith, 1996), while others applied a flexible definition of group membership boundaries so that some communities could consider these lurkers as group members (Roseman & Greenberg, 1993), or simply accepted their existence and deliberate their contribution to the community (Wellman & Gulia, 1997). Later research extensively studied the nature and characteristics of lurkers, suggesting the term 'non-public participants' to legitimize this type of members (Nonnecke, 2000, Nonnecke and Preece, 2001, Takahashi, Fujimoto & Yamasaki, 2002), or aimed toward quantifying the proportion of lurkers versus posters (Mason, 1999, Nonnecke & Preece, 2000).

These studies, however, presume and reinforce a dichotomy of participants. The only attempt to depart from this binary distinction adds *leaders* as a third type of online community members (Blanchard & Markus, 2004). Considering participation patterns in online communities may lead us to suggest that it is unjustifiable to classify participants into a small number of categories, since this classification overlooks a rich variety of participation patterns.

Our proposed participation model suggests that a number of continuous dimensions can be used to characterize a range of practices of both individual participants and the overall participation pattern in an online community. Spe-

cifically, we suggest the *publicity* dimension, of which posters and lurkers are only the extremes. In the sense that participants can sometimes post messages and at other times just read other's postings, publicity represents the degree of exposure in a participant's activities: their ratio of public activities such as posting to non-public activities such as reading. The model consists of an additional dimension, *intensity*, which identifies the frequency of activities performed by participants using a time measurement. In this scheme intensity is distinguished from public participation role, since each element can be dependent upon different determinants. Figure 1 demonstrates conceptually a visualization of the spectrum of behaviors created by the publicity and intensity dimensions. According to the model, each participant can be located anywhere in the spectrum created by the dimensions. For example, a participant can be a frequent visitor, and on his visits tend to read rather than post. This participant will be positioned in the top-left area of the spectrum, as a frequent participant who keeps his/her privacy. We also believe that the model can be used to measure the average pattern of the community's participants. The bottom-left corner of the spectrum in figure 1 highlights the core participants of the community, those that participate frequently and publicly in the community's conversations.

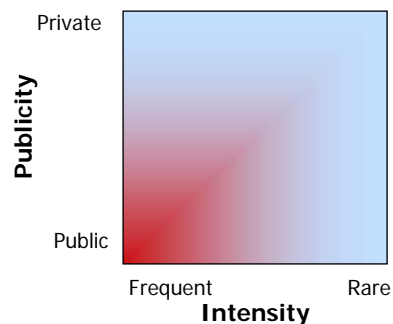


Figure 1. A conceptual visualization of the spectrum of behaviors in an online community.

To support the proposed model, we examined an Israeli hi-tech corporate online community, comprised of various discussion groups. The discussion groups are all non-work related topic threads, discussing topics such as buying and selling, recipes, studies, weddings, and so forth. Unlike other communities in the company that target subsets of workers on a professional basis, this community serves to meet the general needs of all the company's workers.

In October 2003, following a series of personal defamations, sexual allusions, and blatant commercial advertisements, the company's management decided to remove anonymity from the postings in the discussion groups. Until the change, the writer of a message could, if s/he wanted to, enter any name to be associated with the message. Since the anonymity removal, the logged-in user name of the posting worker is automatically attached to every message. Only one discussion group, *Just Talking*, remained anonymous. The management had decided to allow anonymity since *Just Talking* usually carries political debates and complaints against the management. The management announced that in this way they allow workers to safely expose their opinions, but that the anonymity will remain only as long as language and expressions are properly used.

While some scholars recognize that anonymity provides the basis for free expressions (Nissenbaum, 1999), others realize that it may also entail lack of accountability (Marx, 1999). Nonetheless, this paper does not seek deliberately to answer the question of anonymity benefits and drawbacks. Rather, the anonymity removal is employed in the current paper to understand its effects on the participation behaviors in the discussion groups. We are interested in examining the power of the participation model to express the behaviors before and after the change.

