

By Oded Nov

In order to increase and enhance user-generated content contributions, it is important to understand the factors that lead people to freely share their time and knowledge with others.

WHAT MOTIVATES WIKIPEDIANS?

The last few years have seen a substantial growth in user-generated online content [7, 11] delivered through collaborative Internet outlets such as YouTube, Flickr, or Slashdot.org, as well as more traditional media outlets such as BBC News.com [6]. Consistent with the Open Information Society's vision of decreasing restrictions on the creation and delivery of previously protected information goods [1], user-generated content marks a new way for information to be created, manipulated, and consumed.

Wikipedia, the Web-based user-created encyclopedia, is a prominent example of a collaborative, user-generated content outlet [11]. With more than 1.9 million

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articles created by users in English alone, it is among the top 10 fastest growing Web brands [10] and a promising model for collaborative knowledge sharing [5].

While collaborative content in general, and Wikipedia in particular, receive increasing attention in both the research and the business communities, no empirical, quantitative data is available that illustrates why people contribute to outlets like Wikipedia. Contributors' motivations seem to be critical for sustaining Wikipedia and other collaborative user-generated content outlets, since the content is contributed by volunteers [4] who offer their time and talent in return for no monetary reward. Therefore, in order to understand what underlies user-generated content contribution, we must understand what motivates content contributors, and identify which motivations are associated with high or low levels of contribution.

As a volunteering activity, content contribution to Wikipedia can be explained by the factors underpinning volunteering behavior. In their influential study of volunteers' motivations, Clary et al. [2] identified six motivational categories:

Values. Volunteering gives people an opportunity to express values related to altruistic and humanitarian concerns for others. Given that contributing content to Wikipedia enables participants to actively show their concern by sharing knowledge with others, it is expected that higher levels of the Values function among contributors will positively relate to the extent of contribution to Wikipedia.

Social. Volunteering may provide people the chance to be with their friends or to engage in activities viewed favorably by important others. Given the

Motivation	Question example
Protective	"By writing/editing in Wikipedia I feel less lonely."
Values	"I feel it is important to help others."
Career	"I can make new contacts that might help my business or career."
Social	"People I'm close to want me to write/edit in Wikipedia."
Understanding	"Writing/editing in Wikipedia allows me to gain a new perspective on things."
Enhancement	"Writing/editing in Wikipedia makes me feel needed."
Fun	"Writing/editing in Wikipedia is fun."
Ideology	"I think information should be free."

Table 1. Motivations and questionnaire items.

skills, and abilities. Thus, as contributing content to Wikipedia allows contributors to exercise their knowledge, skills, and abilities, we would expect to see higher contribution levels the more Wikipedia contributors are motivated by Understanding.

Career. Volunteering may provide an opportunity to achieve job-related benefits such as preparing for a new career or maintaining career-relevant skills. In the Wikipedia context, we would expect to find some correlation between contribution levels and the Career function, as Wikipedia offers contributors a way to signal their knowledge and writing skills to potential employers. However, we do not expect this to be a strong correlation, as most Wikipedians are not professional writers, or alternatively, because many Wikipedians contribute anonymously so their contribution would not be useful for career purposes.

Protective. This category includes protecting the ego from negative features of the self, reducing guilt over being more fortunate than others, or addressing one's own personal problems. Wikipedia seems to provide ample opportunity for contributors to address such needs and share the fortune of having knowledge with others who do not have it. Therefore, we would expect contribution to be positively associated with the Protective category.

Enhancement. This category somewhat relates to the Protective category, however, Enhancement involves positive strivings of the ego rather than eliminating negative ego-based factors. Here, too, given

collaborative nature of Wikipedia, we would expect contribution levels to be positively associated with Social motivation levels.

Understanding. Through volunteering, individuals may have an opportunity to learn new things and exercise their knowledge,

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the ample opportunity for contributors to serve the ego and publicly exhibit their knowledge, we would expect the contribution level to be positively associated with the Enhancement level.

Wikipedia relies on the open source model [9] where people contribute their time, talent, and knowledge in a collaborative effort to create publicly available knowledge-based products. Therefore, in addition to the six general volunteering motivations, two other motivations—fun and ideology—used extensively in research on open source software development (for example, [8, 12]) may also help to understand why people contribute to Wikipedia. In both cases we would expect to see higher contribution levels associated with higher motivation levels.

THE SURVEY

Wikipedians volunteer their time and knowledge for no monetary reward, and therefore our questionnaire included contribution measures as well as volunteering motivations measures. The contribution level was measured as hours per week spent on contributing, a measure commonly used as a proxy for participant contribution [10]. Motivation was measured through the volunteering motivations scale [2] adjusted to the Wikipedia context, as well as items adjusted from research on open source motivation measuring ideology [12] and fun [8]. All of the motivation items in the questionnaire were presented as statements to which Wikipedians were asked to state how strongly they agree or disagree on a scale of 1 to 7. Examples of questionnaire items are provided in Table 1.

