

Online Idea Contests: Identifying Factors for User Retention

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Abstract. Current literature about idea contests has emphasized individuals' motives for joining volunteer idea contests. However, explanation of why people stay or leave in the long run is rare. We identify factors that motivate users to participate repeatedly to sequential online idea contests. The research setting consists of three idea contests carried out by Swarovski, Austria. We accompanied Swarovski during the conceptualization of the idea contests, implementation and post processing activities. We distributed a questionnaire to participants (N= 117) to get insights about their motivation to participate, their experiences in the contest and willingness to participate again. Results not only highlight the importance of pre-contest expectations, but also the importance of the experiences made in previous contests such as the user's perceived fairness.

Keywords: Multiple Idea Contests, User Retention, Motivation, Open Innovation.

1 Introduction

“Given the necessity of generating creative ideas repeatedly, firms have traditionally relied on an internal staff of professional inventors” (Bayus 2010: 1). However, more firms are using the “wisdom of the crowd” to get fresh ideas. Recent examples include: Sony Ericsson Content Award 2008, A1 Innovation Days, Siemens Smart Grid Contest, Lufthansa Air Cargo Innovation Challenge, Swarovski Lifestyle Electronics Design Competition, etc. (cf. Bullinger and Moeslein 2010: 4). As a result firms get access to new ideas within a very short timeframe. Due to the positive results of previous idea contests (Poetz and Schreier 2012) it can be observed that firms (e.g. Siemens, Swarovski, Spar) begin to repeat such contests and consider implementing idea contests as a fixed instrument in their innovation management portfolio. Besides continuous access to innovative ideas repeating idea contests entail further benefits such as building up an innovation community potentially leading to significant cost-saving synergies and expanding the “crowd” which is per se limited to a

number of individuals (Bullinger et al., 2009). However, establishing a self-sustaining community of innovators seems rather challenging. “Participants of an innovation contest are initially unrelated, come (seemingly) out of the void, are temporarily very active and communicative and then stop their activities and disappear again” (Bullinger et al. 2009: 4). In recent years valuable research was done to gain an understanding why users participate for a first time in such idea contests (e.g. see Bretschneider et al. 2012; Franke and Klausberger 2012). However, explanation of why people stay or leave in the long run is rare (Fang and Neufeld 2009). First insights have been gathered by Fueller (2006) but there is still a lack of understanding about why an individual would contribute repeatedly to virtual co-creation projects initiated by a firm leading us to the following research question: What are the factors that lead to repeated participation in sequential online idea contests hosted by the same firm?

2 Theoretical Background

Idea contests are a form of crowdsourcing, where “... a firm (seeker) ... faced with an innovation problem sets up a solution contest involving a number of potential solution providers (solvers) ..., in which a pre-announced reward is paid to the solver with the best solution” (Terwiesch and Xu 2008). It follows the same concept that “large groups of people are smarter than an elite few, no matter how brilliant they may be” (Surowiecki 2005: 1). Compared to traditional online market research, individuals are asked not only about their opinions, wants and needs, but also to come up with their own creative solutions, and thus eliminating the sticky information problem (Lilien et al. 2002). There are several studies that analyzed the motivational factors for one-time participation (e.g. Jeppesen and Frederiksen 2006, Fueller et al. 2008). A shared insight is that self-interest is a main driver of user participation (e.g. Franke and Klausberger 2012; Leimeister 2009). Regarding repeated participation, Fueller (2006) states that “initially, one may engage due to the expected value from one’s own use of the developed solution; in the long run, enjoyment and fun may drive one’s engagement” (Fueller 2010: 103). There are further studies showing that motivations are not stable but rather change over time (Fang and Neufeld, 2009; Shah 2006). For firms which want to retain users over several contests, changes in motivation are relevant to consider. It can be assumed that the majority of the motivational factors explaining one-time-contribution do also play a role for repeated participation. However, motives that attract new users might also be different from those that retain users. To come up with a good, holistic selection of relevant motivational factors, we follow the classification of Fueller (2010) of intrinsic, internalized extrinsic, and extrinsic factors. Two intrinsic motives that have repeatedly shown to influence user participation is the curiosity about such contests (Berlyne 1960; Fueller 2006) and having fun in developing new ideas (Organisciak 2008). Most relevant internalized factors have shown to be the opportunity to develop their skills and to gain new expertise (Amabile 1996; Brabham 2008b), to get recognized by the firm and other via promoting own ideas (Brabham 2010; Leimeister 2009) and the chance to get in contact with interesting people that

have the same interest and are willing to share and discuss ideas (Kozinets 2002a). Additionally altruism has been identified as one important driver of user engagement in innovation contests (Bretschneider et al. 2012). Among the extrinsic motives personal need (Franke and Shah 2003; Bretschneider et al. 2012) and receiving monetary incentives (Lerner and Tirole 2000) seem to be important explanatory factors for user participation. However, it seems likely that users following these motives will not participate again as the probability that the firm realizes the idea or that the participant gets the monetary price is pretty low. This could potentially lead to dissatisfaction and with that refusing a repeated participation. These lead to the following hypotheses:

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- H1a:** Users who are motivated by **curiosity** are more likely to participate again.
H1b: Users who are motivated by **fun** are more likely to participate again.
H2a: Users who are motivated to **develop their skills** are more likely to participate again.
H2b: Users who are motivated to **promote their ideas** are more likely to participate again.
H2c: Users who are motivated by **altruism** are more likely to participate again.
H2d: Users who are motivated to **make friends** are more likely to participate again.
H3a: Users who are motivated by their **personal need** are less likely to participate again.
H3b: Users who are motivated to win the **prize money** are less likely to participate again.
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Following the expectation-confirmation theory it can be assumed that besides user's expectations or self-interest motives, experience with the contest of the particular firm significantly influence whether someone does something again or not (Bhattacharjee 2001). It has been shown that community functionalities such as social interactions can significantly influence the satisfaction of a user (Chen 2007). Individuals not only participate in idea contests because they are interested in the topic, but also to get in contact with like-minded others (Kozinets 2002b). Experiencing the community itself and social interactions within the community can have a lasting effect on the intention to be part of that community again in the future. Franke et. al (2012: 1) noted that besides self-interest also "fairness perceptions with regard to the distribution of outcomes between the firm and contributors (distributive fairness) and the fairness of the procedures leading to this distribution (procedural fairness) (...)" play an important role in defining user participation. It logically follows that the fairness perceptions through the experience of a user during the idea contest influences his or her decision to participate in future contests.

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- H4a:** Users who feel to be **part of the community** are more likely to participate again.
H4b: Users who have **meaningful social interactions** are more likely to participate again.
H5a: Users who perceive the **contest jury and its decisions as fair** are more likely to participate again.
H5b: Users who are **satisfied with the distribution of the benefits** between the company and the participants are more likely to participate again.
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3 Methodology

The hypotheses are tested with data generated by the latest two of the three idea contests that were initiated by the jewelry producer Swarovski to date. The second

contest was about the creation of jewelry designs, while the third contest was about the creation of creative and innovative lifestyle electronics. Empirical data for this study was collected via an online questionnaire that was distributed to participants of the third design contest initiated by the jewelry producer. The item “I intend to actively participate in future contests by the firm” was included to measure the participant’s intention to participate again. Even though the use of an *intention item* has certain limitations, a high correlation between intention and action can be observed in several studies (Chandon et al. 2005). The final sample consisted of 117 observations. 69% of respondents participated for the first time in one of the firm’s contests, 21% participated in one previous contest of the firm and 10% participated in both previous contests. Measurement items for the 12 hypotheses were identified through an extensive literature review (Butler et al. 2002; Constant et al. 1996) and the convergent validity has been assessed following Fornell and Larcker (1981). All three conditions for convergent validity were met. Group differences were identified through T-Tests and one-way factorial ANOVA analyses. To investigate repeated participation a more in-depth regression analysis was conducted. We included gender and professional background as control variables. To validate the quality of our empirical model, we analyzed the goodness-of-fit by using the chi-square normalized divided by degrees of freedom (χ^2/df), which should not exceed 5 (Bentler 1989), and the R^2 . χ^2/df was 2.45 ($\chi^2 = 51.402$; $df = 21$; $p < 0.01$), suggesting adequate model fit. R^2 was very high as well: 65% of the variance in y is explained by the explanatory variables. In addition to contest three data, we used survey data from the firm’s second idea contest, too. This data contained the same motivational constructs as the data from contest three. Thus, by identifying those users who participated in contest two and contest three, we could explore potential differences among users’ motivation over time by applying the Mann-Whitney U-Test and the Kolmogorov-Smirnov-Test.

