

Digging for Diggers: Analysis of a Social Media Website

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Introduction

In the past, stories covered by news and popular published media were hand selected by chief editors and disseminated to the public. This method of distributing information left a lot of potentially good news articles unpublished and unseen. Some of the disregarded information was not deemed suitable for publication or public recognition. This is understandable, because with the tremendous amount of news being reported, a filtering process is definitely needed to determine the most relevant information. However, by having a select few determine what news is published, there may have been a number of agendas and filters that prevented relevant information from being available to the public. The purpose of Digg.com and other social bookmarking websites is to place control of news content with the users of the site. All of the content on Digg is submitted by the users and “dug” by the users. Once an article receives a certain number of “diggs”, it is promoted to the homepage of the website. Similarly, if a story is not deemed noteworthy, the users are allowed to “bury” the article causing it not to advance to the homepage. During the early stages of Digg most of the content submitted was geared towards the tech community. Now topics on Digg cover news, sports, computer programming, and television entertainment as well as a number of other subjects. A typical digg user will go to the site, or a particular subsection of the site, read the more popular stories and check the upcoming stories, voting for the ones they find noteworthy as well as possibly submitting stories of their own or commenting on stories.

This interaction between users created a community of people actively determining what each other, and the public, see on the homepage by submitting and digging stories. As

time went on, in this community, it was evident that a subset of the larger community contributed more than half of the material which was submitted and advanced to the homepage. This could be seen by the top user's list, which once was a feature on the website. This feature displayed a list of the top users of the site, in ascending order, determined by the amount of stories dug, submitted, made popular by the user, and their ratio of popularity to stories submitted. This feature allowed the top 100 diggers, displayed on the first page of the list, to identify themselves and form a sub community within Digg. This feature was later removed by the administrators of Digg for reasons that will be detailed later in this paper.

The common action of the users of Digg include: submitting, digging and burying articles, leaving comments on articles submitted, saving each other as friends, going on a friend's profile to dig what they have dug, emailing and instant messaging outside of Digg, and creating Digg blogs and forums discussing the issues that arise. "The democratization of news," as one user put it, is what caused Digg to gain popularity and increase the size of its community. Most of the results of this popularity benefited both Digg and the users. Digg gained by having a steady increase in traffic, advertising revenue and new user registration. The users benefited in multiple ways: 1) a sense of achievement when the stories they submitted reached the front page, 2) having the opportunity to submit their own articles from their personal blogs, which would give them an enormous amount of traffic if it reached the front page, and 3) being able to choose the news that was relevant to them. Third parties soon became aware of the opportunities which Digg offered and developed strategies to gain from it as well. It is now known to outside marketers that Digg can be used as a promotional tool to generate traffic and revenue to other websites. Today, marketers target the top users of Digg, offering them money to help promote their sites, which is a clear violation of Digg's terms of use. Some users take the offers, others don't. In this paper we will examine the effect this has had on the Digg community. We will also present an insight into what it is to be a part of the Digg community and the key features which have made Digg successful.

Methods

One of the authors was a regular user of Digg. The others registered and spent at least 15 hours each using the site, reading news articles, learning about the meta tools available to users, digging stories, burying other stories, commenting on them, and submitting content of their own. In other words, we tried to become regular Digg users and approximate the experience of typical users. Most of our interviews were conducted with people who were in the top 20 Digg users (out of over 900K registered users). We found that, not only did these users have an active community, but many of them were proud and eager to discuss their experiences with Digg. We also deliberately interviewed some more “normal” Digg users who submitted a small number of stories while mainly just reading content in order to compare their experiences with the top users. We conducted a total of nine telephone interviews, 7 with residents of the United States, as well as one Canadian and one Indian Digger. We also conducted one email interview with a Canadian user. Our interview subjects ranged in age from 18 to 42 (as well as an interview with a 14 year old Digger which was stopped and not included in our results when we determined that he was not legally able to grant informed consent), and all but one were male. While we did not deliberately seek out male subjects, the top Diggers who agreed to participate were all male. We did search out one female subject who is a successful Digger with a high percentage of stories making the front page, but does not submit the quantity of stories the elite Diggers do, so that we could have at least one female perspective on the Digg community.

The other thing that may be noteworthy is that the focus of our study evolved over the course of our research. Initially, we were interested in the effect that gaming submissions by doing things like paying to have a story rated high had on the Digg community. However, as our work progressed, while that remained an area of interest, we became more focused on the actual community (or communities) of users within Digg and the ways they interact with others.

Community Analysis

Amy Jo Kim has a list of 9 timeless design principles used to analyze on line communities (footnote). We will look at the Digg community as it relates to these principles and then discuss the overall Digg community.

Purpose

Digg has a clear purpose as a social media news site. It has a large, well established audience, a clearly defined mission, and an appropriate visual design. While there is not an extensive history of Digg on the site, there is a good FAQ section, an about us section, and one on how Digg works, to give newbies a sense of how to join and participate in the community.

Gathering Places

While Digg does have headings for different types of stories (News, Entertainment, Sports, Gaming, Newly Popular, etc) it does not provide forums or similar places for members to chat. While AIM (AOL Instant Messenger) addresses and external web sites can be posted on profile pages, Digg does not provide forums. Similarly, Digg recently stopped listing the top users - a move that those users found very upsetting. It is notable that most of the users we spoke with mentioned this list as one of the things that Digg should bring back and also notable that many of the top users had developed their own forums to communicate with each other outside of Digg and have figured out how to rate the top users even if Digg no longer publishes this information. It is also worth mentioning that removing the list was a deliberate design decision made by Digg as they balance the needs of a community with their need to limit the ability of people to easily contact users to game the system.

Evolution over Time

Digg provides each user with an editable profile that can evolve over time. Users must register and create a profile in order to Digg stories (but not to read them). They then can

edit their profiles, add friends to their list, and have a history showing when they joined, diggs, submissions, and stories made popular that is a part of that profile and a way of assessing their level of participation and relative success on the site.

Promoting Effective Leadership

This is an area where Digg may be considered weak. While the top users have gotten to know each other and interact with each other, Digg seems to want their leaders to be Digg employees, rather than the top users. Although many of the top users submit problems to technical support, with over 900K users, it is unclear when, or if, there will be a response from technical support. While this may not fit with Kim's view of a community, it should be mentioned that this is a design decision made by Digg, as an entity designed to make a profit and that, as such, it is their prerogative to decide how they want leadership in the community to be provided.

