

“Cool” or “Monster”? Company Takeovers and Their Effect on Open Source Community Participation

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ABSTRACT

In this study, we investigate the effect of takeover announcements made by open-source software (OSS) steward firms, on participation in an OSS newcomers' online community. We examine a MySQL newcomer forum before and after two takeover announcements – the January 2008 announcement of MySQL's takeover by Sun Microsystems, and the April 2009 announcement of Sun's takeover by Oracle. We find that the impact on participation depends on how the acquiring company is perceived. The announcement of an acquisition by a company perceived as hostile had a negative effect on participation, whereas announcement of acquisition by a more friendly company was found to have no effect on participation. These changes in participation occurred without any accompanying change in the product itself, or its licensing. This work provides the evidence of the effect of external events on online participation.

Author Keywords

Open source software, online communities, external jolts, MySQL, Sun Microsystems, Oracle,

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

In recent years, numerous researchers have examined an extensive variety of online communities to identify factors that affect user participation in these communities. Researchers have paid particular attention to factors that motivate people to participate in online communities and once participation reaches a critical mass, how is it

sustained and what kind of social and governance structures emerge [13, 14]. Based on a close inspection of these factors, an influential stream of research has developed which suggests that online communities can be designed to be inclusive and self-sustaining and consequently many design principles have been synthesized and recommended [2, 8, 12].

Although this body of work has significantly improved our understanding of online communities, what seems to be missing from this body of work is an understanding of how online participation might change as a result of external or exogenous events whose influence is outside the scope of community design or its governance structure. Online communities, similar to offline communities, are embedded in larger organizational and institutional contexts. For instance, many online communities are hosted and run by commercial firms (e.g. Amazon, Usenet by Google, Yahoo Groups, Google Groups, Facebook), by professional associations, educational institutions, and other formal and information organization. In particular, open source software communities often benefit immensely from the stewardship of commercial firms that either developed the initial software or are its bigger user and supporter (e.g. Java and Sun Microsystems).

A deeper understanding of the role of external events can complement the body of knowledge on community systems design and enhance our understanding of participation changes that accompany external events. In this paper, we take a first step in this direction by examining the changes in participation in an online community that accompany two significant events. We identify the perceived image of the steward company as a key factor determining participation. The image of a host is especially important for communities associated with software products and community supported software products such as open source software, since these are likely to change hands through mergers or acquisitions. In the rest of the paper we first review the background literature, followed by a description of the research study and analysis, and finally we discuss the findings and its implications for the study of online communities.

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iConference 2011, February 8-11, 2011, Seattle, WA, USA
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BACKGROUND AND RELATED WORK

In the last few years, the nature and design of online communities has been studied extensively by information science researchers. Such studies have often focused on the factors that affect participation in communities. For example, Butler [4] advanced a resource-based model of online communities and showed how community activity and membership size have to be balanced to ensure that an online community remains viable. Particular attention has been given to the design of communities in order to foster newcomer participation. [2] and [12] showed how social psychology theories – such as common bond theory and common identity theory – can be useful for understanding, designing and managing for online communities newcomers participation [12]. Socialization of newcomers was found to essential for the growth and sustainability of the community, especially to avoid the decay in volunteers' participation, which is an essential recourse for online communities [13]. Several scholars have advanced design principles that promote newcomer participation in online communities [5]. For example, it has been shown that behaviors of politeness and rudeness play an important role in attracting appropriate responses in online communities [3]. In open source software development communities, sustained participation has been linked a number of factors, including governance structures [14], situated learning and identity construction behaviors of participants [6], and ideology [15].

External Jolts

Not all changes and interactions in online communities can be attributed to internal factors. External environment changes can affect a community or organization in a variety of ways, and in this study we use the concept of environmental jolts [9] to exemplify the effect of large-scale events on participation. Jolts are transient shocks that cause temporary disruptions that perturb their organizational inhabitants and then they subside [11]. An important characteristic of jolts is that even though they might be expected, their exact occurrence is difficult to foresee [9, 11]. They are also open to diverse interpretations within an organization and can be seen as opportunities or threats. Overall, environmental jolts rarely threaten survival of soundly designed organizations, but they can trigger responses that reveal how organizations adapt to their environments [11].

