



Understanding lurkers in online communities: A literature review



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ABSTRACT

In internet culture, lurkers are a special group of website users who regularly login to online communities but seldom post. This study aims to provide an overall understanding of lurkers by explaining the definition of lurkers, discussing the reasons for lurking and providing suggestions on de-lurking. To understand the reason for lurking, this study first explains why people participate in online communities by building an integrated model of motivational factors of online behaviors. This model classifies motivational factors into four categories: the nature of the online community, individual characteristics, the degree of commitment and quality requirement. Based on this model, four types of lurking reasons are identified: environmental influence, personal preference, individual-group relationship and security consideration. Finally, several strategies for motivating participation in online communities are provided, including external stimuli, improved user-friendliness, encouragement of participation and guidance for newcomers.

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1. Introduction

The “silent groups” in the online communities, usually known as lurkers, comprise the majority of community members. The famous “90-9-1” principle states that in a collaborative websites, such as an online community, 90% of the participants only read content, 9% of the participants edit content and 1% of the participants actively create new content (Arthur, 20 July 2006). The number may be different but it has been widely proved that the majority of the content in an online community is created by the minority of the users. One of the founders of Wikipedia once performed a study and found that over 50% of all the edits were done by only 0.7% of the users (Swartz, 2006). In a recent investigation of the content of four separate digital health social networks, researchers indicated that the top 1% most active users created 73.6% of posts on average, the next 9% of the population accounted for an average of 24.7% of posts, and the remaining 90% of the population posted 1.7% of posts on average (van Mierlo, 2014). Actually, every participant of the online communities, active or silent, read more postings than they wrote (Ebner, Holzinger, & Catarci, 2005). The difference between posters and lurkers is that posters make contributions to the community by sending messages occasionally, while lurkers stay silent most of the time.

Even though lurkers comprise such a large proportion of website users, researchers have paid little attention to the lurking

phenomenon until recent years. Surveys have been conducted in online communities (Bishop, 2007), email-based discussion list (Nonnecke & Preece, 2000), the social network service (Rau, Gao, & Ding, 2008) and online learning courses (Beaudoin, 2002; Küçük, 2010) to discover the underlying reasons for lurking and methods to encourage lurkers to post. Different models have been proposed to explain lurking behavior, and these models identified many factors that influence online performance, such as community culture, users’ personality and the relationship between users and the group (Du, 2006; Fan, Wu, & Chiang, 2009; Kollock, 1999; Leshed, 2005; Nonnecke, 2000; Nonnecke & Preece, 2001; Tedjamulia, Dean, Olsen, & Albrecht, 2005).

Some of the studies considered lurkers to be free-riders and conveyed a negative attitude toward lurkers (Kollock & Smith, 1996; Morris & Ogan, 1996; Rheingold, 2000; Wellman & Gulia, 1999). The sustainability of an online community requires fresh content and timely interactions, but the lurkers are considered to just benefit from observing others’ interaction and contribute little value to the community (van Mierlo, 2014). Besides, if there are too many lurkers in a knowledge-based community, the knowledge may not be representative of average web users ((Nielsen, 2011). As a result, even though a proper amount of lurkers are acceptable for large online communities, too many lurkers would impair the vitality of the community.

However, other studies argued that most lurkers were not selfish free-riders who use the common good without making any contribution (Nonnecke, Andrews, & Preece, 2006; Nonnecke, Preece, & Andrews, 2004; Wichmand & Jensen, 2012). On the

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contrary, lurking is not only normal but also is an active, participative and valuable form of online behavior (Edelmann, 2013). Many lurkers thought of themselves as community members, and lurking was an important way for them to join a community (Nonnecke et al., 2006). Nineteen inactive students in an online course said they felt they were learning just as much or more from reading others' comments than from writing their own (Beaudoin, 2002). Lave and Wenger (1999) regarded lurking behavior in a community of practice as a form of cognitive apprenticeship, which can be perceived as legitimate peripheral participation. In an online community, peripheral members are less visible, but they benefit more from knowledge exchange and contribute as much as non-peripheral members (Zhang & Storck, 2001).

This study reviewed 71 literatures on the behaviors of internet users in online communities and built an integrated model to explain the motivational factors of online behaviors, thereby providing explanations of lurking and strategies to encourage posting. The objective of this study was to gain an overall understanding of lurkers and determine answers to the following four questions: how can lurkers be identified? What drives online behaviors? Why do people lurk, and how to promote posting?