Code of Conduct

Digg definitely has explicit conduct expectations defined within their user agreements and terms of use. However, it would be fair to say that, with their success, Digg has been struggling with some of these things. There are commercial entities that "guarantee" a high Digg ranking for a fee. Top Diggers are being contacted with offers of payment to rate stories highly. Friends swap favorable ratings, often without reading the content they are recommending. With their increasing popularity, more users are leaving crude, thoughtless comments about stories. Tacky, sensationalistic stories are often promoted over better more thoughtful ones. While these are certainly problems, they are the sort of problems that come with success and Digg is trying to address them in a fair and reasonable manner.

Organize and Promote Cyclic Events

The closest we could find to cyclic events was a weekly Diggation podcast and Digg founder Kevin Rose making a number of worldwide speaking appearances. Digg does not seem to promote cyclic events, but that does seem to be a deliberate design decision.

Range of Roles with Increasing Involvement

At one point, the top users list may have been a form of a top role, but Digg has made a decision to stop publicizing the top users in order to limit the ability of outsiders to contact them with offers to game the system. At this point, it seems that all of the formal roles with higher privileges belong to Digg employees. Informal status may still be conferred by data on profiles such as number of stories submitted, made popular, and length of membership or by seeing a users name associated with a popular story.

Support of Member-Created Sub-Groups

While Digg does not formally support such groups, the members do create their own sub groups and are able to figure out how to do so from information available on Digg. The top users are in regular contact with each other, less prolific users can identify and “friend” other users with similar interests. This will be discussed in more detail in the following section of this paper. Digg does not provide a way for members to set up and run their own events and contests.

Integrate what’s Online with the Real World

For the most part Digg does not do this by design. While Digg leaders occasionally speak at technology conferences, providing users the opportunity to meet them, they do not provide events designed for users to meet and get to know each other.

Digg Community

Clearly, Digg meets most, but not all, of Kim’s criteria for building an online community. Equally, clearly, almost all of the areas where they do not are the result of a deliberate design decision based on their business model. Generally, the Digg users have figured out how to provide the things Digg has chosen not to and even those areas of community exist, albeit not due to corporate design. Actually, the authors found distinct communities operating within Digg, consisting of the top Diggers and the regular users.

Top Users

At the top level, the leading Digg users are in close contact with each other, communicate directly (electronically) on a regular basis and have occasionally met in real life. Leading Diggers on multiple continents do interact regularly, have their own forums, and telephone each other often. Most of them have their own blogs, which link to each other and they have thoughtful discourse about social media, Digg policies, politics, culture and a number of other things.

Malik is a top Digger who also works on another social media site. He is regularly in contact, both electronically and via VOIP, with almost all of the other top Diggers. He has helped to create a charitable web site where many of the top Diggers donate their blog advertising revenues in order to give back to the community. He has met and allowed another top Digger to stay at his apartment when visiting the town where he attends college.

Husane is a top Digger who attends a University on the east coast. He has been a member of the Digg community since it was launched. His active participation in the community led him to become very popular, having about 900 users save him as friends and having about 100 mutual friends. He is in contact with at least 12 of his online buddies daily.

Rajeesh is a top Digger living in India. He regularly interacts with the other top Diggers and also has made a point of interacting with other Diggers who regularly recommend or submit content on environmental issues. As a result of doing this, he has friends with common interests that he regularly communicates with on 5 continents and at least one island nation even though he has never left the Indian sub-continent.

Kelly is an early digger, meaning he's been an active member of the site for nearly a year. He considers the personal friendships he's acquired since becoming a top Digger one of the most rewarding parts of using Digg. He is a developer, so he has a professional as well as personal interest in the technical information on Digg. As Digg has changed with popularity, he has become dissatisfied with the content, and started using alternative niche social news sites.

Luke says he submits stories to Digg for the sense of achievement when a story reaches the front page. He also is highly enthusiastic about the idea of democratizing the news. Luke is a prolific submitter, submitting as many as twenty stories a day.

Gregory is an 18 year old top Digger in Canada who has gotten to know most of the other top Diggers through electronic communication. He does not think he will ever meet any of them in real life because of safety concerns about meeting people whom you only know online, but enjoys interacting with them.

James is a 26 year old top Digger from Chicago, IL. Now he's living in Los Angeles mainly writing for a technology magazine. He was introduced to Digg through conversations with friends and later created an account. He interacts with people on Digg through the stories they submit. The more popular stories they submit, the more inclined he is to save them as friends.

The other notable thing about the top Diggers is the extent to which they interact in spite of huge differences. Many top Diggers are justifiably proud of their accomplishments and want everyone to know who they are, while others prefer the anonymity of their online personas. Geographically, the authors spoke to people in three countries, from six birth countries and could have gotten an even more diverse group of interview subjects if not constrained by the realities of student budgets and long distance phone rates. We spoke with people who were Muslim, Christian, Hindu, Jewish and atheistic and with people who considered themselves friends even though they were from neighboring countries that are traditionally hostile to each other. In all of these cases, they seemed to cast their differences aside and be genuinely friendly based on their common interest in Digg. The authors considered that both outstanding and somewhat surprising.

The Regulars

The interaction and sense of community among the regulars is generally defined either by preexisting relationships or common interests. As people recognize someone consistently

recommending stories they like or with common interests, they will add them to their friends list, share IM talks and possibly RSS feeds. Similarly they will often visit each other's web sites and become active members of the community in those sites.

Amazing Grace is a 25 year old Canadian lady who reads Digg primarily for technology and gaming related information. She will Digg stories that she reads and likes and submits content from others that she considers noteworthy as well as her own content from her web site in order to drive traffic to her site. She “friends” people with common interests and will check out their submissions when she goes to Digg, recommending them if she thinks they have merit, commenting on them and engaging in discussion via the comment section of submissions. She also sees that a number of people have visited her site because of Digg submissions and that several of them have returned and become regular visitors to her site and thus a member of her extended community.

