

# Why Do People Write for Wikipedia? Incentives to Contribute to Open-Content Publishing

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**Abstract.** When people learn that we have spoken to individuals who spend up to 30 hours a week volunteering their time to research and write for an open-content encyclopedia, we often hear the same question: “Why do they do it?” The fact that this encyclopedia does not provide bylines to credit authors for their hard work makes the scenario still less fathomable. Two rounds of interviews with 22 volunteer encyclopedia writers in the fall of 2004 and spring of 2005 revealed that, in some respects, the incentive system that motivates contributions to the open-content encyclopedia Wikipedia resembles that of the scientific community. Like scientists, contributors to Wikipedia seek to collaboratively identify and publish true facts about the world. Research on the sociology of science provides a useful touchstone for considering the incentive systems embedded in the technology and culture of online communities of collaborative authorship. In this paper we describe some of our findings in the context of Latour and Woolgar’s seminal work on the incentive systems that motivate publishing scientists. We suggest that minimizing reliance on “hard coded,” stratified user privileges and providing indicators of engagement in desirable activities can help support the growth of incentive economies in online communities.

## Introduction

Prolific communities like Wikipedia provide interesting cases for examining technical and social incentive mechanisms in online communities. Wikipedia is a highly productive community of collaborative authorship in which individuals contribute to an open-content encyclopedia by adding content and revising others’ work online. Like scientific communities, contributors to Wikipedia seek to collaboratively identify and publish true

facts about the world. Unlike scientific publications, Wikipedia does not explicitly credit authors for their work in bylines; the radical collaborative model simply does not afford direct attribution of authorship. By using traditional communities of authorship and publication as a point of departure, we can ask interesting questions about the nature of incentives in Wikipedia and similar online communities. In what ways does the incentive structure that supports the process of publication and fact-making dialog in the sciences reveal itself in the Wikipedia community? What are the implicit messages about collaboration and truth that are embedded in traditional incentive systems associated with publication? Do the social and historical meanings of publication as incentive in the sciences lend themselves to replication in a radically collaborative authoring environment like a wiki?

We seek to develop an understanding of open-content publishing systems by first describing research on incentive systems in the scientific publishing community and then using this model as a framework for understanding the experiences of contributors to the Wikipedia.

## Incentive, Authorship and the Scientific Community

Before we can understand the ways that the long-standing practices of the scientific community can guide our investigations of online communities, we must identify salient features of incentive in the sciences. Among the best-known and earliest sociological explorations of scientific practice were Latour and Woolgar's anthropological investigations of scientific laboratories (Latour & Woolgar, 1986). Alongside a wealth of information about how scientific practice is situated in its instruments, offices, and laboratory spaces, these studies clearly described an elaborate incentive structure linked to publication.

Latour and Woolgar found that, for the scientific community, the most critical organ of the incentive system is the *cycle of credit*. Credit refers simultaneously to two dimensions of social status in the scientific community. First, it is fundamentally linked with an individual's ability to act in the community and effect change through the assertion of claims. It is in this first sense that the cycle of credit describes how credit becomes manifest in grants, equipment, data, ideas and publications. Second (and secondarily), credit is a reward mechanism that marks one's past contributions. The notion of credit is complex and accruing credit is no straightforward process; it is associated with a continuous social process of peer-review and allocation of prestige over long periods of time. Early in their work, Latour and Woolgar observed that scientists often used the term "credit" to describe something given or received; however, in the course of their studies, they realized that the term stood for much more than the metric of a straightforward reward system. In fact, what seemed to drive scientists and motivate them was a sense of *credibility* that allowed them to assume more and more central roles in the scientific community. In its fullest sense, "credit" is not something that is given or received by individuals in the community, but a measure of power and efficacy.

It is important to note that although credit is linked with publication, the relationship between accruing *credibility* and publishing is subtler than the simple act of claiming authorship. Instead, it is a continuous cycle of strategic resource reinvestment of which publication is only one part. This will be important as we consider the incentive structure in Wikipedia. In summary, Latour and Woolgar found that reward is not the basis of the incentive system in the scientific publishing community; instead, incentive involves the allocation of power, resources, and the ability to reinvest and realize the benefits of reinvestment (in the form of more credibility) as quickly as possible.