4 Findings

The descriptive results show that while the means are rather low for the extrinsic motives and the community items (including the item *make friends*), they are overly high for all other factors (> 4 on a Likert scale of 1 to 5, with 5 being the highest). First-time participants initially join the contest out of curiosity (mean = 4.64), for fun (mean = 4.70), to develop skills (mean = 4.52), to promote their ideas (mean = 4.60), or due to altruistic reasons (mean = 4.53). In addition to the descriptive results and T-Tests, we established an empirical model that reflects the theoretical model we developed earlier, with factors that allow for testing all established hypotheses (see Table 1).

As can be seen in Table 1 the main motivational factors influencing the intention of first-time participants to participate again in online idea contests of the same firm are *altruism* and *skill development*. In terms of experiences *distributional* and *procedural fairness* significantly influence the intention to participate again. These findings show that community factors (i.e. *sense of community* and *interaction feedback*) do not play a significant role on the intention to participate again for first-time participants. Additionally data shows that taking part in an idea contest strongly shapes the motives of future participation. Repeaters that are taking part to *promote their ideas* and to *make*

friends have a higher intention to participate again. In contrast those who are taking part to *develop* their *skills* or which are driven by *altruism* are significantly less likely to participate again. Interestingly the data indicates that participants who are driven by *distributive fairness* are also less likely to participate again.

Table 1. Linear regression results¹

| Independent variable | Beta / Sig. | |
|-------------------------------------------------------------------|-------------------|-----|
| Motivation Curiosity | .077 | |
| Motivation Fun (<i>removed due to multicollinearity issues</i>) | | |
| Motivation Skill Development | .200 | ** |
| Motivation Promotion Ideas | -.163 | |
| Motivation Altruism | .246 | *** |
| Motivation Make Friends | -.114 | |
| Motivation Personal Need | -.074 | |
| Motivation Rewards | .006 | |
| Sense of Community | .015 | |
| Interaction Feedback | -.044 | |
| Fairness Procedural | .329 | *** |
| Fairness Distributive | .202 | ** |
| Gender | .184 | * |
| Hobby Designers | -.385 | *** |
| Repeaters | -.025 | |
| Repeaters * Motivation Skill Development | -.415 | *** |
| Repeaters * Motivation Promotion Ideas | .719 | *** |
| Repeaters * Motivation Altruism | -.446 | *** |
| Repeaters * Motivation Make Friends | .614 | *** |
| Repeaters * Fairness Distributive | -.537 | *** |
| N / R ² / Adjusted R ² | 117 / .646 / .577 | |

The data indicates that motives are not static but rather change over time. To get a better idea about changes in an individual's motive structure on an absolute level we compared the motives of participation between users who participated in contest II and contest III (N= 15).

The results show that the intrinsic motivation for *skill development* and *curiosity* significantly decreases over time for the same individuals. The same holds for extrinsic motives (i.e. *rewards*) that decrease in the long run. Only the motivation of enjoying such challenges (*fun*) increases significantly.²

¹ Dependent variable: "I intend to actively participate in future contests" | * p < 0.1; ** p < 0.05; *** p < 0.01 | 'Repeaters' Dummy: 0 = First-time participants, 1 = Second and third-time participants.

² The factor *Promotion Ideas* has not been available in the questionnaire for contest two.

Table 2. Individual’s motivation change over time³

| Factor | Mean change | Mann-Whitney-U-Test | Kolmogorov-Smirnov-Test |
|-------------------|-------------|---------------------|-------------------------|
| Altruism | ↓ | <i>ns</i> | <i>ns</i> |
| Skill Development | ↓ | <i>ns</i> | ** |
| Curiosity | ↓ | *** | ** |
| Fun | ↑ | ** | *** |
| Rewards | ↓ | *** | ** |

those two groups. These results are in line with our empirical regression model as well as the descriptive results. Repeaters seem to be more *altruistic* and more motivated by the *joy of the task* itself. On the other side, repeaters show a lower motivation to *develop* their own *skills* and a lower *identification* with the (brand) *community*.

Thus, not only the comparison of the motivation of repeaters with the motivation of non-repeaters, but also the comparison of repeaters motivation during their first and later participation shows similar changes in motivation over time.

Summing-up, and as confirmed in Table 2 whose data is based on users who participated in contest two and contest three (N= 15), we find no support for H1a as *curiosity* is not significantly influencing the intention to participate again. We find mixed support for H1b, H2a and H2b as *fun* and to *promote ideas* become more important drivers to participate again in the long-run, while *developing* the proper *skills* is initially important but gets significantly less important over time. *Altruism* is an important driver to participate at first but gets less important over time providing mixed support for H2c. To *make friends* does not influence the intention to participate again but becomes more important in the long-run, providing mixed support for H2d. In line with hypothesis H3a those that are motivated to take part because of their *personal need* are less likely to participate again. The same holds for the motive to *win the prize money*, which reduces the intention to participate again in the future, rejecting H3b. Furthermore, feeling part of a community as well as having meaningful interactions does not seem to lead to a higher intention to participate in the long term as shown in other studies. As there might be alternative explanations we would partially reject H4a and H4b. *Procedural fairness* is influencing the intention to participate again for first-time participants confirming H5a. *Distributional fairness* is negatively influencing the intention to participate in the long run, and with that rejecting H5b.

