

Removing Gamification from an Enterprise SNS

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ABSTRACT

Gamification, the use of game mechanics in non-gaming applications, has been applied to various systems to encourage desired user behaviors. In this paper, we examine patterns of user activity in an enterprise social network service after the removal of a points-based incentive system. Our results reveal that the removal of the incentive scheme did reduce overall participation via contribution within the SNS. We also describe the strategies by point leaders and observe that users geographically distant from headquarters tended to comment on profiles outside of their home country. Finally, we describe the implications of the removal of extrinsic rewards, such as points and badges, on social software systems, particularly those deployed within an enterprise.

Author Keywords

Gamification, organizational social networking

ACM Classification Keywords

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

INTRODUCTION

Designers of social software systems have employed aspects of gamification – the integration of game-inspired elements – to incent repeat usage, increase contributions, and establish user reputations. These incentives can come in the form of points, badges and leveling that can help the player advance in status. In the workplace, game-like systems have been employed to collect information about employees [6] and incent contribution within enterprise social software [5]. Ultimately, gamification aims to create a sense of playfulness in non-game environments so that participation becomes enjoyable and desirable.

Game mechanics draw heavily from theories of social

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psychology that predict how users can be motivated to participate in collective systems for individual benefit [1]. For instance, badges and points can be categorized as extrinsic rewards for participation (e.g. posting a comment, checking into a location). There is, however, evidence that extrinsic rewards can undermine intrinsic motivation to complete a task, particularly if the task is interesting and beneficial to the user [2]. This suggests if members of a community find participation in a social site enjoyable, the addition of specific reward structures (e.g. levels, badges) may actually decrease already existing intrinsic motivation to contribute.

In this paper, we focus on the implications of the wholesale removal of such features from an enterprise social networking service and answer the following main research question:

How does the removal of gamification features affect user activity within an enterprise social networking service?

Our data suggests that the removal of such features does negatively impact continued participation in the SNS, and that the removal of the extrinsic rewards also decreased the activity by geographically distant users, despite factors that might increase their motivation to maintain activity. We make a secondary observation that there were geographic differences in how users employed commenting strategies within the system, where those outside of the United States tended to reach out to those outside their home locations.

METHOD

The current study focuses on a points-based system on an enterprise SNS deployed within a large IT enterprise headquartered in the northeastern United States with a globally distributed workforce of approximately 400K employees. The goal of the incentive scheme was to encourage content contribution, so points were awarded for the addition of lists, photos and comments. Each user received 5 points for each contributed photo or list, while comments on a profile page, photo and list received 15 points.

Log analysis had revealed that comments helped to draw visitors back to the SNS, so this particular scheme rewarded commenting behavior [5]. The incentive design also included a leveling component, with 4 tiers of status

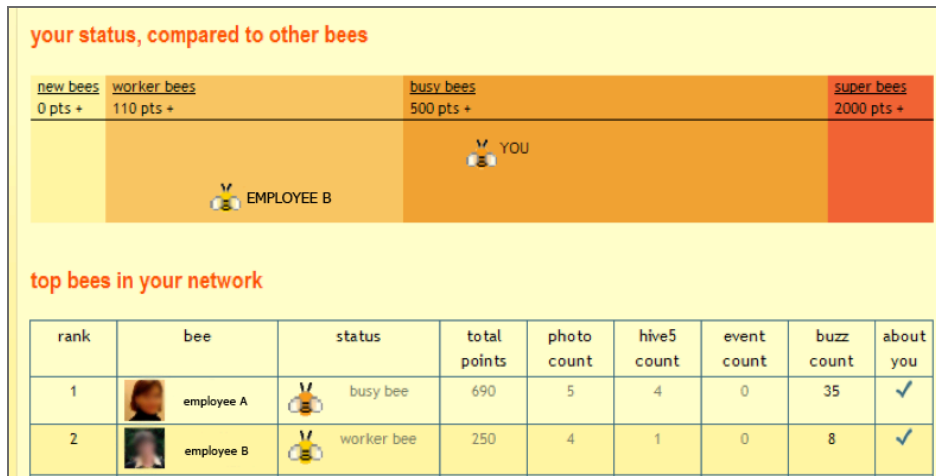


Figure 1. Member status display (top), leaderboard showing point totals and count of content contributions (bottom).

depending on accumulated points (Figure 1) and the appropriate badges displayed on user profile pages. Those who received the most points were spotlighted on a leaderboard, accessible from the user’s login page (Figure 1).