The English Wikipedia *Alphabetical List of Wikipedians* includes 2,847 people. These are not all the contributors, but rather only those who have created a personal user page beyond merely contributing content, and therefore may be more committed to contributing. Of these, a random sample of 370 Wikipedians were emailed a request to participate in a Web-based survey. A total of 151 valid responses were received (40.8% response rate), of which 140 (92.7%) were from males. The respondents' mean age was 30.9, and on average they have been contributing content to Wikipedia 2.3 years. Like many studies based on survey design, this study may potentially suf-

fer from a response bias, whereby, for example, enthusiastic Wikipedians were more likely to participate than lesser contributors. To test this, responses of the earliest 30% respondents were compared with the last 30% of the sample in terms of the contribution level. No bias was found.

THE RESULTS

The average level of contribution was 8.27 hours per week—a total that varied across Wikipedians' demographics and motivation levels. Overall, the top motivations were found to be Fun and Ideology, whereas Social, Career, and Protective were not found to be strong motivations for contribution (see Table 2). As expected, it was found that the levels of each of the six motivations positively correlated with contribution level (see Table 2). However, somewhat unexpectedly, the contribution level was not correlated significantly with the Ideology and Social motivations.

The Ideology case is particularly interesting, because while ideology is indicated as a strong motivation (ranked second out of eight), the motivation level is not significantly correlated with the contribution level. In other words, while people state that ideology is high on their list of reasons to contribute, being more ideologically motivated does not translate into increased contribution.

One way to explain this finding could be the effect of social desirability [3] on responses to the questionnaire. This explanation, however, is ruled out since part of Crowne and Marlowe's scale [3] was used to control for social desirability. An alternative explanation might be that while people have strong opinions about ideology, these do not translate into actual behavior—thus exhibiting a case of “talk is cheap.” Another possible explanation might be that contributors who are motivated by ideology may also contribute to other ideology-related projects, such as open source software projects, and would therefore have less time to contribute to each project.

The lack of correlation between the Social motivation and the level of contribution may be explained by the identity of the Wikipedian's “important others;” that is, if important others are people who do not have interest in Wikipedia, then the Wikipedian's contribution is not expected to be influenced by the Social

Motivation	Mean
Fun	6.10 (1.15) [0.322***]
Ideology	5.59 (1.71) [0.110]
Values	3.96 (1.55) [0.175*]
Understanding	3.92 (1.48) [0.296***]
Enhancement	2.97 (1.39) [0.313***]
Protective	1.97 (1.05) [0.306***]
Career	1.67 (0.94) [0.185*]
Social	1.51 (0.92) [0.027]

*significant at 0.05 level
**significant at 0.01 level
***significant at 0.001 level

Table 2. Motivation levels and correlations with contribution levels. Standard deviations in parentheses. Pearson correlation coefficient in brackets.

motive. Further research would therefore be helpful in order to explore the Wikipedian's reference group.

In addition, age was found to be significantly correlated with the level of some of the motivations: the older people are, the higher their motivations levels of the Enhancement, Fun, and Protective motivations.

CONCLUSION

Wikipedia is a prominent example of a collaborative user-generated content outlet based on the open source model, and a promising model for knowledge sharing [5]. Given the changes in the restriction practices associated with information creation and use [1], and the growth of user-generated content [7], organizations and media outlets such as YouTube, Slashdot, or the BBC, who wish to draw on such content, must know what motivates contributors and which motivations are associated with increased contribution.

Assuming that the correlations found also involve causality, user-generated content outlets that seek to recruit and retain volunteering content contributors, must focus their marketing, recruitment, and retention efforts on those motivations that are high in relative importance (that is, ranked high in Table 2) and where a strong correlation exists between the level of motivation and the level of contribution. For example, the Fun motivation is a case where there is both high ranking of the motivation and a strong, significant correlation between motivation and contribution levels, and therefore it would make sense for organizers of user-generated content outlets to focus marketing, recruitment, and retention efforts by highlighting the fun aspects of contributing. Ideology, on the other hand, is a case where high ranking is not coupled by a strong correlation with the contribution level, and therefore efforts should not be directed there.

The positive correlation between age and Enhancement, Fun, and Protective may imply that user-generated content outlets should increase their emphasis of aspects relating to these motivations when targeting older prospective and existing contributors.

The growth of collaborative user-generated content warrants further exploration. One area to explore is women's contribution to Wikipedia. Women represent only 7.3% of the survey respondents, and therefore most of the analysis of the differences between men and women responses is not statistically significant. Some differences, however, seem to be apparent: women are relatively newer to Wikipedia contribution (1.77 vs. 2.34 years of contribution, on average) and spend more time contributing (11.46 vs. 8.02

hours a week, on average). The latter difference cannot be explained by the former, as no correlation was found between experience and contribution. This may suggest that as more women become Wikipedia contributors, average contribution levels increases. Another direction that warrants further exploration involves understanding how different motivations impact contribution in different content outlets. This article, addressing one of the most prominent and generic examples of user-generated content, is hopefully a useful step in this direction. **□**

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