JSon is a 29 year old web developer from Philadelphia, PA. He is very tech savvy, spending a considerable amount of time online either for work purposes or entertainment. JSon became a member of Digg about 6 months after it was launched. His activity in Digg includes reading and digging the stories that made it to the homepage, he also likes to read the comments that people leave. JSon rarely submits any stories by the time he find one that is worthy of submission, it is already in the upcoming stories queue. By reading the stories and comments that are submitted, JSon is able to identify himself with the population of tech savvy web developers like himself. This alone keeps him coming back to Digg to continue reading.

Shawn is a very casual user of Digg. He's a graduate student who uses Digg as a source of news, but rarely comments, and rarely Digg or Buries stories.

Thus, we see that regular users of Digg who are not at the top do have interaction and a sense of community appropriate for their level of participation, even if it is clearly not at the level of the top users. They do seem to find a group with which they interact and have a community of their own. Interestingly, this level of interaction seems to be planned,

expected and supported by Digg, while the interaction of the top Diggers is done outside of Digg in a manner not officially supported by Digg.

Changes, Deviant Behavior and Growing Pains

The community surrounding Digg has changed drastically over time, driven by a relentless increase in the number of users, which has changed the flavor of the audience (from technology focused to more general) as well as forcing Digg to change its software to accommodate the number of new users.

The changes have been viewed with pleasure by some Digg users. However, the change in the makeup of the community has been viewed with some apprehension and disgust by many of the older Digg users. We will outline some of the Digg changes that have had the most impact on the Digg users who participated in our research.

Content Changes

One of the main results of the expanded audience is that the topics have changed drastically. According to Luke, “When I first joined a news update about some video card getting new drivers would hit the home page,” but “now its more – it’s a little more sensationalist.”

To attempt to separate stories on different topics, so that people with different interests could find the content that appealed to them more easily, Digg introduced a set of topic oriented categories, such as Technology, Science, World & Business, Sports, Entertainment and Gaming.

Comment Quality

Digg has a feature which allows users to make a comment on the stories that have been submitted. Users can make comments on the comments (but not comments on the

comments on the comments - it doesn't have a threaded discussion format), and dig or bury the comments of others. Users can see how a comment has been rated, but cannot see who rated it that way.

An oddity in communication through the comments is forced on its users because of the lack of depth in the discussion trees. Users are forced to keeping within two layers – so if they want to comment on something in the second level they use the convention of placing “@ postUser” in the start of their post, where postUser is the username of the author of the post being commented on. For the authors of this paper, it was often difficult to find the post being referred to, because it was mixed in among all the other comments on the topic.

Almost unanimously, our participants felt that the quality of the comments was remarkably poor, and tended to view them with carefully measured disgust. According to Luke, “Digg has a way of socially equalizing people across, across environments and across age groups for the most part, as long as you stay out of the comments where it tends to dumb people down to their lowest common denominator.” “Comments used to be a nice place to go, a nice place to visit. Now it's just a mean playground with a lot of... children. I mean, to put it kindly, with a lot of people with no manners, who love to flame...” “It's rare to find someone who has an insightful comment in the comments section these days. For the most part, it's just a place to play for a lot of the guys. It's very mean-spirited sometimes. I try to stay out of the comments.”

Amazing Grace reads the comments to try to see why some of her submissions have been buried. She finds it very frustrating that most of the comments consist of statements like “that sucks” or are sexist insults rather than being actually related to the content of what she has submitted.

According to Kelly, it wasn't always like that. Earlier in Digg's history, the comments contained insightful comments, rather than consisting mostly of flaming and trolling. He related a time where he had submitted a story about a particularly fine home chemistry

set as well as asking where he could find it, and somebody had posted links in the comments to a site where there was a high-quality image of the set, as well as site where it could be bought. While these sort of comments may still exist, it is difficult to find them among the rude, crude and profane submissions.

Scalability of *The Queue*

The Queues in Digg, are the list of upcoming stories that haven't gotten enough Diggings to become popular and make it to the front page. As the audience of Digg has gotten bigger, so has the number of people submitting stories to Digg. A variety of problems have surfaced for users who go through the queues to try and dig stories that are worthy of it, and bury the ones that aren't. The first is the sheer number of posts that need to be sifted through. When this paragraph was being written, there were 6414 stories in the queue, which is arguably far more than any single person can read.

Coping strategies users have developed is to first browse stories their friends have submitted or dug, and then possibly go to the queues. Luke says every day, after submitting stories, "I will look through my friends' stories and dig up stories that they have submitted, and then after that I'll look through upcoming, and then finally I'll look at the homepage."

Removing the Top Diggers List

When our study of Digg began, the community was still buzzing with controversy over the removal of the list of the top 100 users. Before the removal of the list, all users in Digg were rated by a complex (and confidential) algorithm that was said to include as factors the number and popularity of submissions made as well as the popularity of stories the user has dug or buried. All users could see their ranking, as well as the rankings of others.

The rankings of the user making a post is said to greatly affect how many digs are needed to make the story popular (get it to the front page), so the rankings are very valuable. In addition, when the top 100 users list existed, it provided a large amount of recognition for Digg's top submitters. Since having good submitters listed as your friend on Digg is said to increase your status with the algorithm, it is very common for top Digg users to have a large number of friends (at least Digg friends).

For many of the top diggers we interviewed, this was perceived as a slap in the face, since the top 100 diggers provided a huge amount of the content that makes it to the front page of Digg. While Digg may have had good and understandable business reasons for removing the list (among them making it harder to contact top users to ask them to promote content for third parties), the top Digg users seem to truly resent the removal of their recognition. For users outside of the top 100, this did not seem to be nearly as big a deal.

When the rankings were removed, James noted that it made him lose his sense of self within the community. "It stripped me of my ability to put myself in context with other diggers... It felt like a slap in the face because you've put in so much time and energy into building up that identity on Digg and they took it away." Not only did it strip him of his identity it also made it difficult to determine which users it would be best to save as friends. When a story reaches the front page James usually goes to the profile of the user who posted it and, if they were highly ranked, he would save them as a friend. In this case, to James, when a user submission ends up on the homepage it is a conventional signal, as described by Judith Donath (1996), because that isn't really enough evidence that the user can always provide good articles. The ranking system provided James with an assessment signal, confirming whether or not a user is a good digger.