2 Methodology

In order to examine various facets of the effect of the anonymity removal we employed several techniques. First, archive files of the discussion groups were obtained from the corporation, although stripped of the names of the posters of the messages. As the online community resides in an internal network of the corporation, inaccessible from external sites, we could not directly access the community's website, and thus were limited to the time frame and the detached medium of the archived files. The files included 29,002 messages dating from December 2002, the

launching date of the community, to November 2004, the retrieval date of the files. The threads of messages and responses in the various discussion groups were organized in a typical hierarchic order.

Second, we developed open-ended questionnaires for community participants. In the questionnaires, informants were asked to report their interests in the community discussions, their participation frequency and nature of activities, including posting and reading rates, and their attitudes toward the community and the anonymity removal. 200 questionnaires were sent to two departments of the company, to one department through postal mail and to the other department through email. The questionnaires were then distributed to workers by the administrative staff. The questionnaires included a statement that responding to them is voluntary and anonymous. 34 workers completed and returned the questionnaires, either by postal mail or by email. Open-ended questionnaires were also sent to the community administrator and to the Chief Knowledge Officer of the corporation, followed by email exchanges for additional information and clarifications. The questionnaires were answered between November 2004 and February 2005, 13 to 16 months after the anonymity removal. The questionnaires were composed and answered in Hebrew, the native language of the respondents.

3 Results and Discussion

Out of the 34 respondents, 23 reported that they access the community's website with various frequencies, from several times a day to less than once a month. The other 11 reported that they never accessed the discussion groups, either due to lack of interest, time, or knowledge about the community existence. The 23 community participants reported on various publicity patterns, although all reported that they read more than they post or respond to other messages. An important aspect is the participants' reports about changes in their visiting frequencies and posting behaviors following the anonymity removal. Of the 23 participants, 16 participants reported that their visiting frequency remained the same as before the change, 5 reported that their visiting frequency increased, and 2 reported that their visiting frequency decreased. In terms of publicity, 15 reported that their posting to reading ratio did not change, while 5 reported that their posting to reading ratio increased and 3 reported that their posting to reading ratio decreased. We should be aware that a self-reporting methodology may influence the results, introducing social desirability biases (Couper, Tourangeau & Steiger, 2001). In this sense, workers are not willing to report excessive participation in activities that are not work-oriented in the workplace.

Table 1. Number of visits, posted messages, and calculated publicity before and after the anonymity removal

	Visits		Posted messages		Publicity ¹
	Total	Per month	Total	Per month	
Before change (10 months)	165,000	16,500	14,700	1,470	0.098
After change (13 months)	257,000	19,800	14,300	1,100	0.059

The archive files provide a complementary means to measure intensity and publicity behavior, without the issues of self-reporting biases. The overall posting frequencies were calculated from the archive files, as well as the breakdown to the various discussion groups. Table 1 presents the number of visits and postings, and publicity measure for the periods before and after the change. The number of visits was obtained from the visitor counters in the community webpage. This variable represents the intensity dimension of the proposed model. The publicity variable is estimated by the number of postings divided by the number of visits that did not include postings. In the ten month period before the change, community participants made 165,000 visits to the website and posted 14,700 messages, averaging 16,500 visits and 1,470 messages per month. As a result, the total ratio of public visits to non-public visits is about 10%. In the 13 month period that follows the anonymity removal, there were 257,000 visits and 14,300 messages, an average of 19,800 visits and 1,100 messages per month. In this period, the corresponding publicity ration is about 6%. In terms of the proposed model, it is apparent that participation behavior moved down in the publicity dimension, as indicated by a decrease in the posting to reading ratio, and up in the intensity dimension, as indicated by an increase in the visits frequency. Notwithstanding, we must bear in mind that the first few months of the community were the launching period, in which workers discovered the community and the critical mass of use was established (Markus, 1987, Kraut, Cool, Rice & Fish, 1994). Moreover, discussion groups were added over

¹ Publicity is calculated by: (posted messages) / (visits – posted messages). This calculation is a rough estimation of the number of visits where public activity was observed, relative to the number of visits that did not involve any public activity.

time, targeting new audiences. These observations may restrict the correlation between the change and the increase in the number of visits from the early anonymous period to the late non-anonymous period. The anonymity removal might have had additional contribution to the observed intensity increase by allowing curious workers to explore who among their colleagues are posting messages and what they are writing about.

