

Analytics on Online Discussion and Commenting Services

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Abstract. From the view of design claims for online communities, it is very crucial to take interactions among members in a community into account when starting and maintaining it. This means managers of online communities need to technically support their members through online discussion and commenting services. Online discussion and commenting service, so called, blog comment hosting service, helps communities to provide their members with feedbacks of others, since such feedbacks play much important role in starting and maintaining an online community. Through online discussion and commenting services, we can post a comment on the website using our own social network service account if the website uses a social comment platform. Whenever, whatever, and wherever users post a comment, every comment is integrated and managed by the social comment platform. One of most powerful social comment platforms is Disqus. It is the social comments platform or social discussion platform used in the world popular websites such as CNN, Billboard. Thus, we analyze it in various views and give a several suggestions to make the websites more active. Main findings reported in this paper include significant implications on the design of social comment platforms.

Keywords: Design Claims, Online Community, Disqus, Online Discussion and Commenting Service.

1 Introduction

Most online communities don't practically fail in their business. There are thousands of online community projects that have been created, and only the 10.3% of them have more than three members [1]. From the studies on boosting up online communities, many key words are extracted: motivation, incentive, Q&A, contribute, commitment, regulation, newcomers and so on. These are highly related to success of an online community. In other words, we need to take them into much account in analyzing an online community in order to start up and encourage it. Some of them such as motivation, incentives, Q&A are basically necessary to follow design claims to make an online community successful. The others directly guide it into being valuable. Based on design implications for the successful online community, their effects are simple and clear. Most of them are due to the increase of the members' motivation,

contributions and commitments to a community, facilitating communications between the members, in particular, new members and existing members, regulating users' behavior to protect a community from trolls and manipulators, as well as the increase of new members and changing benefits for a community.

In terms of information organization and interaction with community members to encourage online communities, it is also important to technically support them with online discussion and commenting services such as Disqus, IntenseDebase, Livefyre, and Echo. Online discussion and commenting service, so called blog comment hosting service, helps communities to provide members with feedbacks of others. Feedbacks play much important role in starting and maintaining an online community. They can enhance motivation to perform community's tasks [2]. Moreover, discussing and commenting mean there are interactions between members including newcomers, which enables communities to be active and to make up a strong band their members. In this research, we introduce and analyze online discussion and commenting services, especially Disqus, in terms of online community design. Disqus is one of the most popular online discussion and commenting services for websites and online communities that use a networked platform. The platform includes various features, such as social integration, social networking, user profiles, spam filtering and moderation tools, analytics, email notifications, and mobile commenting. It is featured on many major publications, such as Engadget, CNN, Daily Telegraph and IGN. News sites and online communities including private blogs that allow the owners to change HTML tags can be applied Disqus services to. This absolutely makes online communities support members exchange their opinions and comments. Consequently, according to a March 2011 study by Lijit, Disqus is used by 75% of websites who use a third party commenting or discussion system.

The purpose of our research is to analyze how the online discussion and commenting service is actually used to boost up online communities and to give some design claims to make them better. For those purposes, we first review design claims to make online communities successful in section 2. Next, we analyze online discussion and commenting services including Disqus in section 3. Subsequently, some analysis on comments in Disqus will be covered in section 4. Finally, discussion on pros and cons of the Disqus service will be given as well.

2 Design Claims for Online Community

Online community is a group separated by space and time [3]. The other key concept behind online community is the use of networked technologies in one form or another to collaborate and communicate. It is also purposely designed by starters.

Starting and maintaining online communities should be much systematic and specialized to be successful. In order to start new online communities, Resnick et al. [1] suggest three major challenges. The first is to manage to obtain a position among online communities even though it is quite small. The second is to keep that position in the competing communities and to provide alternative ways that potential members can spend their time. We need to make strategic choices about the scope of the community

and about its compatibility and integration with other communities to meet these two challenges. The third challenge is to get to critical mass. A new community must recruit members before it has become a kind of community that they will value. There are a number of design approaches to meet this challenge, including substituting a professionally-generated content for a user-generated content in the early stages, leveraging early participants to attract later ones, and setting expectations about the likely future evolution of the community. Here is some design claims mainly considered to begin new online communities, especially in terms of the interaction among members.