RESEARCH STUDY

Setting

MySQL is a highly popular Open Source database software. It is a relational database management system that runs as a server providing multi-user access to a number of databases. The MySQL development project source code is available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL is a key part of the LAMP (Linux, Apache, MySQL, PHP/Perl/Python), the widely used open

source enterprise software stack and therefore used as a solution stack for application servers. MySQL is used by a wide variety of organizations, including Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube and Wikipedia. It was originally developed by David Axmark, Allan Larsson and Michael Widenius, and was then owned by a MySQL AB, a Swedish company. MySQL was first released internally in May 1995 and the Windows version was later released in January 1998 for Windows 95 and NT. MySQL 5.5 is currently available in pre-release (as of June 2010).

In January 2008 Sun Microsystems announced the acquisition of MySQL AB. Sun kept MySQL as an open source product. Oracle, which had earlier acquired InnoDB (which develops the InnoDB storage engine that allows MySQL to provide various functionalities) and Sleepycat Software (the makers of Berkely DB, a basis for another MySQL storage engine) acquired Sun Microsystems as well in January 2010. However, Oracle has committed to the dual licensing with commercial and GPL version for MySQL server until 2015.

We studied a newcomer forum for MySQL developers and users (<http://forums.mysql.com/list.php?10>). The choice in this particular forum was made for several reasons. First, newcomers indicate participation and product uptake increase or decrease. Second, MySQL is a very popular open source database management system, and therefore the findings may be more reflective of general trends in open source software and their related communities. Third, several incidents in the recent past of MySQL – its acquisition by Sun Microsystems (a proponent and major contributor of open source software and systems) and then the subsequent acquisition of the steward company Sun by Oracle (MySQL was among other few Open Source Relational Database Management Systems that were a direct competition to the Oracle Flagship), both offer useful setting for a natural experiment in which changes are being the result of external events rather than researchers' intervention.

METHOD

We use the natural experiment method, which is commonly used in a variety of disciplines such as sociology, economics, political science and medicine [9]. In a natural experiment the treatment is not administered by the experimenter, but by exogenous events outside the control of the researcher. As such, natural experiments provide an opportunity to examine data as a real-world experiment. The method is therefore particularly useful for examining the effects of public announcements on user participation. In the present study, we examine changes in participation in MySQL newcomer forum before and after two takeover announcements – the January 2008 announcement of MySQL's takeover by Sun Microsystems, and the April 2009 announcement of Sun's takeover by Oracle, even though the product (MySQL) does not.

Data Collection

The data collection procedure involved parsing information from the online web pages and storing them as a relational database. We created three main datasets based on the activity in the forum during a four year time window starting 1st January 2007 through 31st May 2010 (to include a pre and post period for both the events – Acquisition by Sun (February 2008) and the Sun – Oracle deal (April 2009)). The categories were: 1) User information, and, 2) Discussion thread information.

The User information dataset captures details about all the registered users posting within the forum during the given time frame. The Thread information table details each thread that appears within the forum. At the thread level we have gathered information like the thread ID, thread subject, post date, post time, and the post content. This exhaustive table contains information on all individual posts/messages in the forum. All information is stored in a relational database to enable easy data access and manipulation.

Analysis

We compared the number of new users who registered to the forum, as well as the number of discussion threads in the forum, in the eight months before and after the acquisition announcement of MySQL by Sun Microsystems. Next, we compared the number of users and threads in the twelve months before and after the acquisition announcement of Sun by Oracle (the difference in the length of the periods analyzed is due to the availability of participation data).

RESULTS

The results of the quantitative analysis of forum participation before and after the announcement reveal no significant difference in participation dimensions (see Figure 1).

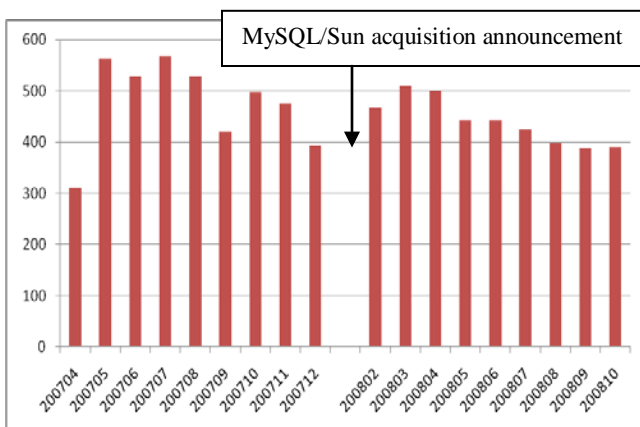


Figure 1. New user registration before and after the Sun-MySQL acquisition announcement.