## The Case of Wikipedia: Interviews with 22 Wikipedians

Two rounds of interviews with 9 and 13 Wikipedians in the fall of 2004 and spring of 2005 revealed that in some respects, the incentive system that motivates contributions to Wikipedia resembles the incentive system observed in the scientific community. The notion of credit exists in Wikipedia both as reward and as credibility that empowers individuals in the community. Still, the nature of the encyclopedia-writing enterprise, the technology on which the community is built, and the values of the community change the incentive system in important ways.

Perhaps the most flagrant difference between the scientific community and Wikipedia is the indirect attribution of authorship. On the surface, it appears that contributors receive no credit whatsoever for their contributions. None of the articles are signed; most have been edited numerous times by numerous people and explicit attribution would seem to be impossible. In fact, interviews revealed that Wikipedia authors recognize one another and often claim ownership of articles:

At this point, about 1600 English language articles [are] on my watchlist. Some of those are my own, some of those I've made significant contributions to but didn't start them, and a good number of those—because I've become a well-known person in that community—somebody has specifically invited me to come in and look at the article because it's one that has had controversies. For example, a lot of articles related to the Israel-Palestine situation, I've done very little writing on them myself, but I have been very involved in the discussions on it. (BJ-1)

In some ways you get recognized, you get some respect, recognition from your fellow...here's somebody who knows his stuff, who writes good articles and so on and so forth, and you feel happy when one of them puts a posting on your talk page. (SB-5)

Recently I've been working on the article... as a featured article candidate. If my article is accepted as a featured article, it will appear on the main page with a multi-paragraph excerpt and photo. Featured articles stay on the front page for a day, and then they're swapped for another, so I'm really just trying for bragging rights with this one. (SB-9)

One of the things I try to do if I write a new article, I try to get it put on the front, on the main page, there's a section called "Did you know?" ...Once it gets there, it usually attracts 10 to 20 people in the next few days. They'll come and not only work on it but put it on their watchlist, when that happens it definitely makes the article much, much better. (JM-1)

Although the culture forbids individuals from explicitly claiming authorship within an article—it simply isn't done—the technology provides indirect ways of establishing ownership. First, the editing history is available for every article, so it is possible to ascertain who created an article in the first place and to review each change to identify the most substantial contributions. Second, contributors often claim ownership of articles on their own user pages by creating lists of the articles for which they believe they ought to receive credit. Some Wikipedians include elaborate “resumes” on their userpages.

We see both through observations on the site and participants' descriptions that authors claim and receive credit in Latour and Woolgar's secondary sense—as reward for a contribution to the community. How does credit manifest itself in Wikipedia as credibility that can be reinvested in the encyclopedia-building endeavor?

There are both technological and human resources that administrators use to influence the character of Wikipedia content. By what processes is credit invested in these resources? Anyone may become an administrator; however, since administrators are voted in, one must have accrued the requisite *credibility* in the community to receive unanimously positive votes.

Accruing credit is not the process of a straightforward meritocracy. One Wikipedian expressed his frustration with the politics of credit on Wikipedia:

You have... people who never ever get name recognition at all, but they've created a huge amount of high quality content and haven't caused trouble and have behaved themselves and nobody knows them. For example, when I was running for administrator a couple of votes said “I never heard of this guy” about me, even though I had done quite a bit of work. Then I see other people getting voted to be an administrator and everybody is making the comments “Gosh you're not an administrator already? I thought you were already administrator. Of course I'm gonna vote for you”. I compare our relative edit history and this other person who everybody knows really has not created that much content. (JM-2)

Aside from confusion about *how* it is appropriate to make a name for oneself, there is controversy over *whether* one should make a name for oneself. Many members of the Wikipedia community subscribe to a populist, egalitarian view of knowledge production. This stands in contrast to our comparison case, the scientific community. Reconciling an epistemological commitment to the experiences of the everyman with a need to create an encyclopedia that is perceived as being a reliable resource has led to confusion about the role of identity and one's credentials. Some Wikipedians expressed indifference to the possibility of establishing an identity on the site; clearly, the relationship between individual contributors' authority and the reliability of the Encyclopedia is not well established.