The archive files also allow us to examine the effect of the anonymity removal on the posting frequencies in specific discussion groups. Figure 2 presents the average number of postings per day in the different discussion groups before and after the change. The diagram illustrates the popularity of discussion groups in terms of public behavior: higher average postings per day indicate heavier messages traffic, distinguishing a discussion group is more popular to post messages. Unfortunately, due to technical constraints, we cannot present similar findings related to reading popularity of the discussion groups.

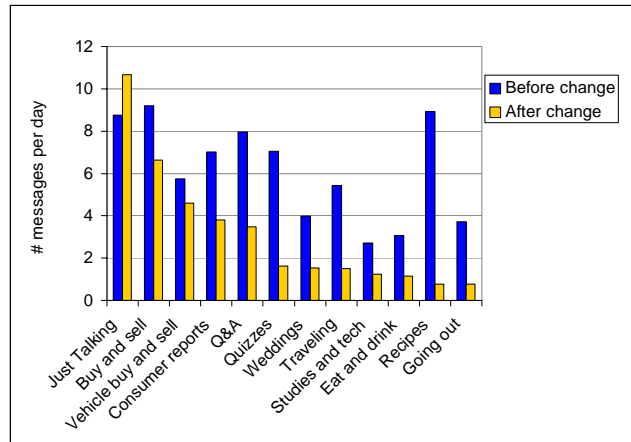


Figure 2. Average number of postings per day in each discussion group before and after the anonymity removal

From Figure 2 we can learn that most of the discussion groups decreased in public popularity after the change. The only discussion group that increased in popularity after the change is the *Just Talking* discussion group, which remained anonymous after the change. The disparate patterns of average postings before and after the change in Figure 2 clarify that the anonymity removal had a strong effect on the public popularity of the different discussion groups. Otherwise, it would be difficult to explain how the *Recipes* discussion group, for instance, dropped from being one of the most popular discussion groups before the change to one of the least popular, in terms of posting messages.

Analyzing the contents of the conversations in the discussion groups supports this finding. Specifically, the *Just Talking* discussion group held conversations about the anonymity removal starting immediately after the change. The remained anonymity with the theme of this discussion group made it the only venue that tolerated and anticipated discussions about the new policy. The rest, being identifiable, turned at once into well focused discussion groups, without chit chat and zealous conversations. The conversations in *Just Talking* discussed the anonymity removal effects, including the decreased traffic in the rest of the discussion groups. Other aspects discussed in these conversations included positive and negative sides of anonymity, personal opinions toward the management and the community regarding the new policy, and speculations about reasons for the management’s decision. These conversations strengthen the assumption that the anonymity removal was the cause for the decrease of posting popularity in the identifiable discussion groups.

4 Conclusions and Future Research

The results of the study suggest that the anonymity removal had a critical role in shaping participation behaviors in the community. In terms of the participation model, a decrease was observed over the publicity dimension, while an increase was observed over the intensity dimension. The capability of the model to express the rich variety of behavior patterns supports the hypothesis, that participation in an online community is deeper than merely posting and

lurking. Other classifications of online community participants typically uses discrete categorization (Kim, 2000), and thus continuous changes might not necessarily be captured by these models.

The proposed model in this study consists of two dimensions on which participation behavior can be measured. It is therefore considered as a starting point for a more complex argument around participation patterns of online community members. Further extension and refinement of the suggested dimensions can consequently generalize the model for many types of online communities and their participants. Elaborating the model could be supported by empirical studies in which participation in online communities will be observed using various methods. Moreover, examining changes in online communities, such as policy or technical changes, could benefit from the model by showing how changes in participation behaviors over time can be represented with the model. Consequently, modeling a variety of participation behaviors will facilitate the design and management of online communities, taking into account a broader and deeper comprehension of who the participants of these communities are.

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