Effectively Reshaping Online Social Networking Sites:

The Effects of Online Communication on Groups Dynamics and Individual Behavior.

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Abstract

Social networking sites offer members efficient ways to communicate with an ever-increasing network of individuals. As the size of networks increases, human psychology, which evolved to socialize under drastically different conditions, can sufferer detrimental consequences. Sociological research has revealed differences in the group dynamics of online communities. Furthermore, cognitive psychology has hinted at possible detrimental effects that can arise for individual members due to the nature of SNS and the value placed on self-presentation. In this paper, we propose possible modification to current SNS as well as novel methods to mitigate the negative effects of online communities and nurture the positive aspects. These proposals are geared towards technology entrepreneurs looking to service online communities. In particular, the paper recommends minimized anonymity, implementing tools for group differentiation, and developing an anonymous and visible reporting systems.

Key Terms

SNS – social networking site(s)

in-group – relating to relationships within and between group members

outergroup – relating to relationships with members of another group

discrimination – positive or negative behavior toward another person based on his or her group membership (Schacter et al., 2011, p. 510)

prejudice – a positive or negative evaluation of another person based on their group membership (Schacter et al., 2011, p. 510)

deindividuation – a phenomenon that occurs when immersion in a group causes people to become less aware of their individual values (Schacter et al., 2011, p. 513)

diffusion of responsibility – the tendency for individuals to feel diminished responsibility for their actions when they are surrounded by others acting the same way (Schacter et al., 2011, p. 513)

Introduction

As the influence of the internet increases throughout the world, the structure of human society is morphing to accommodate the innovations that accompany the internet, such as near-instantaneous communication, rapid access to large quantities of knowledge, and expanding social networking sites (SNS). Human beings are an innately social species with the structure of society and even the human brain heavily influenced by the requirements of socialization (Schacter, Gilbert, & Wegner, 2011, p. 506). Yet, according to the social brain hypothesis (Gowlett, Gamble, & Dunbar, 2012) the human brain evolved through natural selection over millennia, developing specific adaptations suited for relatively stable, archaic social structures and environments. These adaptations are unlikely to change in the near-term despite the rapid changes caused by the internet and internet technology. Instead, technology must be adapted to better suit the evolved characteristics.

Therefore, a close analysis of the effects of the internet on society is suggestible when developing future online applications, and in particular when developing those applications that aim to fundamentally change the methods of social interaction. Current research on the effects of internet communities on individuals (Weinberg, 2014) is extensive and has revealed serious negative aspects of un-moderated or nearly un-moderated online communities, yet the research is lacking with respect to concrete and comprehensive suggestions for entrepreneurs whose goal is to create socially conscious SNS. Despite this, research has pointed to possible methods of mitigation for negative social behavior on future SNS. The socially aware entrepreneur seeking to foster an online community with mentally healthy and civilly proactive long-term members should focus on minimizing anonymity, increasing social fluidity, and developing automatic and user-friendly systems for detecting possible mental instability.

Humans as a social species

The human species is unique in the sense that it is inherently and *necessarily* social. Deprivation from social contact can lead to negative psychological effects rivaling physical torture (as cited in Schacter et al., 2011, p. 505). Even single occurrence of exclusion from social activities has been shown to activate the dorsal anterior cingulate (Kawamoto et al., 2012), an area of the brain associated with physical pain. This need for social interaction is what led to larger brains that have adapted to experience negative physical symptoms when social functions are restricted or denied. The social interactions to which the brain adapted were relatively limited in quantity and frequency; tribes of hunter gatherers had access only to immediate members for social contact, rarely encountering members of others groups and even when doing so, interacting intermittently due to prejudice against non-group members.

The rate of change of the social structure has only augmented since the adaptations occurred, but until the advent of the internet, the brain was relatively well suited for the challenges posed by increased global socialization. While group sizes increased with industrialization and improved travel, individuals nonetheless tended to restrict themselves to local communities. Recently, though, to continue this trend of increasing social interaction, technology entrepreneurs have taken to the internet in an attempt to satisfy the social hunger inherent to humans; yet, few have consciously considered the consequences of such drastic changes in the method of socialization.