The average number of new forum users per day as well as the number of discussion threads decreased slightly, but not

in a statistically significant way. Mixed views on the effect of the pending acquisition were also reflected in users' postings in various discussion venues (see Figure 2).

Figure 2: Slashdot postings about the Sun acquisition

"There are many of us who have been working on MySQL for many years (my efforts with MySQL begin a decade ago). None of us are willing to move away from our open source roots. I've seen nothing that makes me think that Sun had any interest in doing anything foolish. They understand the value of MySQL being open source."
Krow, January 16 2008

"Are these great news? It's hard to know in which direction will big companies move. But if Sun keeps it's current track, I would say these are great news."
Slashidiot, January 16 2008

To further investigate the perception of the user community on Sun's takeover of MySQL, we performed an analysis of major news outlets (both online and offline) using online search tools and databases such as ProQuest. In particular we looked at user sentiments based on their comments to online news items. Although the views were mixed, they generally leaned towards a positive feeling. Figure 3 showcases a representative sample of comments.

Figure 3: User comments on news about the Sun acquisition

It will stay open source

by devnull01 January 16, 2008 6:59 AM PST

With a quite good insight in Sun I can say that it's a sure bet that MySQL will stay open source. The commitment to open source in Sun is no gimmick it's actually the real thing.

Oh Really!

by maverick_nick January 17, 2008 12:15 AM PST

Well I guess that you don't know much about Sun, do ya?

Sun is a great company that is committed to open source, and good products. I think that this is great news for the MySQL community, because now finally MySQL can really begin competing with the proprietary systems like MS SQL Server - which is brilliant, and would be pretty difficult to beat.

Tim O'Reilly | @timoreilly | Comments: 26 | 16 January 2008

I think Sun makes a great OS and has made good contributions to the standards community, but they aren't really all that great (at least not yet, despite trying pretty hard) at the "Open Source thing", and saying they are and backing it with self-proclaimed inaccurate studies don't make it so.

Robert [16 January 2008 10:33 AM]

I don't have any worries at all. I think Sun is pretty much going to let it run as is.

Marco [16 January 2008 10:44 PM]

I think Sun is the right partner for MySQL. Can't imagine a better one. I'm excited to see how things will improve, there are so many things Sun can do at MySQL.

A different pattern was observed following the Sun's acquisition by Oracle announcement in April 2009 (see Figure 4): the average number of new forum users per month dropped sharply, from 412.2 to 314.4 ($t=6.43$; $p<.001$), and the average number of discussion threads per day dropped from 656.8 to 609.4 ($t=2.11$; $p<.05$).

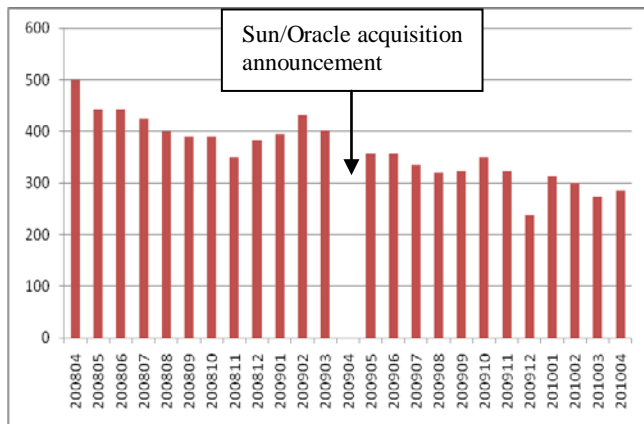


Figure 4. New user registration before and after the Oracle-Sun acquisition announcement.

The drop in participation may be attributed to the perceived identity of the acquiring company, in this case Oracle (see Figure 5).

Figure 5: Slashdot postings about the Oracle acquisition

*"I find this all very sad. Sun was one of the Unix innovators from the earliest days. Even when they grow large, they still seemed like a "cool company." ... Oracle seems to be the antithesis of this; major, corporate, gouging, monster... One can only hope that some of Sun's culture and products will survive."
PhotoGuy, April 20 2009.*

*"...As for MySQL, the Oracle benefactors will say: do not worry, my dear people, we will keep it with true love, and gradually let it become deprecatingly obsolete."
Linhares, Apr. 20th 2009.*

Qualitative analysis of the threads revealed that the content was similar to that before the events and there were no messages that referred to the acquisition. The questions and the responses were all related to technical issues.