One only need ask a librarian about the reliability of Wikipedia content to discover that credibility in Wikipedia is a localized phenomenon. Credibility in the Wikipedia does not translate to credibility in broader social contexts in the same way that credibility in the sciences does, nor is the ability to create content and effect change in the Wikipedia community firmly moored to credibility as in the scientific community. Although local mechanisms have emerged for accruing credit, it is easy for a newcomer to enter into the community and quickly begin to direct the character of the content and

the discussions that happen on the site. Without this relatively low barrier to entry, the community would be difficult to sustain. In fact, a more rigorous peer-review process resulted in the demise of the Nupedia, which was the original form of Wikipedia (Sanger, 2005). One interviewee expressed a concern that credibility on Wikipedia and credibility in broader contexts could be conflated:

I'm not happy with the way that you can start a page for yourself or your username. That doesn't seem like it makes much sense to me. That seems like people could be using it for nefarious purposes, which I wouldn't doubt. And people can also make themselves look credible through what they post on Wikipedia. (AF-1)

Despite the many similarities we observed, one final, important difference sets Wikipedia apart from the scientific community. Wikipedians are not engaged in primary research. The encyclopedia-writing endeavor requires a different kind of credibility than scientific inquiry. For encyclopedists, it is important to write well from multiple sources and reliably assess those sources. These are the activities to which credibility in Wikipedia must be linked in order to sustain productive investments from members.

## Implications for Designing Online Communities

Naturally, an economic model of incentive fails to account for many facets of motivation that attract and sustain involvement in communities, scientific or otherwise. Still, whatever the motivations that participants bring to a social interaction, an incentive economy provides a continuous and coherent framework for sustaining participation. Whether a scientist first enters a field to help ensure that her country has clean drinking water, because she feels compelled to fulfill familial expectations, or because she had a fantastic biology teacher, the accumulation and investment of credit provides an incentive system that lends structure to each contribution she will make throughout her career.

Likewise, the design of communities in an online environment must meaningfully structure participants' contributions in a way that sustains involvement. That means moving beyond the use of straightforward rewards and into the realm of incentive economies that allow productive participants to achieve higher levels of efficacy and responsibility in the community. Amy Jo Kim's recommendation to reward regulars and empower leaders speaks directly to this need for incentive economies (Kim, 2000). Latour and Woolgar's model suggests that incentive systems need not result in explicit stratification where some users fill leadership roles and others do not, but instead, can lead to a system in which gradations of credibility (and power) are subtly determined through interaction and discourse. This is accomplished by creating a need for participants to invest themselves in the community. In Wikipedia, the power of participants is not clearly circumscribed by the technology; although administrative powers are held by some and not others, the process for granting and gaining administrator status is open to anyone "off the street" who can provide a compelling image of himself. We saw in interviews that many long-standing community members

and relative newcomers held equivalent technological power in the community. Yet, long-standing members described activities that revealed their clout, such as liaising between Wikipedia and other communities and establishing joint projects.

One way that members invested more of themselves in the community of Wikipedia was through their presence on multiple channels of discourse. Discussion pages, meta-pages, announcement pages, mailing lists, and IRC provide multiple channels for involvement in the Wikipedia community. If a participant wants to accrue more credibility, one way to do so is by participating in multiple channels; this requires a substantial time commitment. The system works remarkably well as it is and we do not fully understand the balance of the credit cycle in Wikipedia. One can imagine experiments that explicitly anchor credibility in some desirable form of investment (say, authoring rather than politics). For example, the software might tie some obvious indicator of community members' contributions to their username rather than relying on participants to ferret out and interpret editing histories.

We suggest that very simple features in online communities can help guide the development of an incentive economy. First, although some thresholds for granting technical powers may be necessary, pains should be taken to keep "hard coded" stratification of participants' power to a minimum in order to allow for incremental and socially-agreed upon leaders to emerge. Second, technology can be used to identify engagement in behavior that we want to link with credibility. Unlike scientific communities, new online communities do not have the benefit of hundreds of years of refined methods or citation practices to help structure cycles of credit. Providing some obvious indication of what kinds of activities warrant higher levels of credibility may help fledgling communities grow in desirable directions as participants invest their time and identities.

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