Group dynamics.

The effects of deindividuation and the diffusions of responsibility are well-studied effects in the area of sociology (Schacter et al., 2011, p. 513). Deindividuation is the “not my problem” effect, where the immersion into a group causes the individual to become less aware of their

individual moral values. For example, an individual user of a social media site, if receiving a message multi-recipient message from a friend, might be less likely to respond promptly due to the idea that someone else will take care of it.

Closely related, diffusion of responsibility, colloquially referred to as "mob mentality," is the tendency for people in groups to feel less responsible about the actions they are taking. A clear instance of this effect, discussed in more detail later, is that of the culture of software piracy. As explored by Hinduja (2008), individuation through increased anonymity, exacerbated by the difficulty of tracking online activity of individuals, serves to liberate internet users to commit software piracy, a federal felony, under the false impressions that because others are doing it, the moral repercussions should be fewer or nonexistent. In order to develop an effective online social network which maintains a normal level of morality, these two group effects must be considered and either mitigated or used constructively.

Individual behavior.

Social groups also have direct and concrete effects on the individual by heavily influencing their self-perception and self-esteem. In psychology, personality is typically classified using the Big 5 (Schacter et al., 2011) – five dimensions which research has shown to be effective at specifying personality. Lander and Lounsbury (2006) demonstrated a relationship between individual personality and internet usage, while Goodman et al. (2012) recently showed that Facebook has a measurable impact on the perception of personality. Furthermore, Moreno et al. (2011) conducted a survey revealing a correlation between Facebook usage and increased negative depressive feelings of the participants. Therefore, SNS appear to have a direct effect on individual personality, at times possibly exacerbating the risk of developing mood disorders such

as depression. In order to maintain a healthy user base and to proactively prevent such results, any new social network would need to address the underlying issues directly.

Growing social networking sites

The internet has fundamentally changed the methods of socialization disposable to individuals. Facebook, the largest online social network, currently has a user base of over 1.2 billion monthly active users with approximately 640 million minutes spent cumulatively on the site per month (Facebook Inc., 2014). Twitter and Google+ follow closely behind, while other SNS and discussion areas of the internet - such as Reddit, 4chat, and Anon - have a dedicated base of anonymous users. The internet, and in particular social networking site, are a growth industry open to creative entrepreneurs looking to take advantage of the innate human need for socialization. By keeping in mind the sociological aspects of online interactions, it is possible to create an effective social network adapted for the needs of the human brain that can lead to a healthy and active user base.

Effects of Online Social Networking Sites on Group Dynamics

Sociology as a field focuses on the study of group dynamics, working under the axiom that human being are primarily social. This social aspect has only increased with the spread of the internet. The ability to reach over 2 billion connected internet users within milliseconds has led to some drastic and unforeseen uses of technology – both positive and negative – that are unique to SNS. With such a large potential user base, internet entrepreneurs have jumped at the chance to capitalize on larger and larger groups with little regard for individual members. While current SNS have proved successful with this approach, future-oriented and socially aware entrepreneurs face the challenge of not only creating but also *maintaining* a civil online community while affording individuals the power to collaborate.

Anonymity, the internet, and regression of social rules

Online anonymity has had a drastic impact on the dynamic of groups by reducing the effectiveness of social norms. One such example is the increasing frequency of cyberbullying – the use of information and communication technologies to cause purposeful psychological harm to others. Cyberbullying is most prevalent among teenagers and young adults (Barlett, 2013, p. 4), the demographic that often popularizes new online technologies and drives growth. Barlett (2013) has shown that anonymity is strongly indicative of positive attitudes towards cyberbullying that can lead to an increase in cyberbullying. For example, cyberbullying occurs more frequently over instant messages than email and is typically more aggressive and harmful. Barlett has hypothesized that the anonymity that IM clients provide by using pseudonyms leads to this increase while the sense of identifiably associated with emails mitigates it.