Single-user and small-group productivity, entertainment, or commerce tools can attract people to an online space before the community features are successful [1].

Many online sites with successful social content started by providing valuable services to their customers in the absence of a critical mass in the online community. Instead of offering a service that is individually valuable to one person, it is sometimes possible to offer a group service that is valuable to a small enough group that the group can collectively decide to join. For example, Yahoo! Groups, for example, is a community-hosting service that allows anyone to create a group (complete with e-mail list, discussion board, photo storage, calendars, and other tools). Amazon.com is another example of site that attracted initial users for shopping. It has a large collection of successful social content options within its site. It uses collaborative recommender technologies. Amazon amassed a critical mass of people and data by offering a distinctively non-social application.

Therefore, most design claims including one thing mentioned above emphasize on increasing members' motivation and commitment to communities, facilitating communications, and increasing new members. Online discussion and commenting services can't perfectly support all of them. These design claims, however, enable us to analyze how they are useful and helpful to manage online communities. Chua et al. [4] reveal in their recent study that based on the content analysis performed on a sample of 1,800 messages from six online discussion communities (ODCs), ODC users seemed to be engaged in a combination of online interactions to satisfy human sharing needs such as to share or acquire knowledge, establish a social presence and convey emotions. This implication represents how important online communities support a discussion and commenting service to their members. N.F.Ali-Hasan et al. studied on the social relationships on the blog through links and comments. They considered blogs as social networks and applied social network analysis method on the blogs to find out the way individuals share their information and how interact socially via blogs. They found out that many interactions occur in comments written by bloggers on a post of another blog [5].

3 Online Discussion and Commenting Service

Currently, there are several online discussion and commenting services such as Intense-Debate, Livefyre, Echo, and Disqus. ¹Many such services allow for users to log into a

¹ http://en.wikipedia.org/wiki/Blog_comment_hosting_service

blog comment hosting service using social network profile credentials, for example those of Facebook Connect, Yahoo!, Google, LinkedIn, MySpace, etc. Such services may also have an effect upon the instantiation of comment spam, as a prior registration to the comment hosts may be the only means by which to make comments onto many blogs.

Disqus² platform includes various features, such as social integration, social networking, user reputation, spam and moderation tools, analytics, email notifications, and mobile commenting (Figure 1). Disqus is featured on many major publications, such as Engadget, CNN, Daily Telegraph and IGN. The service offers a networked comment system used to foster engagement and connect audiences from around the web. It looks to make it very easy and rewarding for people to interact on websites using its system. Commenters can build reputation and carry their contributions from one website to the next. Using the Disqus' built-in network effects, bloggers and publishers can expect a higher volume and higher quality of conversations by using the comment system. Both the Disqus website and comment system are translated into more than 60 languages. Besides, it works in all major web browsers, including Internet Explorer, Firefox, Chrome, Safari, and Opera. On mobile devices, Disqus currently only supports browsers using the WebKit layout engine. Now, we will take more look at Disqus.

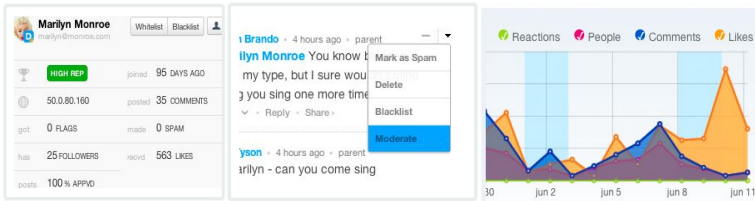


Fig. 1. Features of Disqus platform

(From the left, example screenshot of user reputation, email moderation, and analytics in a row)

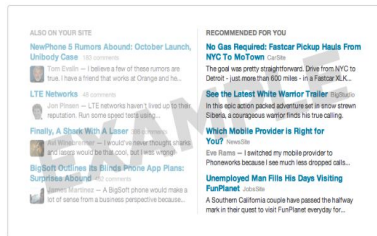


Fig. 2. Discovery service of Disqus

The comment system of Disqus works hand-in-hand with a dedicated forum backend, so the conversations are never fragmented. It drives real engagement and traffic on websites³. The fully real-time Disqus is perfect for participation on breaking news, hot discussions, live events, and video content. No matter what platform people use,

² <http://en.wikipedia.org/wiki/Disqus>

³ <http://disqus.com/for-websites/>

Disqus integrates seamlessly. It supports major platforms with easy-to-use plug-ins or copy-and-paste code. It also supplies wonderful UX. Its design is clean and intuitive, which makes users give comments and feedback fully real time. Developers and managers are all about encouraging quality discussions over one-dimensional comments. Everything is built into the Disqus system so that websites' visitors never have to leave websites. People can build loyalty with real-time social notifications and email notifications. It serves on phones and tablets with HTML5 design as well.