To measure the impact of the points deployment on the social system, an experiment was run for six months in which half of the site was able to earn points and the other half of the site was unaware of the existence of the points system. In an analysis of the first three weeks of the experiment, the incentive scheme dramatically increased the overall levels of content contributed upon introduction, followed by a decayed impact [5]. Over the entire six months, usage analysis revealed that as new users joined the site, those who could earn points added more content over time, both short and long-term, yet the proportion of new users who contributed content was the same between the points-earning and non-points-earning users [3]. After the six-month deployment, the points deployment became available to all members of the SNS.

The current study focuses on a specific event that has heretofore not been reported in prior research – the complete removal of the points system from the site 10 months after their introduction as an experimental feature. Points removal entailed the deleting of all interface features related to the incentive, such as the profile badges, leaderboards and display of point totals to users. Site administrators announced the removal of the points system via the user forums found on the employee intranet. The data in the current study consists of four weeks of usage logs from two weeks before and after points were removed from the site. We limited the users of the study to those that had used the system at least once during that time period.

RESULTS

Our analysis focuses on 3486 members of the site that had contributed at least one item of content during the four-

	Points Deployed Total (#/user)	Points Removed Total (#/user)
Photos	4502 (2.6)	2926 (1.7)
Lists	1277 (1.0)	780 (.64)
Profile comment	8983 (5.5)	4056 (2.5)
Photo comment	2598 (2.9)	1348 (1.5)
List comment	1770 (2.5)	873 (1.2)

Table 1. Contribution of content type during points deployment (2 weeks) and after points removal (2 weeks).

week analysis period. Table 1 presents the total number of contributions by each of the content types before and after the removal of the points system for these members.

Because the distribution of contributions is non-normal, we conducted all analysis on log-transformed data; however, we report all results as non-transformed for readability. A repeated measures GLM (points deployed/no points) reveals that the removal of the points significantly decreased contributions of photos ($df=1,1717$, $F=38.24$, $p<0.001$) and lists ($df=1, 1211$, $F=39.07$, $p<0.001$). The analysis also reveals a main effect of the removal of points over all types of comments ($df=1,710$ $F=49.50$, $p<0.001$; $df=1,885$, $F=308.78$, $p<0.001$; $df=1,1627$, $F=603.95$, $p<0.001$ for lists, photos and profiles respectively).

We conducted a qualitative analysis of the comments left by the point leaders reveals that types of comments contributed by the most active users during this time period differed in content and formality. One type of comment observed was extremely concise and greeting-oriented, placed on a profile page.

“HI”

"Hiee..."

"howz work goin on..?"

"Nice.."

Another type of comment left by the points leaders were placed on the associated and generally focused on the target content of interest.

"Love the pics. Have some ideas on articles for you, but might want to give you the lowdown first. Up for a chat sometime?"

"Connect back to me and then you can see some great pictures I know you'll enjoy!"

After the removal of the points systems, we observed that the prevalence of terse greeting-oriented comments subsided. One possible explanation can be linked to the design of the site. In this case, adding comments to a profile page takes one click from the homepage, while adding comments to a content type (e.g. photo or list) takes at least two clicks.

Finally, we investigate in more detail whether the points-based incentive system had a differential effect on globally distributed employees. Based on prior research that suggested that motivations for SNS usage differ between employees who are geographically central and those who are geographically distant from headquarters [9,10], we analyzed points activity of the 1815 members from the United States and the 287 members from India, the two most active geographies in the study sample (Table 2). Repeated measures GLM (points/no points) and country (India/USA) as a between subjects variable reveals a main effect of the removal of points over all types of comments for both countries ($df=1,478$ $F=15.822$, $p<0.001$; $df=1,596$, $F=27.62$, $p<0.001$; $df=1,733$, $F=51.93$, $p<0.001$ for lists, photos and profiles respectively).

The analysis also revealed a main effect of country for profile comments ($df=1,733$, $F=444.88$, $p<0.001$), with users from India contributing more profile comments than those from the United States. While the total (raw) numbers for India is generally below those of the US, the contribution levels are quite similar when normalized by number of active contributors for that content type. The noteworthy exception is the number of profile comments

	USA Total (#/user)	India Total (#/user)
Photos	4090 (4.1)	550 (5.6)
Lists	1159 (1.7)	104 (1.5)
Profile comment	3502 (4.1)	3543 (20.7)
Photo comment	2430 (1.3)	189 (5.6)
List comment	1584 (3.6)	102 (2.6)

Table 2. Contribution of content type by country over all four weeks.