Yet, anonymity appeals strongly to online internet users, as shown by the negative response to Google's attempt to de-anonymize the YouTube community (Heather, 2013). However, failing to take into account the negative group dynamics that can arise due to anonymity can be extremely harmful. In particular, a startup might have trouble surviving a single instance of publicized cyberbullying due to the increased focus on preventing cyberbullying. Furthermore, Rafferty et al. (2014) surveyed young adults and provided anecdotal evidence for a link between cyberbullying and other aggressive, abusive, and unwanted online behavior. Communities without effective systems to curtail this type of behavior, especially with the current spotlight, will likely only exist temporarily, and are therefore difficult to monetize. Furthermore, such behavior can only lead to decreased satisfaction with the new SNS and decreased participation over time. The regression of social rules encouraged by increased online anonymity is not a goal of new SNS.

Collective actions and organization

However, the value internet users place on anonymity is not unfounded; anonymity can serve as a powerful binding force for SNS that can lead to collective, unified action. Despite the fact that social media did not play as significant a role in the 2012 Arab Spring uprisings as initially posited, analysis of the Twitter data by Bruns, Highfieeld, & Burgess (2013) conclusively showed a massive online movement in favor of the protests. They also revealed a sharp and *continued* increase of non-Latin language users of Twitter. Therefore, despite the eventual inability of online movements to bring meaningful political change, the power of collective action facilitated by SNS has led to a meaningful online change; in particular, anonymity afforded to the users led to a diffusion of responsibility and a leaderless, dynamic movement, which was capable of amplifying a single voice. The Arab Spring is a clear example of how SNS can be effective tools for rapid and responsive mobilization that can spur a large burst in the user base of an SNS.

Anonymity further serves to break down common intergroup barriers such as race, religion, etc. by allowing individual to cooperate on a single task and goal without direct appeal to race or other typical group characteristics. The hacker collective Anonymous, while infamous for some of its targets and activities, is a loosely organized political/social movement with a diverse set of members, ranging from western technocratic youth to Easter European hackers (Pendergrass, 2014). The lack of *outside* identifiability facilitated this type of cross-cultural and global organization (Pendergrass, 2014). Without outside influence, anonymous groups can generate closer, tightly knit communities; member exposure to other groups is limited by the fact that membership in an anonymous group is by definition not widely known – only members recognize other members. Exclusivity of groups correlated with increased positive in-group

prejudice, the favoring of group members, and increased negative outergroup discrimination, adverse behavior towards non-members (Schacter et al., 2011).

Effects of Online Social Networking Sites on Individual Behavior

Despite the name, SNS have profound effects on not only the social groups but also on the individual group members; effects such as low self-esteem and lack of motivation while still heavily debated, has been shown by some studies (Kross et al., 2013). Therefore, to assure a successful online social venture, the effects of SNS on individual users needs to closely analyzed and considered. Current SNS, such as Facebook, have done little to ameliorate the conditions of their users, instead focusing on fulfilling their need for social contact without taking into account the possible negative effects on mood, motivation, and personality that new tools such as a Wall/Newsfeed can cause. This lack of insight is not effective in the long-term, as revealed by the constant shifts in privacy policies of Facebook, Google, and Twitter.

Individuals and online moods

SNS serve to not only connect people, but also as a tool for emotional disclosure – think of emoticons and Facebook "moods." Yet, research by Heiken (2013) has shown that this Facebook can have a direct effect on the subjective well-being on young teenagers. By messaging volunteers constantly throughout the day, essentially doing an in-vivo market study, they discovered that increased usage of Facebook resulted in less satisfied replies and in reports of lower subjective feelings of well-being. This effect is likely not specific to Facebook but also descriptive of general SNS. Shifting to the economic implications, because most users of new SNS tend to be teenagers (they are the popularizing demographic of new web technologies), this research predicts an adverse effect on the happiness of initial users if appropriate measures to prevent it are not taken.