The Discovery service of Disqus helps people find new and interesting discussions and stories within Disqus (Figure 2). Discovery also helps publishers drive increases in internal recirculation and external referral traffic, resulting in increased advertising revenues. Users are very engaged when they arrive at the discussion thread because they are either engaging in the discussion or thinking through where they want to go next. However, this real estate is commonly underutilized by publishers because it's below the fold. By placing the Discovery box within the discussion thread, it enables a community's most engaged users to discover new content while also helping a community's users best optimize their audience monetization.

4 Analytics on Social Comments in Disqus

In Disqus, people do not need to make new account because Disqus supports social network login. For sure, it is possible Disqus account and people can connect their own SNS account to Disqus. Disqus supports a system of following and, follower such as Twitter. Using this function, we can subscribe the other users' comments. Moreover, votes, on like/dislike functions are supported in Disqus.

4.1 Data Gathering

Different from general web crawler systems [6], Disqus offers an Application Programming Interface (API) that is easy to crawl and collect data. We selected 10 websites which have high activity among many websites introduced in Disqus showcase⁴. The websites are CNN, The Week US, Washington Times, Wired, The Next Web, Billboard, People, AllKPop, BoingBoing, and MLB. We categorized those 10 websites into 4 types. CNN, The Week US, Washington Times were classified with News category. IT category was assigned to sites such as Wired and The Next Web. Billboard, People, AllKPop belonged to 'Entertainment'. BoingBoing and MLB sites were exclusive with others. For each website, we collected 100 most active threads (articles) with most 100 comments from each thread for recent 30 days on December 21th, 2012.

We made use of a Disqus API to collect data from the websites. Several Disqus APIs, however, are still running under beta version and even have a few limitations. For example, we could maximally obtain just 100 articles which users posted their comments on according to sorts of downloading purposes prefixed by the Disqus.

⁴ <http://disqus.com/showcase/>

So we could download information on just 100 articles. Besides, the maximum number of comments on a article has the default limit of 100 to be downloaded. Even though a article has more than 100 comments, the Disqus API returns just 100 comments on the article. This limitation might be why there are few researches on analyzing Disqus data.

4.2 Analysis and Result

Comments. As mentioned before, we collected 100 most active threads (articles) with most 100 comments from each article. After that, additional information of the comments such as author, written time, message, etc was obtained as well. Total comments posted were 76,536 during the time. The number of comments by websites is shown in Table 1.

Users. We also obtained information of users with using URLs containing users' profile images who posted those comments. Furthermore, we downloaded all profile images to analyze how many users uploaded their own images. Total users were 21,006, but information of some users was not enough. Therefore, total valid users were 20,716. There are two default images provided by Disqus, and there might be additional default images depending on the websites. We checked out all default images from the websites. Finally, we extracted their color histogram and compared it with all profile pictures we downloaded. As a result, we had information on who changed their profile images from the default. The number of users by websites is shown in Table 1.

Table 1. Number of Users and comments by websites

Category	Websites	# of Comments	# of Users
News	CNN	10,000	2348
	The Week US	5,939	1717
	Washington Times	10,000	2619
IT	Wired	4,736	1769
	The Next Web	2,917	1305
Entertainment	Billboard	5,159	1838
	People	10,000	830
	AllKPop	9,697	4247
ETC	BoingBoing	8,088	2176
	MLB	10,000	1,867

User Profile. We found that there is an interesting feature in user profile. Some users upload their image file to change the profile picture from default to their own. According to our research, usually, almost half users uploaded their profile picture, and the others use one of default images as their profile picture. However, only 36.7% of users in 'News' category changed their profile pictures (Figure 3). We can assume

that users in ‘News’ have low tendency to show their identity while users in the other categories usually want to show their identity. This happens more obviously on the list of top commenters of each category or website. For example, most top commenters in AllKPop uploaded their own profile pictures, but most top commenters in CNN do not have their own profile pictures.