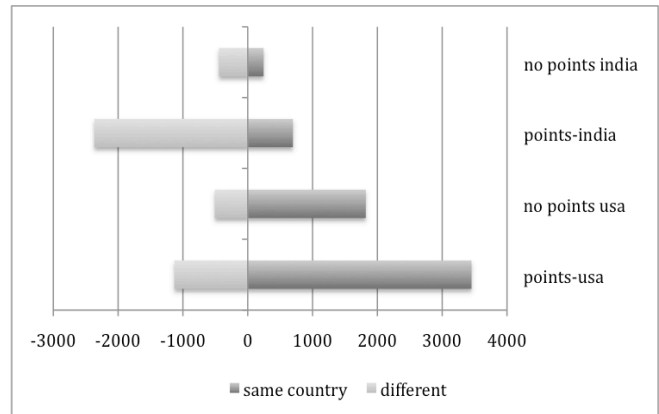


Figure 2. Comments within and between countries before and after the removal of points.

contributed by employees from India. The total number of profile comments is larger than those from US employees in total (3543 vs 3502) and considerably higher per active contributor (20.7 in India versus 4.1 in the US).

To further characterize differences in commenting patterns, we recoded comments to indicate whether or not users in each geography left comments on member content or profiles in different countries and same country. Figure 2 describes the directionality of comments between and within countries, normalized by posts/total number of members inside and outside the country (e.g. for users from India, the number of members inside and outside India).

These results suggest that users in the United States tended to comment on content contributed by users in the same country, while users in India tended to comment on content created by those outside the country. Closer investigation of the points leaders from India reveals that their organizational affiliation is from the Services division, which is one that provides operational and technical support for internal and external clients. This finding is consistent with prior research detailing the proportion of friend connections between and within countries for India and the US [9] and lends additional support to previous observations regarding differing motivations for SNS usage across factors such as geographical distance and organizational function within an enterprise.

DISCUSSION

The main contribution of this study is the observation of the impact of the removal of a gamification feature within a social networking system. The removal of the points system made a significant negative impact on the user activity of the site, and our analysis suggests that contribution of content significantly decreased after the deactivation of the points system. This suggests that such extrinsic rewards did influence a segment of the user population to participate more intensely while the point system was in place.

We also observed that the removal of the gamification feature decreased activity by users in the two most active geographies, the United States and India. However, compared to users in the United States, users in India commented more often on profiles outside of their home country. This is consistent with research that suggests that geographically distant members of an enterprise, far from headquarters, have been observed to use social software systems as a way to learn about its organizational culture and build one's reputation [7]. Again, however, there was a negative effect of the removal of the extrinsic rewards system, suggesting that intrinsic motivation to participate may not be consistent across individuals.

We suggest two main implications for the design of gamification systems that result from our findings. First, the complete discontinuation of a game-like capability should not be taken lightly, as they do seem to motivate participation within a social system even for a short period of time. If the particular game functionality seems stale and in need of a redesign, one approach would be to have an immediate transition to another game-like system to incent new players or those who do participate primarily for extrinsic rewards. In the case of this particular system, the designers implemented a new feature to encourage viewership of a more diverse set of content [4].

Second, we observed differences in the way users reacted to the incentive system and that there were different strategies adopted by the points leaders. However, other members of the SNS may perceive unsolicited profile comments as disruptive. One possible intervention would be a clearer delineation of the rules of engagement and fair play. This could be stated in policy by the site administrators or through moderation within the system. Another approach would be an incentive that increased common ground, as a way to encourage collaboration or shared identity as way to possibly reduce disruptive gaming from participants who follow a different set of game values.

While we did not specifically study the cultural consequences of this specific form of gamification, we propose that game-like incentives can embody certain values, such as competitiveness, which may not be consistent with the culture of the organization [8]. In this case, employees may not feel comfortable participating in a system, which encourages such behavior. On the other hand, members of organizational cultures that value public competition may be extremely motivated by features, such as leaderboards. Further, local culture may play a role in the design of such systems. For instance, a point-based currency on a Chinese online community reproduced norms of social exchange and sharing within that culture, such as *guanxi* and *renping* [11]. As a result, gamification features in such cultures would require incentives that included ideals of reciprocity, social obligation and face-saving.

LIMITATIONS

This study was conducted within a single global organization and so was necessarily influenced by the culture of that organization. Our results should be interpreted in that light. Future work in other organizations and settings is needed to better determine the generalizability of our findings. Given the high levels of interest in gamification and enterprise social computing, we think that this research will serve as a useful foundation for future work in this area.

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