One possible theory for this negative effect that lends some insight into effective methods for preventing it is as follows. SNS are tools that present almost exclusively positive life events to others in the presenter's group. Subsequently, the recipient of that information concludes that their friend is much happier and well off than himself or herself. The Fundamental Attribution Error, a well-studied cognitive bias that causes individuals to attribute the success of others to inner qualities and the success of themselves to outside reasons, is likely partly behind this effect. After seeing a smiling picture of a friend, for example, an individual would likely assume that the friend is inherently better, happier, etc. than himself without considering the possibility that the friend is smiling for the mere photograph. While the causal relation between Facebook user and an objective decline in psychological well-being has been disputed (Jelenchick, Eickhoff, & Moreno, 2013), the importance of the psychologically healthy user-base is important enough to warrant increased caution. This is especially pertinent when dealing with strong such negative emotions and disorders like depression and body dysmorphia.

Social networks and isolation

Despite the fact that more recent, in-depth research by Heike (2013) found no correlation between mental disorders and SNS, the original paper by Kraut et al. (1998) found a positive correlation between feelings of loneliness and increased internet use. Paradoxically, the internet seems to provide merely superficial social interactions that leave the user feeling even more isolated than before. The factor that affects feelings of loneliness and membership, then, seems not to be quantity or facility of interactions but rather quality and depth of social relations. Generally, people prefer strong emotional ties to a smaller group of individuals (forming a tribe, forming a family) as opposed to larger, more superficial relations. Online interactions facilitate the latter while possibly hindering the former.

Current SNS only worsen the problem through the lack of appropriate tools to differentiate between different types of relationships. When best friends and former high-school acquaintances receive the same treatment of "friends," the user needs to make a more direct effort to differentiate the two. Another example is the fact that current SNS differentiate little between status updates of close, meaningful friends and status updates of acquaintances. This effect is not due to lack of technology – the systems exists to differentiate between groups, as Google's Google+ network shows -, but are instead a direct cause of lack in understanding of the basic psychology underlying group memberships and its effects on individual members. Users would be more satisfied with smaller, tightly knit networks than with an expansive web of acquaintances. Simply facilitating connections should not be the only goal of SNS, and an SNS that can exploit this need for strong connections is likely to receive a warm reception among users.

How to Run an Effective Social Network

The research conducted so far reveals that current SNS are rarely, if ever, effectively utilizing the inherent social nature of human beings to its full potential. In order to construct a better SNS, entrepreneurs should look for ways to fix this lack of basic psychological understanding. With that goal in mind, sociological research has already provided information on how to mitigate the negative effects of online interactions while nourishing the positive aspects. While the research is still recent and most has yet to be replicated thoroughly, enough exists to begin laying out a map for effective methods to run a new social networking site - an SNS that takes into account basic psychological science about social group interactions as well as the effects that groups can have on individual members.

Creating interactive groups

The primary goal of SNS is to create interactive, lively groups. Maintaining a high level of interaction between users is one of the main factors contributing to site revenue (Facebook Inc., 2014), subsequently, any SNS looking to be profitable must engage groups directly and effectively. Research has revealed a few possible ways to facilitate this active and long-term engagement, two of which attempt to mimic the authenticity of real-world relations. Simply, SNS should have a system of responsibility for individual members. One straightforward implementation consists of reducing the level of anonymity, which can effectively curtail some of the worse cases of active discrimination and harassment (cyberbullying). The second method is to provide increased flexibility within groups by providing niche sub-groups. They serve the purpose of allowing users to distinguish clearly and easily between different levels of friendship/familiarity. With the two above suggestions, a new SNS should be able to avoid some of the more detrimental effects of increased social group size online while still maintaining a large, profitable, and engaged user base.

Reducing anonymity.

