

Predicting Successful Completion of Online Collaborative Animation Projects

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ABSTRACT

Online creative collaboration projects are started every day, but many fail to produce new artifacts of value. In this poster, we address the question of why some of these projects succeed and others fail. Our quantitative analysis of 892 online collaborative animation projects, or “collabs,” indicates that the early presence of organizational and structural elements, particularly those of a technical nature, can predict successful completion.

Keywords

Animation, leadership, online creative collaboration, social computing, predicting success, online communities.

ACM Classification Keywords

H.5.3 [HCI]: Group and Organization Interfaces---
collaborative computing, computer supported cooperative work, web-based interaction.

General Terms

Management, Design, Experimentation, Human Factors

INTRODUCTION AND BACKGROUND

User-generated content now dominates the Web, and users are increasingly presented with opportunities to create new artifacts in a collaborative setting. In many cases, as with offline collaborations, these projects will not be completed. Yet, contributors have a finite amount of time and effort to invest in these projects, and completion is often their goal. How can they identify and select the online creative collaborations with the most potential to succeed? By identifying valid predictors of success in online creative collaboration, we can design online communities and tools that better support the creation of meaningful social interactions and valuable new artifacts.

In this poster, we describe a quantitative study of success prediction on Newgrounds (<http://newgrounds.com>), the oldest and largest online host of Flash-animated movies and games. Newgrounds community members frequently organize multi-author, collaboratively-made animations called “collabs” using the site’s discussion forums [1]. To

start a collab, one member posts a new thread, called a “collab thread,” in the Flash forum describing the project and inviting community members to join. The thread creator typically assumes the role of “leader,” while every other participant takes on the role of “artist.” If a collab thread attracts enough interest, it becomes the locus of activity for the collab’s duration, attracting many replies.

The goal of many collab members is the completion of an animated movie or game [1]. Animators refer to this completion as a “successful” collab, whereas incomplete projects are “failed” or “dead.” Successful collabs offer many benefits, including audience exposure, improved online reputation, and financial rewards via advertisement, cash prizes, and sponsorship. These benefits present powerful incentives for Newgrounds members to seek out collabs with high success (completion) potential.

METHODS

The target of our data collection was the Newgrounds discussion forums. We scraped all threads in the Flash forum whose last reply was posted before January 1, 2008, for a total of 137,328 forum threads. For each thread, we collected the title, reply count, date posted and author of the first and last posts, message content of the first post, and the unique ID. We then purposefully sampled 892 collab threads from this collection in three bins: low (< 10 replies, N = 300), medium (10-50 replies, N = 300), and high activity (> 50 replies, N = 292; only 292 high activity threads existed in this time frame).

To analyze these data, two judges performed a content analysis by manually coding the first post of each collab thread for structural elements. We assessed intercoder reliability for each item in the coding scheme using ReCal, with satisfactory results (average intercoder agreement per item: 94%; average Cohen’s κ per item: 0.70). Each judge then claimed half of the 892 first posts and independently coded them. The finalized coding scheme contained 47 items, grouped into 7 broad categories:

- **Themes:** Content guidelines for the project, e.g., music, single narrative, comedy, or violence. (13 items)
- **Specs:** Technical specifications for the project, e.g., dimensions, frame rate, audio streaming, or font embedding. (12 items)

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- **Restrictions:** Explicit prohibitions for the project, e.g., violence, nudity, profanity, or particular animation styles. (6 items)
- **Authorship:** Policies for who receives “author” credit if there are more project members than authorship slots, e.g., best submissions, most helpful, or a vote. (6 codes)
- **Gatekeeping:** Rules governing who can join the project, e.g., leader decides, certain experience metrics, or tryouts. (5 items)
- **Contact information:** Instructions for contacting the leader, if any, e.g., email, instant messaging, or private messages. (4 items)
- **Arrangements:** How multiple animation submissions are integrated: linear, nonlinear, or continuous [1]. (1 code)

Following this content analysis, the judges independently categorized the outcome of each thread. If a judge found that the thread led to a completed animation, the judge categorized the thread as a success and recorded the unique ID of the resulting completed animation. If not, the judge categorized the thread as a failure.

Finally, we performed an exploratory logistic regression analysis [2] to identify which items in a thread’s first post predicted its eventual success or failure. For this analysis, we grouped all the items in the categories other than themes, specs, and arrangements into one category, “organization”.

RESULTS

Our results show that out of a total of 892 collab threads, 112 were categorized as successful, while 780, or 87.4%, were categorized as failed. In a previous study, we reported that over 80% of collab threads fail [1]. Our new result is consistent with this earlier work, but suggests that collab success may be even more challenging than we thought.

The content analysis showed that five items—the nonlinear arrangement, frame rate spec, dimensions spec, background color spec, and the leader’s email address—were most common, each present in over 30% of first posts in every category. Except for the nonlinear arrangement, all of these items were almost twice as likely to be found in successful first posts as in failed first posts. These five items were also more commonly found in successful first posts than any of the others, with the frame rate spec appearing in 90% of successful first posts, the dimensions spec appearing in 81%, the nonlinear arrangement appearing in 79%, the background color spec appearing in 66%, and the leader’s email address appearing in 51%.

Most items appeared more often in successful collab thread first posts than failed ones. There were only three exceptions to this trend. These items were the nonlinear arrangement, which appeared in 83% of failed first posts and 79% of successful ones, the fans/characters theme, which appeared in 16% of failed first posts and 13% of successful ones, and the demos/tryouts gatekeeping policy,

which appeared in 7% of failed first posts but only 1% of successful ones.

The results of the exploratory logistic regression revealed that the presence of theme and number of specs in a collab thread were significant predictors of success ($p < 0.01$). The amount of organization in a collab thread, a category representing the number of items in the restrictions, gatekeeping, authorship, contact information, and sponsorship sub-categories, was also a significant predictor of success ($p < 0.01$).

To distinguish whether the amount of text or the types of content in the first post predicted success, we ran a two-tailed independent samples t-test comparing the word count in the high activity collab thread first posts and the outcome of those first posts. The results showed that the posts were not significantly different, $t(289) = 0.707$, $p = n.s$. In other words, there is no significant difference between the word count of first posts and their outcome; first post content predicts success.

DISCUSSION AND CONCLUSION

Our results suggest that it is possible to accurately predict the success potential of an online creative collaboration from the moment it is started. Specifically, we found that collab thread first posts with organization and structure, especially technical constraints or “specs,” are more likely to be successful. Specs such as frame rate, dimensions, and background color were found twice as often in successful collab thread first posts as in failed ones. Additionally, the exploratory logistic regression showed that the presence of a theme, the number of specs, and the amount of organization in a first post are significant predictors of success. In contrast, word count in first posts were not different in successful vs. failed collabs.

These results underscore the importance of leaders providing particular types of structural and organizational information in a first post, rather than simply writing a lengthy first post. However, many collab threads lacked even basic structural elements. Designers may consider scaffolding [3] the process of leading online creative collaboration projects by providing tools to help novices remember key structural and organizational elements. As novices develop more leadership experience, these tools could be hidden or made optional.

REFERENCES

1. Luther, K. and Bruckman, A. Leadership in online creative collaboration. *Proc. CSCW 2008*, ACM (2008), 343-352.
2. Peng, C.J. and So, T.H. Logistic Regression Analysis and Reporting: A Primer. *Understanding Statistics 1*, 1 (2002), 31-70.
3. Soloway, E., Guzdial, M., and Hay, K.E. Learner-centered design: the challenge for HCI in the 21st century. *interactions 1*, 2 (1994), 36-48.