Digg submitters are all unpaid. Often, the only returns they get for their labor keeping the Digg news mills supplied is the recognition of getting their stories on the front page, and the recognition they get as they climb through the ranks of the diggers.

The Digg top users tend to befriend, in real life, other top users of Digg. During our interview with him, Kelly said that “I do have a pretty good friendship with quite a few of the top diggers.” In his personal IM contact list, he had over twenty diggers, and considers the friendships he’s formed as one of the best parts of his Digg experience. They IM each other, sometimes weekly, start charity blogs together, and dig each other’s stories. This of course, means that the strongest relationships on a socially-driven news site are between some of the individually most powerful submitters. This concentrates the submission and editorial power immensely.

Digg states that it is a “digital media democracy”. Even though top diggers have risen to that position by being trustworthy citizens of the community, it makes the system more of an oligopoly if a few users have much more power to promote stories than others. Removing the top 100 users list may have been an attempt to balance the playing field by making it less obvious who the best users were, or at least to propagate the illusion a little further. However, in the wake of the removal of the top 100 user list, sites such as www.giggg.com have popped up to list which users seem to be doing the best in getting their stories to the front page.

Although not appreciated by many of the top users, the removal of the top users list may have served several purposes for Digg. There seems to have been a growing resentment in the Digg community at the power of the top diggers. “It’s simply due to the fact that I spend a lot of time on Digg, I’ve submitted a lot of stories, a lot of people have found them interesting and so I have basically a following. I don’t go out induce people to dig my stories or anything like that, they do it on their own free will, but there are people that are jealous of that fact. You know it’s like ‘why can Kelly submit something and it goes front page, I submit something and it doesn’t?’”

Because most of the audience is not this powerful, Digg’s operators may have decided that to maintain their bottom line, they needed to reduce the power of the top diggers. Luke states that although having lots of Digg friends seemed to help him when he was first using Digg (“At the time I had equated friends/befriending with success.”), at some

point it seemed to be doing him harm, and he eventually concluded that he had acquired enough friends who were digging his stories consistently enough he was being marked as potentially gaming the system.

Also, clearly Digg was concerned with how easy it had become for unscrupulous content providers to contact the top Diggers with offers to promote their stories as we discuss in the following section, by removing the rankings and top Diggers list, they clearly hoped to make this more difficult.

Deviant Behavior

In our study, our interviewees identified four main categories of deviant behavior: misuse of comments, non-quality oriented burying, blind digging and digging for cash.

Misuse of comments has been outlined above: they mostly consist of flames and trolls. The second category, non-quality oriented burying consists of users blindly burying any story that deals with a certain subject matter, or deals with it in a certain manner, or was submitted by somebody the burying user dislikes. However, this behavior is almost impossible to separate from desired editorial control of the content. Some of the Digg users suggested creating a mechanism to track who was burying content, to make this more transparent, and to make it possible to pinpoint users who weren't giving due-process to stories.

A related problem is blind-digging of posts. Unlike blind-burying, Digg could track this behavior, and may already. It is a problem, because people begin burying anything submitted by somebody they know without considering the merits of the article itself. This has the same symptoms of somebody who is successfully paying to promote content on Digg, and damages the quality of the news that reaches the front page.

The final category is when users try to get their submissions promoted through paying people to Digg them. This comes in two forms – those who try to get top users to dig or

submit their stories, and those who try to organize groups of regular users to do the same. One site that did this was (now defunct) SpikeTheVote.com. However, the owner of SpikeTheVote.com put it up for sale on eBay, where it was bought by a loyal Digg user, who turned subsequently turned its user list over to Digg administration. While it appears that some companies have been successful in having stories promoted in this manner, it does not appear that any organizations have been consistently able to promote and keep content on the front page in this manner.

In Richard Bartle's classic paper *Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs*, he categorizes the users of MUDs into four main types, achievers, explorers, socializers and killers. A similar system of categorization could possibly be used for Digg. Interestingly enough though, each category of user seems to have a behavior associated with it that seems to be potentially damaging to the collective experience of Digg.

The top users, of course would correspond to Bartle's Achievers, especially as they are highly motivated by climbing up the list of top users, and for the recognition they receive there. The biggest negative behavior associated with Achievers on Digg is the potential for abuse of their status as top diggers to receive payment for submitting stories.

Surrounding Digg are those who are looking to find a way to use it to make a profit, both in legitimate and illegitimate ways. They are constantly poking the system, trying to find out the details of the algorithms, the types of stories that are likely to become popular on Digg, how to write a headline that will generate a lot of attention, what is likely to be considered spam, etc. These would correspond to the Explorers. Interestingly enough, the explorers have possibly the most potential to destroy the Digg system by finding an inherent imbalance in the system, that could make it too easy to manipulate. When Explorers go bad, they tend to use their knowledge to spam Digg, or to set up systems where they will pay for Digg, such as the one found at www.usersubmitter.com. There seems to be two categories of Digg socializers, those that discuss stories in the comments, and those who discuss Digg elsewhere. Many top users have set up blogs to

comment on stories on Digg that they found especially interesting, like <http://www.neothoughts.com/> and <http://www.901am.com/author/Curtiss/>. If you visit them, you can often see the crosstalk between them in the comments on the blogs. Another form of socializing is through the previously discussed comments. This seems to be a form of socializing, albeit perhaps a crude, angry one. Of all the destructive behaviors that appear on Digg, this seems to be the least damaging to the site as a whole, because the comments are easily ignored.

The user type that most closely corresponds to the category of Killer is hard to identify on Digg. Somewhat the structure of Digg may be responsible – the only real way to damage somebody on Digg is to bury their submissions. However, there is no way to tell who has done the burying, or even how many times a story has been buried. In the end, even if you do hurt someone's story, the person being attacked can't tell, so there is little pleasure in it for a killer. Interestingly enough, adding a mechanism to give users an idea of who has buried their stories may create a class of Digg users who bury stories solely to annoy the submitters. Because buries are given a lot of weight to make it easier to kill spam submissions, a small number of Killers abusing the bury system could have a chilling effect on Digg.