Reduced anonymity increases the feelings of responsibility by attaching actions to specific user profiles. This, in turn, decreases the deindividuation effect of large groups, which tend to be significantly more common online than offline due to the ease of communication and increased anonymity. Note that the only requirement is for the attachment of a *history* to each user profile, not necessarily for a real-world identity to be associated with each user. This is in sharp contrast to the approach that current SNS are taking where a real-world identity is a strict requirement. Yet, one of the simplest ways to establish an association between the history of a user and the profile of a user is to *encourage* the use of a real identity. Profiles should be open

books where a user can fill out interests, hobbies, passions and even work history and education history (Nosko, 2010). All if this should be done with the goal of creation profiles that are of great value to the users, though not necessarily directly associated with their real identity; yet, this distinction is mostly academic. As Google+ and Facebook have shown, privacy and anonymity is not a high value concern for general users.

Another important aspect to consider is that a reduction of anonymity, while necessary, is not sufficient to reduce all cases of harassment and cyberbullying that can take place; therefore, the implementation of a reporting system is imperative. Well-documented cases exists (Rafferty et al., 2014) where the victim and perpetrator know each other personally, where the level of anonymity is near zero. To mitigate this type of negative abuse, a solution needs to bridge between group dynamics and individual traits, and therefore involves more complex software systems. In particular, it should help to provide an anonymous reporting system that is visible and easily accessible to members. Unlike current SNS, this system *needs* to remain anonymous despite the possibility of false reports. The focus of any SNS lies on maintaining strong and connected groups. This is achievable only if victims of abuse feel comfortable reporting group members that cause abuse or degrade the quality of the community. An anonymous system encourages this by taking advantage of the diffusion of responsibility; anonymity affords individuals access to a large collective group – the groups of anonymous individuals – and therefore reduces the direct perceived responsibility and consequences. Nonetheless, the issue is still difficult to handle well, and an experienced group of trained professionals is highly recommended to maintain the identity of the victim from the abuser. This is likely be the most cost-intensive recommendation in this paper, but preventing online abuse is not only good for the community and therefore investors in the company, but is also a moral obligation.

Increased flexibility.

However, reducing anonymity and implementing an anonymous reporting system does not solve all problems; instead, an active role needs to exist to assure individuals feel attached to their groups. Instead of members having over one thousand friends, an effective SNS would do well to encourage smaller, more niche groups. Humans are a social species that evolved with small, closed communities, and increasing the size of those groups serves only to degrade the connection individuals feel to one another. While large diverse groups, such as Anonymous, are effective at collective actions, smaller, tighter groups better satisfy the psychological needs of their members. One solution for this problem is to follow in the footsteps of Google+ and implements circles – groupings of people based on user preferences. In this way, a new SNS can retain the benefits of large groups while still providing the user with the smaller groups needed for an enjoyable experience.

Furthermore, filtering by these groups on the Newsfeed or Wall would further increase the usability of the SNS. Users would likely feel more connected and dedicated to their smaller groups, thereby encouraging use of the network, and the feelings of depression and low self-esteem currently caused by showcased events would likely decrease. There is a difference between seeing an acquaintance achieve a promotion and then reflecting inwardly about the current state of affairs of the user himself/herself, and reading the same update from a close friend. In the former, negative feelings of low self-worth are likely to arise, while in the latter, pride and happiness would likely accompany any negative emotions. In a sense, the goal of this filtering system would be to provide users with a simple way to easily manage updates from hundreds of different groups. With such a systems in place, an SNS can maintain a healthy group dynamic that affords individuals both responsibility and flexibility in groups.

Encouraging healthy users

Another important facet of maintaining a profitable and growing SNS is assuring the mental health of the user base. Currently, SNS have paid little regard to assuring their members maintain not only healthy relationships but also a stable mental health. As discussed previously, studies have found a positive correlation between time spent online and feelings of loneliness; furthermore, it is clear that abusive tactics such as cyberbullying can lead to negative mental states if an SNS does not make an effort to provide adequate support to the victim. Based on current psychological research, this paper proposes two methods aimed at reducing anxiety, depression, and other negative mental states for users of SNS.

Friendships networks with open communication.