2. How to identify lurkers

The Jargon Dictionary (2001) defines a lurker as: "One of the 'silent majorities' in an electronic forum, one who posts occasionally or not at all but is known to read the group's postings regularly." This definition describes two features of lurkers, seldom posting and regularly reading messages, but it does not set a quantitative standard of lurkers. Previous studies have identified lurkers in different ways: the members who never post in an online community (Neelen & Fetter, 2010; Nonnecke et al., 2006), the users who posted messages only once in a long while (Golder & Donath, 2004), the members who made no contribution to the community during a three month period (Nonnecke and Preece (2000)), the users who post three or fewer messages from the beginning or users who never posted messages in the last four months (Ganley, Moser, & Groenewegen, 2012).

A more detailed quantitative standard was proposed by Chen (2004): first, lurkers log into the community every week throughout the six week span of observation; second, the frequency of postings per week is below the average of the online group; third, the frequency of postings divided by the login frequency count exceeds the average of the group. However, these criteria have not been widely used because the size, topic and culture of an online community may influence lurking behaviors. For instance, small online communities that focus on technical topics usually have fewer members but a higher participation rate than large online communities that cover various topics. Thus, the lurkers in technical communities may be considered posters in synthetic communities. Therefore, identifying a certain percentage of most non-active users as lurkers seems to be more reasonable. Rau et al. (2008) defined 40% of the most non-active users of 100 sample users as lurkers in their study, and 40% of the most active user as posters. This classification strategy can distinguish between lurkers and posters and could be used in studies to discuss the differences between two groups.

Some researchers argued that it was unjustifiable to classify participants into discrete categories because participation patterns in online communities vary continuously. Thus Leshed (2005) proposed a model with two continuous dimensions to describe participation pattern. The first dimension is publicity, which is defined as the ratio of public activities (such as posting) to non-public activities (such as reading). Publicity represents the degree of exposure in a participant's activities. The second dimension is

intensity, which identifies the frequency of total activities performed by a participant in the community. Each community member is located in the two-dimensional spectrum created by publicity and intensity. Therefore, the participants who receive a higher score in the intensity dimension and lower score in the publicity dimension are more likely to be lurkers.

In summary, lurkers can be identified by different standards. The term "lurker" qualitatively describes a silent member of the online community, and the criteria of lurker depend on the nature of the online community. In addition, when setting the standards of lurkers, researchers should also take the study purpose into consideration. For example, studies that aim to discuss the differences between lurkers and posters need to set criteria that best distinguish lurkers from posters, such as regarding a certain percentage of most inactive/active users as lurkers/posters. And studies that cover different types of communities may need to define different lurker criteria for different types of communities.

3. What drives online behaviors

Understanding the factors that drive online participation helps to explain the reasons for lurking and develop strategies to motivate posting. Previous studies have identified many factors that influence online behaviors, such as environmental influences (Fan et al., 2009; Tedjamulia et al., 2005), personal characteristics (Bishop, 2007; Du, 2006; Han, Zheng, & Xu, 2007) and organizational commitment (Bateman, Gray, & Butler, 2006). An integrated model of motivational factors of online behaviors was proposed based on the findings in the literature, as shown in Fig. 1. This model divides the influencing factors into four categories: online community factors are the nature of the online community and contain environmental factors that are not related to the users; individual factors refer to the personal characteristics of the users; commitment factors and quality requirement factors are the degree of the commitment and users' quality requirement for the community, and these factors are based on the relationship between the users and the community. The following of this section will explain each category of factors in detail.

In this model, the behaviors of internet users were classified into three categories: community citizenship behaviors, or the development and spread of community norms; content provision, or the contribution of valuable resources; and audience engagement, or the consumption of resources (Bateman et al., 2006). These voluntary behaviors have been frequently discussed in the literature as being important for the viability of online communities. Factors that influence these behaviors were classified into 4 categories: the nature of the online community, which are extrinsic factors determined by online communities; individual preferences, which are intrinsic characteristics of each individual; and organizational commitment and quality requirement, which are based on the relationship between the community and individuals. The following parts of this section discuss these four types of factors.

3.1. Online community factors

The nature of an online community affects the user's impression of the community and therefore influences the user's willingness to spend time or to contribute to the community. The five motivational factors related to the nature of the community are group identity, usability, pro-sharing norm, reciprocity and reputation.

The group identity refers to the common cognitive state of users, as well as moral and emotional connections with the online community (Polletta & Jasper, 2001). Communities with a stronger group identity usually have a greater number of member

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