Conclusion

It is apparent that Digg is a very successful social media site which is experiencing a number of growing pains. As with LambdaMOO and many other sites, a small intimate community which experiences explosive growth will inevitably experience problems associated with their popularity and the sheer numbers of new users. Since Digg is an excellent tool for promoting other sites, the problems associated with abuse of the site are magnified. Interestingly, while our focus was initially on companies paying to promote their content, we discovered that the bigger problem was users swapping votes as favors, blind digging (recommending stories without bothering to read them), rude comments, and similar problems that are related to having a large number of users on the sites. Several people we spoke with expressed frustration at the number of sensationalistic or

pop culture articles that reach the front page as opposed to what they view as higher quality content when the site was not as wildly popular.

We were surprised at the extent to which a community did exist among the top users. They seem to truly enjoy communicating with each other, know a lot about the other users and even interact on non Digg related topics even though none of this is officially supported by Digg. While most of these top users have never met in real life, they genuinely know each other, are a part of each others life and have collaborated on a number of online ventures. In this case, the community created itself without official support from the site that is the source of the community.

While we have focused on the Digg users in our study, we would be remiss if we did not at least consider what we have learned from the point of view of Digg itself. By removing the top users list, most of the people we spoke with felt that Digg had deliberately lessened the sense of community among the top users. At the same time, several did say that they understood Digg's motivation for doing so, which was to make it more difficult for these top users to be contacted by people wanting to pay to promote content. It is also at least possible to think that by removing the top 100 user list, Digg might actually increase the feeling of involvement of the leading Diggers who did not make the top 100. In other words, they may have broadened the community at the cost of the support of the top 100 users.

Also, it is probably worth mentioning that while we have focused on Digg as a community, it is also true that Digg is a company designed to be profitable and generate revenue for its stockholders. Thus, the decisions they make should be analyzed both in terms of their effect on the community and their appropriateness as business decisions. Just as the owner of a local pub in England would have the right to close the pub and open a McDonalds if they thought it would be more profitable (even if it might have a negative effect on the "community" at the pub), Digg does have the right to make decisions that they believe are in their best interest as a business. However, it may well be

true that doing things that benefit the community will also be the best business decisions in the long run.

In short, Digg is an online site that allows several different levels of community. The overwhelming majority of their users go to the site, read the content, possibly digg the stories that they like and have little to no interaction with other users. Many users also submit content, comment on other stories, “friend” people with similar interests, talk with them through IM, check their newly submitted stories when they go to the site and have a more personal relationship with these people. At the more elite level, there is a true community that regularly interacts with each other, attempt to help drive the direction the site is heading, and regularly communicates with each other. The ongoing success of Digg may well be determined by the extent to which users can self select into the level of community that they want and find meaningful interaction.

Appendix A User Profiles

Malik

Malik is a 23 year old student who was born in Asia, is about to graduate from an Ivy League university and is a top 20 Digger. He started using Digg because the technology related content interested him. He also enjoyed what he refers to as the “democratization” of news, “If I am reading the New York Times, the editors decide what goes on the front page and the news I am interested in might be buried in the back or not even printed at all. With Digg, the community decides what is relevant.” Malik submitted a few articles that got on the front page, which motivated a competitive streak in him so that he was soon submitting 20-30 stories a day, checking out his ratings and the percentage of his stories that became popular. He says he was a heavy Digg user for about a year. In the late summer of 2006, Netscape approached him and offered him \$1000 a week to do the same thing for them that he was doing for free on Digg, submitting a minimum of 5 stories a day. Malik accepted that offer and is actually submitting significantly more stories than that. He is still actively contributing to Digg, but not at the level he once was.

Compared to Digg, he has found that being paid by Digg has lowered his sense of competitiveness, and he enjoys the additional responsibilities Netscape offers him such as the ability to remove offensive comments, eliminate duplicate submissions, police content and similar responsibilities. “With Digg if I saw something that was obviously wrong, I could submit it to customer service, but it might be a day or more before it was acted on, or it might not be at all, here I can deal with it right away and also have the opportunity to discuss the direction of the site with the developers.”

The thing he finds most frustrating about both Digg and Netscape is when people vote for or against content without actually reading it. Many users swap recommendations, or will vote to bury a site that is getting “too many” Diggings regardless of the quality of the specific submission. He can see submission statistics on Netscape and is aware of one member who recommended 7000 stories in a week, clearly not a number that could actually be read. While there may be some people who are actually buying recommendations, he does not believe this to be nearly as big a problem as blind recommendations or swapping recommendations. He does not believe Bots are used in any significant way to game recommendations. He also says he knows almost all of the top 30 users and does not believe any of them are engaging in “illegal” behavior. He also makes the point that even if someone does get promoted to the main page, they have to keep getting votes to stay there. He also is frustrated by the lowering of the level of discourse in the comments. In his opinion, what were once witty and thoughtful comments have degenerated into rude, inarticulate “you suck” type venom.

What he finds most rewarding is the way that unusual and relevant content is on the front page in near real time. For example, the Donald Rumsfeld resignation was on the front page within 3 minutes of being announced. “Digg has 900K registered users. That is 900K reporters”, he says.

He sees a strong sense of community among the top Diggers. He knows all of the top 30 or 40 Diggers and communicates with them regularly, either through email, IM or on the telephone. He has had one out of town Digger actually come and sleep on his couch for a

few nights while visiting the town where he lives. He has also started a charitable web site with another top Digger. Most of the top Digg users have their own blogs that generate relatively small sums of money (\$5-10 each) in monthly ad revenue. A growing number of the top Diggers are donating that revenue to a central source and then voting on charities to which it is given.

There are a number of things that he believes Digg could do to better serve the community, starting by doing a better job of listening to the community. “This is a socially driven site, there should be a forum where people can talk and address their concerns.” He feels that there needs to be a way to evaluate the quality of submissions so that the best articles are promoted and not just the most sensationalistic.

He believes that Social Media is just beginning to grow and will continue to expand. Most people graduating from Malik’s college with his major go into Venture Capital and he has a number of offers in that field. However, he is considering turning those offers down and going into Social Media Marketing. In his opinion, teaching people to optimize their sites and businesses for social media is an incredible opportunity, comparable to where teaching people to optimize sites for search engines was several years ago and he is considering making that his career.