There is less than 1% overlapped users between any two categories (Table 2). This is because users usually post comments on the websites they are interested in, which is proven by the result of analyzing the average number of forums mentioned above.

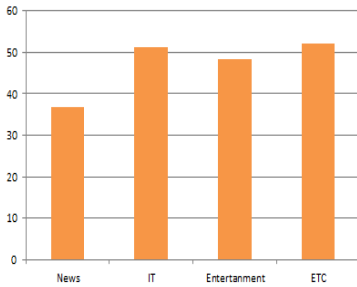


Fig. 3. User ratios uploading their pictures by categories

Table 2. Overlapped users between two categories

Category	Total users	Overlapped
News & Entertainment	12502	21
News & etc.	11473	16
News & IT	10154	82
Entertainment & etc.	9120	0
Entertainment & IT	7860	7
IT & etc.	6797	36

5 Discussion and Future Work

Main services and functions of Disqus have been discussed so far. Some cons, however, are investigated through our review as well. In Disqus, users are sent notifications via email, and can also be sent replies via email simply by replying. But they receive nothing for notifications when other people like their comment. This may decrease intrinsic motivation and intangible incentive. Disqus provides real-time commenting, which means people don't have to refresh the page to view their new comment. But Disqus doesn't provide any real time counters for the number of comments or readers currently on the page. It also doesn't extend its real-time commenting service to mobile devices at this time. This may support members' answering but finally can decrease intrinsic motivation and intangible incentive. Disqus has a community box that displays Disqus comment metrics for the website you're currently on. However, it is not sure that this feature is useful, and people can't share any individual comment with Disqus via Twitter or Facebook. This can decrease affective commitments of members. Disqus' Community Box contains metrics for the website people are currently viewing. The service tracks the likes people's comments have received. But these statistic numbers are scattered in different places and certainly don't look helpful for users. This can decrease normative commitments of members and members adherence to normative behavior at the same time because it is not efficient to show statistics of normative behavior. Disqus doesn't provide the service of tagging

users' friends on Facebook and Twitter. This function is really attracting. So this problem can make it difficult to get to critical mass because of lacking of membership.

In contrast, one of the most attracting factors in Disqus for online communities is a user profiles management service. Disqus provides the full user profile via a pop-up. Pop-up profile includes full user profile, user bio, Twitter and Facebook account links, the number of comments and likes, a list of the communities associated with the user, and an activity stream (previous comments), so that people follow user's comments via Disqus by clicking 'follow'. This can increase bond-based affective commitment and membership in terms of the design claims.

We have some limitation in the analysis of Disqus data because the data provided by Disqus APIs is not enough. Moreover, we could not use the reputation scores of each user in this research because of reliability, although we collected them. We sent a Disqus manager an email to ask how Disqus generates the reputation scores. But their reply just said that the reputation is not perfect yet. What we only know is at this moment that the score is related with the number of likes and comments.

To make our study better, a comparative study is necessary such as how different the number of comments users post is between websites using an online discussion and commenting service and websites not using, or the analysis on how different the number of comments is between before a website starts using the service and after.

6 Conclusion

We have reviewed what design claims are important to start and to maintain online communities so far. Helping users in online communities to interact with other members is quite useful to make online communities successful through online discussion and commenting services. Some analytics on users and comments data from ten active websites have been also done to see how Disqus is used for them, and what we can do to make a website more active with using a discussion and commenting service.

Our analysis on Disqus data show the website that we selected can be classified mainly two types; news and the other. There are specific features and suggestions of websites. Firstly, interaction is more active by following and followers in 'News' category. The number of users who have their own followers and following is relatively higher in 'News' than in the other categories. Secondly, discussion is more active with thoughtful comments in 'News' category. This represents that the forums in 'News' are usually about hard topics such as politics, economics, etc. which are good for discussion. Thirdly, users post comments in more various forums in 'News' category. Interestingly, they tend to post comments in the same type of forums which are mostly other news sites. Finally, users have low tendency to set their profile pictures in news type compared to the other websites.

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