Once again, to further investigate the perception of the user community on Oracle's takeover of Sun, and consequently of MySQL, we performed an analysis of major news outlets (both online and offline) using online search tools and databases such as ProQuest. We looked at user sentiments

based on their comments to online news items and the overall perception of the acquisition was quite negative. Figure 6 showcases a representative sample of comments.

Figure 6: Slashdot postings about the Oracle acquisition

by EcuadorHomesOnline April 20, 2009 11:32 AM PDT
I've never been a fan of Oracle, and even less so of Larry Ellison - he's just too full of himself. But this move does make sense for both companies. A packaged database platform with "tweaked" hardware acceleration could be interesting.

by device0 April 22, 2009 6:28 AM PDT
With this move, Oracle is more evil than Microsoft. No more freedom for the customers to chose.
Only one box hardware supported, only one OS only one software vendor only one service provider.
But meabe they are right, as Sony does the same with Playstation ;).

by Sea of Cortez April 20, 2009 1:49 PM PDT
BTW, I have written about this issue in much more detail on my Blog, which you can read and join the discussion here:
http://www.anoox.com/news/show_selected_article.php?article=33599
If we do realize that the true intention of Oracle is to KILL MySQL at great expense to the Internet community, we can STOP this, IF we do not come together and stop this then Oracle will get away with killing MySQL to great determinant of the Internet community.

by Marcus Westrup April 20, 2009 9:16 AM PDT
I suspect that Larry Ellison would like to see MySQL fade out of the picture altogether. The open source community could respond by forking the code to keep a version free and open, but legal maneuvering and FUD by Oracle could be in the future for this project.

DISCUSSION AND CONCLUSION

As the selected quotes suggest, the perceived identity of the acquiring company may be based on expectations for tangible changes (i.e. lack of investment, and eventually product obsolescence), or simply a more general perception about the company's identity (Sun as the "cool company" vs. Oracle as a "gouging, monster"). Thus, users may decrease their participation because the values associated with the new steward company may be perceived to be incongruent with the values of the old steward company, and with which users identified. Further research may help to determine the extent to which this factor is at work. The lack of significant change after the announcement of the MySQL AB acquisition by Sun may be attributed to the relatively similar perceived identity of both companies, as supporters of free and open source software.

The findings are important for companies interested to involve users in activities related to their products, and in

particular, companies which are involved in the development and stewardship of open source software. The findings suggest that it is essential for such companies to actively address concerns that might arise due to changes such as acquisitions, even if such changes involve no change in the product itself.

The findings presented here add to the growing body of knowledge on community, and open source software development participation, by providing evidence of the effect of external events on participation. In particular, the results of the present study support the findings of a recent study of Java community participation, where an open sourcing announcement led to an increase in participation and an acquisition by Oracle led to a decrease in participation. [7].

Whereas the majority of prior work on online communities has largely focused on users' motivations for participation, community governance structure and the design of communities to foster participation, the present study sheds light on the role of external events. Future work may be helpful in addressing specific issues such as preparedness to respond to external jolts: if the external jolt is predictable – as many are – can community leadership prepare for them? Another issue the findings raise is the possible importance of a change of perspective, that is, in cases where community activity is a critical aspect of a firm's product, response to external events should be taken into account by company leadership before decisions are made. Strategies can be adopted that facilitate the monitoring of ongoing activities in an online community. Future research is needed to develop new ways of understanding the effect of external events on community participation.

As with any research study, this study has certain limitations. We attribute the primary exogenous effect to Oracle's and Sun's relative perception by the community. While this seems plausible, we recognize that it is probably not the only source of difference between the companies. Therefore, the findings should be interpreted cautiously. In addition to Slashdot we have performed an analysis of news sources and associated comments but a deeper analysis of community sentiment, through surveys for instance, would make for a more convincing case. We plan to pursue this in future work.

ACKNOWLEDGMENTS

We acknowledge funding from the U.S. National Science Foundation under award #EEC-0935143. Views expressed are those of the authors and not necessarily of the funding agency.

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