Husane

Husane is a 20 year old college student born in a central European country and is a very active user on Digg. Husane has been a member of the Digg community since it was launched. His active participation led him to become a leader in the Digg community, being ranked within the top twenty users. This led him to become very popular, having about 900 users save him as friends and having about 100 mutual friends. To him, becoming a top digger is an easy process and it amazes him how popular he has become. “Having almost 1000 people add you as a friend on a web site is really interesting because it only takes a couple of clicks [to add a story]... it’s not that hard.” Husane’s popularity led to fame he couldn’t imagine himself having if he wasn’t a member of

Digg. He has been interviewed by Business Week, News.com, and the Wall Street Journal. He has also been approached by Netscape with a job opportunity to gain \$1000 a month submitting stories for Netscape as he is currently doing for Digg. Surprisingly Husane turn down the offer simply because, “It didn’t feel right.” He adds that getting paid to submit stories, “takes out the fun factor, you would just get into the habit of mass submitting stories without reading the content.” Husane feels like this type of submitting would reduce the quality of the stories being submitted.

The most frustrating aspect of Digg, to Husane, is its growth rate (now close to one million users). He says that in the past, it used to be a smaller community where you didn’t have to spend a lot of time digging because you knew which section was the best to view. Now, there are over 5,000 stories being submitted daily, so it has become difficult to go through a lot of those stories to digg. His sessions on Digg used to last 15 to 20 minutes, but now it takes over an hour to view and vote for stories. Husane feels that this growth effect causes a lot of content to go unrecognized.

The two main aspects of Digg that Husane most enjoys are the friend features and the diversity of the content and how they are associated with each other. By having friends, you are able to see the articles that they digg and submit, so you become aware of some information that you may have not been exposed too if you didn’t have that person as a friend. Husane gains a lot of friends through the quality of his submissions. Recently, he was contacted by a woman working at Apple Computer Inc. because of the articles he had submitted. They talked through instant messaging and she invited him for a tour of Apple headquarters, if he were ever to be in the area.

Husane is also active in protecting Digg against the deviant behavior that occurs on the site. He buries articles which he thinks are obvious attempts of users trying to spam their blogs. He also buries articles which present false information, which usually occurs in the political news. “There’s nothing wrong with promoting your content but when you display false information it is misuse and it’s not good for the website.” Husane describes these actions as cleaning up the queue and feels that it’s his responsibility because, “Digg

encourage us to remove bad content - they gave us the power.” He is also aware of companies which organize to promote articles. In the past, he was offered money to digg a story and if it would reach the front page he would get more money. He accepted the offer but was never paid. Somehow Digg.com found out and suspended his account. To reconcile, he sent an email to Digg explaining that he wasn’t aware that his action was against the terms of use. A few days later his account was restored. Husane is emailed daily with offers to receive money to digg stories, but now he forwards those emails to Digg so that they can ban those domains. He also gets emails from individuals asking him to digg their site or blog. In those cases, he looks at the content to determine whether it is worthy before he decides because, “it’s okay to help promote for the small guys.”

Luke

Luke is “a digger on Digg, and proud to be one”. He originally got hooked after seeing it featured on an episode of TechTV. When he checked it out, he stayed because Digg had so much quality news on the technical subjects he cared about. As a part of his work, he’s always needed high-end computers, which he often built himself, meaning he had a need for technical information, as well as it being a hobby. He loves how Digg seems to level the playing field, and strongly believes in the democratic principles that Digg espouses.

Luke doesn’t think he is an especially outgoing person, and never really contacted anyone on Digg until he reached the upper end of the top 100 users list. Now he has a few out-of-band contacts with other top Digg users, but has no plans to meet any of them in real life.

He says that becoming a top user was more or less an accident – his goals was to get interesting articles to the front page, and that while he was doing that “the damage was done” and he was a top user. His submission style started out as throwing everything he thought was interesting at Digg (up to 25-30 stories a day), to see what stuck. However,

he cut it down to the 10-15 most interesting ones when top dig users started dropping his Digg friend status because his stories were cluttering their feeds.

Amazing Grace

Amazing Grace is a 25 year old Canadian who works as a bartender in a nightclub in Montreal. Prior to coming to Digg, she wrote content for a game site and currently writes for her own blog and another game site. She originally came to Digg for their technical and game related news and began recommending her own writings as a way of driving content to her site. She has only been using Digg for a few months and submitted a relatively small number of articles, but a high percentage of those have made the front page. What she likes about Digg is the quality of traffic she receives from the site. She says that people who find her site through Digg, spend longer on the site, spend more time per page, look at more additional pages and are more likely to return than her typical first time viewers.

She says she likes the content on Digg and goes there several times a day. She found the site based on a friend's recommendation and has recommended Digg to others who have begun using the site. She has added people to her friends list because she likes the type articles they are submitting or because they are recommending a number of her stories. She is more likely to read articles submitted by her friends and will Digg them if she likes them, but wouldn't think of doing so without actually reading them. To the best of her knowledge, none of her friends recommend her stories without actually reading them. She has never heard of anyone paying to have stories rated higher and, based on her knowledge of her site's business model, has trouble believing that it could make economic sense to do so.

What she finds frustrating about Digg is the difficulty in finding out why her stories have been buried and the occasionally rude, crude and sexist comments people sometimes make about her stories. "I understand that people won't like everything I submit, but it's

frustrating when people just say ‘That sucks’ or insult me because I’m a girl rather than saying something related to the content in their comments.”

Among the things Grace would like to see Digg do in the future is have a forum, make the reasons for burying content more transparent, have more of a social aspect for users and have a way of removing commenting privileges from users who are consistently rude in a non-constructive way.

James

James is a 26 year old freelance journalist from Chicago, IL. Now he’s living in Los Angeles mainly writing for a technology magazine. He was introduced to Digg by friends talking about it but didn’t become an official member until he discovered the Digg upcoming stories queue (need footnote to explain). He looked at those stories to get ideas for his writings and that helped him with his writing. James was able to sell a couple of stories based on the ideas gained from reading the stories. After a couple of months of doing this, he decided to submit stories of his own to Digg. The second article he submitted was promoted to the front page, which caused him to be hooked in to the Digg community. James felt a great satisfaction in submitting a story that made it to the homepage because, “you have an effect on what other people are reading.” He began submitting 15 to 20 stories daily until he was amongst the ranks of the top 100 users. Now he’s more selective and submits about 2 to 4 quality stories a day.