Moreno (2011) analyzed disclosure of depression online, and found that open discussion and quick response to depressive posts led to improvement in mental health. This is corroborated by Nimrod (2013), whose study into online communities dedicated to treating depression has shown the effectiveness of online interaction in helping individuals struggling with series mental health issues. They key observation in Nimrod's and Moreno's work is the idea of disclosure and openness as effective routes for providing support for the mentally depressed. With an entire community of individuals who are currently struggling or have already overcome depression, individuals in these forums feel more at welcomed than anywhere else. Incorporation something similar within an SNS should lead to similar results.

However, providing secure environment for the treatment of mental health issues appears to require a level of anonymity that would be counterproductive in other instances. As discussed previously, anonymity tends to increases instances of abuse of maltreatment in large groups. Therefore, an open forum of support, while anonymous, would have to remain heavily

moderated by a group of professionals. While an open communication forum for individuals is beneficial for those struggling with mental disorders such as depression, the anonymity should be restricted to that area of the SNS; in a sense, a dedicated sections should exist which provides for anonymous/pseudo-anonymous discussion of personal issues faced by members. As Nimrod's study on online support forums demonstrated, having such an open area for discussion without attachment to individual's identity provides those struggling with mental health issues the luxury of information without the negative social stigma. A separate system from the main SNS should not be difficult to implement and would assure effective support groups for individuals. One further steps could be to subdivide into subgroups that are more specific, but little research currently exists on this regard.

Critical, anonymous evaluations.

Lastly, while anonymous subgroups would provide support for the user base, seeking treatment for mental disorders has proven a challenging step (Schacter et al., 2011). However, psychological research into motivating individuals has shown that one of the most effective methods of motivation is peer-influence (Cialdani, 2009). This type of motivation relies on the need for human beings to be internally consistent as well as the need for external validation. If a friend asks for something, as he/she has likely asked many times before, not carrying out the action creates an inconsistency in the relationship. Therefore, to motivate users into seeking help for possible mental disorders, an effective system of communication between friends is imperative. A system that facilitates the differentiation between groups of acquaintances, combined with a private messaging system between close friend groups is likely to lead to members seeking treatment early. To improve this system further, an SNS can attach a reporting mechanism for individuals thought to be at risk. In order to prevent abuse of this system and to

decrease the workload of hired professionals, the system could be restricted to only individuals the reported members has designated as close friend.

Conclusions

If the goal is to develop a growing community for eventual monetization, social stability between members and individual member mental health are key. Sociology research has revealed many novel aspects of online communities that SNS need to consider before developing internal systems of moderations, control, and deployment. Anonymity serves as a resource to attack individual mood disorder such as depression, yet can counterproductively encourage cyberbullying. Large groups can participate actively in civil protests and actions, and SNS facilitate such work, but the danger exists of unintended results arising from such collective actions, such as decentralized bullying and the rise of rouge groups capable of causing significant real-world harm.

Therefore, a strictly anonymous SNS lead to an unsustainable business model. These types of networks are better suited for underground political movements and impromptu collective action, rather than a growing user base with increasing revenue potential. Google+ is a marked example of how to encourage users to utilize real-world identifiable names when signing-up for a service, and due to that success, Facebook has now followed suit (Facebook, Inc., 2014). New SNS looking for long-term profitability only harm themselves if they decide against such policy; furthermore, socially aware entrepreneurs will benefit from this approach as long as identifiable data is maintained private (either through data anonymization or by not sharing it, though the latter is likely not profitable) from both governmental and third party entities. Yet, in order to mitigate possible negative effects caused by the biased presentation of life events, a new SNS could utilize semi-anonymous forums as effective support groups for

members. Furthermore, the implementation of a reporting system that allows members of an individual's "inner" circle to report those they believe to be suffering from mental health issues could significantly improve the overall mental health of users.

As socially aware entrepreneurs, the goal of providing effective SNS that take into account the mental health of their users should be at the forefront of any project. Current sociological research has shown that the internet in general has a fundamentally different impact on human psychology than previous technologies. Furthermore, research on current SNS and online communities has shown the lack of concern currently paid to mental health issues and group dynamics has caused unexpected harm. The solutions proposed in this paper are only preliminary, but implementing the described systems should help alleviate the issue, stabilize a user base, and ensure future grown of an SNS.

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