James has mixed feelings about the current population of the Digg community. He says it’s a good thing for Digg but, like Husane, James is beginning to feel as if the Digg community has become a bit over crowded. In the earlier days he would know everyone that dug his story and now he has no clue. Another thing that annoys him about the growing community is the users who submit 50 stories a day to quickly rise through the ranks of top Digg users. This causes a lot of poor quality articles to appear in the upcoming stories queue. He felt, “a bit of resentment to them crashing the party. Not that it was a closed party but, it was definitely a party where you could have a conversation

and it wasn't too loud. When more people came in you had to scream and shout to be heard.”

When he was asked about the removal of the top users list, James understood that it was to protect Digg from outside marketers but upset about the decision that was made. First Digg removed the top users list from the site while leaving each user's ranking visible on their user profiles. When the rankings were removed as well, it made him lose his sense of self within the community. “It stripped me of my ability to put myself in context with other diggers... It felt like a slap in the face because you've put in so much time and energy into building up that identity on Digg and they took it away.” Not only did it strip him of his identity it also made it difficult to determine which users it would be best to save as friends. When a story reaches the front page James usually goes to the profile of the user who posted it and, if they were highly ranked, he would save them as a friend. In this case, to James, when a user submission ends up on the homepage it is a conventional signal, as described by Judith Donath, because that isn't really enough evidence that the user can always provide good articles. The ranking system provided James with an assessment signal, confirming whether or not a user is a good digger. Now, in order to identify good diggers James would have to become more of an “explorer”, as described by Richard Bartle, to identify the top diggers.

Kelly

Kelly started using Digg early on, although less than a year ago, when he was looking for information on technical subjects, because he is interested both professionally and personally in technical subjects.

Some of his favorite interactions on Digg has been the friends he has made. He has over twenty of them in his personal IM contact list, and especially feels a close tie with the top users, of which he was one before he curtailed his activity on Digg. He has met several of the other top diggers in real life, and feels comfortable talking to some of them on topics beyond typical Digg fare, from topical fish to cameras.

He gets his articles by subscribing to a wealth of RSS feeds and monitoring them all day. As a top user he often gets requests to dig stories. As long as they don't offer him anything, he is willing to look at the stories, and if they're any good, submit them.

Rajeesh

Rajeesh is a top 20 Digger who lives with his parents about 50 miles from New Delhi, India. He is about to take his High School exams, which is comparable to American Junior College. He plans to pursue a Bachelor's degree in Germanistics or English Lit beginning in the Fall. Rajeesh went to Digg after seeing Digg founder Kevin Rose on a TV show. At first, he just read content and recommended stories, but after about 3 months he began submitting. Submitting content made him feel more involved and also more competitive, he felt like he was driving where the site was headed.

He says he goes to Digg 2-3 times a day, but that number has gone down since Digg removed the top users list. He says that removes the incentive and also makes it apparent that Digg is a commercial site rather than one controlled by the users. On a typical visit, he will read, and Digg the stories he likes as well as comment on many of them. Currently, he submits 2-3 stories a day based on what he sees on other sites and on RSS feeds, but this is down from 12-15 a day before Digg removed their top users list.

He does not believe that there is any automated gaming of the recommendations, but does believe that people swap recommendations without actually reading the content.

Rajeesh participated in Beta testing for another social media site called Newslime. One interesting part of their business model was that they shared advertising revenues with the people who submitted highly rated stories. While he never found this to be any serious amount of money, he did find it rewarding to see that his contributions were valued. He has returned to Newslime to some extent since Digg took away their ranking system. He finds the Newslime community smaller, but more quality oriented and better educated.

He is in contact with most of the top Diggers, as well as contacting people who submit content that interests him. This is a way for him to meet people around the world with similar interests, such as environmental issues. While he has never left the India sub continent, he has friends through Digg in Australia, China, New Zealand, Canada, Dubai, Finland, and the United States and is in contact with most of them at least weekly.

Rajeesh believes a true social site would have to be a non-profit in order to truly focus on the users rather than profitability. He does not believe the aims of the people running the site mesh well with a true democratic, social site. Among the things that he would like to see Digg do to improve the site is bring back the top users list, lower the amount of advertisements and provide a way of determining the identity of a commenter, which he believes will lessen the problem with rude and vulgar content.

JSon

JSon is a 29 year old web developer from Philadelphia, PA. He is very tech savvy, spending a considerable amount of time online either for work purposes or entertainment. JSon became a member of Digg about 6 months after it was launched. The reason why he has remained a member is because of the connection he feels to the web development community on Digg. He was able to find new concepts about the tech community as well as enforcing some of the ideas that he had. JSon was a member of Del.ici.ous but stopped using it when he learned about Digg. “Digg is more about news and conversation. The community aspect comes into play when you look at the book marks of people on your friends list. There’s more feedback and it’s a better social network.”

JSon isn’t a leader in the Digg community, as some of our other subjects are. He is more of a regular that benefits from the content that the community provides. “I’m more of a cheap Digg user. I log on and digg a couple of stories on the homepage and read a lot of the comments. I don’t submit anything. I started out submitting stories but not anymore because by the time I’m ready to submit, someone has already posted the article. So, instead of adding a duplicate story to try to make a name for myself, I just digg the story

that was already submitted. Digg is at the point where it's so big that I don't have to jump in and submit anything. My part is really just to go on and digg stories that I like.”

Shawn

Shawn is a casual user of Digg – mostly visiting it to scan the headlines on the front page. He rarely logs in, so he rarely digs or comments on stories, and has never submitted a story. When he has dug stories, it was as much to save the bookmark to the story in his profile, so he could get back to it.

He is a graduate student at Georgia Institute of Technology. He uses socially driven content providers as a way of keeping up with the world. He and his friends also publish to each other stories that they found interesting, to keep each other informed and entertained.

Gregory

Gregory is an 18 year old top Digg user born in Croatia and currently living in Canada. He has been a regular user of Digg for about a year and submitting heavily for the past 4 months. He first went to the site after seeing it discussed on the message boards of neowin.com, where opinions were mixed, so he decided to see for himself. He was hooked almost immediately because he loved the concept of having the users control the content on the site. At first he was what he calls a “shy” user, meaning he mainly just read the front page articles, but as he began exploring the site he saw how to Digg upcoming stories and give feedback for what he did and didn't like. After a few weeks, he decided to submit something. At first he wasn't very successful, but eventually one of his stories hit the front page. He found that very motivating and began submitting more heavily. One day in October, he submitted a lot of strong content and over half of it made the front page. From there, he was a full fledged Digg user, submitting every day, commenting regularly and monitoring the up and coming content.

Gregory loves the fact that the people control the content at Digg and has truly enjoyed the social aspects of getting to know other users, adding them to his friends list and chatting in real time over IM about content on Digg. However, he does not think he would ever want to meet any of them in person because of safety concerns. He still posts at message boards, but would not consider using other social media sites because “Digg is the best site out there. That’s all you need to know.”

The thing he finds most frustrating is the attempts to game the ratings systems. He has been personally offered from \$20-400 to help get stories promoted, but has never taken any of the offers, nor does he believe he knows anyone that has. He also has a general awareness of a “Digg Mafia” that buries content critical of Digg, which he finds frustrating because he feels that the community should openly address the conflict rather than burying criticism.

He knows Digg is tweaking their algorithms to address these issues and generally feels that is a necessary step. He knows that Digg has made it more difficult to contact other Diggers and understands why they have done so. Still, he is frustrated by the removal of the top Diggers list.

Gregory is a big Digg fan, proud of his role in the community and expects to continue to be a heavy Digg user. Two changes he would like to see are bringing back the top Diggers list and adding an art category.

Appendix B Contributions

All three authors made significant contributions to the paper and worked well as a team. We were happy with the contributions of each team member to this study.

The participants Reynald interviewed for this assignment were JSon, James, and Husane. His main contributions were the project idea, figuring out how to contact the top Diggers, the introduction to this paper, participant profiles (for the people he interviewed), bibliography, and organizing and compiling the paper. He also made additions to the "Digg community" and "deviant behavior" sections. In observation of the site, Reynald was a regular user before the study began. His involvement was much like JSon's, he mainly read the articles on the homepage and the comments that were made to each story. He also submitted a couple of stories but none became popular. Occasionally, Reynald would look at the upcoming stories queue to try and dig something before it became popular.

Travis interviewed Kelly, Luke and Shawn. His main contribution to the paper was doing the background research to build the backstory for Digg, and writing the "changed and deviant behavior" section. In addition he contributed to the editing and formatting of the document. His main achievement while participating on Digg was researching an article that seemed a little suspicious, and based on the results of his research, burying it as being inaccurate.

Scott interviewed Malik, Rajeesh, Amazing Grace and Gregory. He developed the original outline for the paper and wrote the methods, community and conclusion sections of the paper as well as participating in the editing of the rest of the paper. In participating on Digg, he dug a number of articles and buried one, while commenting on some of them.

Bibliography:

1. Abbas (2006). *Digg.com: How to Make Money from Digg.com* Retrieved Feb 03, 2007 from <http://tnerd.com/2006/10/03/diggcom-how-to-make-money-from-diggcom/>
2. Bartle, R. *Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs*. Retrieved Feb. 04, 2007 from <http://www.brandeis.edu/pubs/jove/HTML/v1/bartle.htmlj>

3. Donath, J.S. (1996) *Identity and Deception in the Virtual Community*. Retrieved Feb. 04, 2007, from <http://smg.media.mit.edu/people/Judith/Identity/IdentityDeception.html>
4. Doss, S., Saleem, M., & Searer S. (2007). *Socially Given. Socially Driving Charity*. Retrieved Feb. 04, 2007, from <http://www.sociallygiven.com/blog/>
5. Grayhat. *How to be a Dirty Digger*. Retrieved Feb 03, 2007 from <http://www.wolf-howl.com/grayhat-seo/how-to-be-a-dirty-digger/>
6. Kim, A.J. Nine Principles of Community Design. Retrieved Feb. 04, 2007, from http://www-static.cc.gatech.edu/classes/AY2007/cs6470_spring/ajk-community-analysis-template.doc
7. Lessig, L. (2006). *Code: Version 2.0*. Retrieved Feb. 04, 2007, from <http://codev2.cc/>
8. MacManus, R. (2005) *Gaming Digg: the KoolAidGuy Saga* Retrieved Feb 03, 2007 from <http://blogs.zdnet.com/web2explorer/?p=90>
9. Messenger, J. (2006). *Digg Cheaters Get Caught*. Retrieved Feb 03, 2007 from <http://www.famousagents.com/2006/12/07/digg-cheaters-get-caught/>
10. Oldenburg, R. (1999). *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and How They Get You Through the Day*. New York: Marlowe and Company. Japanese edition forthcoming, Kajima Institute Publishing Company.
11. Randfish (2006). *Why it Doesn't Pay to Game Digg (or Other Link Aggregation Sites)*. Retrieve Feb 03, 2007 from <http://www.seomoz.org/blog/why-it-doesnt-pay-to-game-digg-or-other-link-aggregation-sites>
12. Saleem, M (2006). *Open Letter to Kevin Rose*. Retrieved Feb. 04, 2007, from <http://www.themulife.com/?p=244>

13. Saleem, M (2007). *7 Steps That Will Ensure Digg's Success in 2007*. Retrieved Feb. 04, 2007, from <http://www.themulife.com/?p=460>
14. Turkle, S. (1997). *Life on the Screen: Identity in the Age of the Internet*. Simon & Schuster.
15. Winfield, C. (2006). *And the List of Domains Ditched by Digg Keeps Growing*. Retrieved Feb 03, 2007 from <http://www.10e20.com/2006/12/21/and-the-list-of-domains-ditched-by-digg-keeps-growing/>
16. Newitz, A. (2007). *I Bought Votes on Digg*. Retrieved Mar 05, 2007 from <http://www.wired.com/news/technology/internet/0,72832-0.html>
17. www.digg.com
18. www.giggg.com
19. <http://www.neothoughts.com/>
20. <http://www.usersubmitter.com/>
21. <http://www.901am.com>