Additionally we looked at participants of contest II who had a high intention to participate in contest III and compared the means of the motivational factors from those that actually took part in the subsequent contest III (N= 15) with those that did not participate (N= 101). Table 3 shows four significant group differences among

Table 3. Binary regression results⁴

| Factor | Beta |
|--------------------|-----------|
| Altruism | 1.088 ** |
| Fun | 2.196 ** |
| Skill Development | -2.292 ** |
| Sense of Community | -0.785 * |

³ ↓ Factor less important in contest three than in contest two | * p < 0.1; ** p < 0.05; *** p < 0.01 | ns = not significant.

⁴ Nagelkerkes R-Q: 0.319 | Omnibus significance: 0.213/0.16/0.16 | * p < 0.1; ** p < 0.05; *** p < 0.01.

5 Discussion

There are a few motivational factors clearly dominating the intention to participate in future idea contests. In contrast to their important role for one-time contribution, extrinsic motives such as *personal need* and *rewards* are not influencing the decision to participate again or not. Even more, we have indications that participants who are highly motivated by extrinsic motives are more likely to not participate again. In contrast internalized extrinsic motives seem to be the most important drivers for the intention to repeatedly participation in idea contests. *Altruism* and *skill development* are both reasons to join the contest for the first time. When it comes to truly intrinsic motives (fun, curiosity) we observe mixed importance for future participation. *Curiosity* is a factor that rather attracts participants for a first-time and less for subsequent participation in idea contests. In contrast *fun* is high among all first-time participants and third-time participants still show a pretty high level of *fun*. In fact, the group comparison shows that those who participated more than once (i.e. contest II and III) are significantly higher motivated by fun than those that participated only in one contest. For those that perceive the participation in idea-contests fun in a first place perceive the participation also highly enjoyable in a second or third time. Thus, the joy of solving the design tasks seems to be an important explanatory variable.

While the *altruistic* motivation and the motivation to *develop your own skills* become less of a reason to participate again, the motives to *make friends* and to *promote ideas* become important drivers. Though the descriptive results indicate that users who join such contests repeatedly are still altruistically motivated, this motive loses its significant importance for future participations compared to other factors. This is similar to the motive to *develop own skills* that seems to get saturated rather quickly. This could be related to the limits of learning possibilities within idea contests. The more extrinsically-oriented motive, which is to *promote your own ideas*, gains importance over time. Users who want to be recognized by the firm for their ideas and creative work are those who are most likely to participate in future contests. Finally, while in the beginning the task provides enough personal satisfaction and is the reason for participating, the idea to *connect with like-minded people* and *make friends* with them becomes more important at a later stage, too.

In addition to the user's expectations or motivational factors, we observe that experience factors from previous contest(s) strongly influence the intention to participate in idea contests by the same firm repeatedly. The results show that while motivational factors change over time experience factors remain rather stable. In this contest, participants perceived the contest as fair and were overly satisfied with the outcomes. Both dimensions of fairness (i.e. procedural fairness and the distributive fairness), were highly significant for further participation in our regression model. However, it seems that the importance of the distributive fairness seems to decrease over time with further participations. Furthermore, community factors had no influence on the future participation intention. The relatively low means of the *sense of community* item and *interaction feedback* item indicate that participants were either not very satisfied with the community or not central for them.

5.1 Theoretical and Managerial Implications

The findings of this paper provide new and relevant insights to the research area about idea contests and extend the initial work of Fueller (2006). Several factors could be observed that drive the user's intention to participate repeatedly in sequential online idea contests hosted by the same firm. It seems that especially those who highly enjoy the creative task itself, who have a high brand passion, and who have a high motivation to get in contact with the firm by promoting their own ideas are not losing interest to take part in future contests. However, we raised attention of significant motivation differences among participants with different number of participations in previous contests. First-time participants might also be driven by altruistic reasons or the chance to further develop their skills to go for a second participation. Yet those motives seem to become less important with further participations. Our findings shed more light on the phenomenon of repeated participation in idea contests and draw interesting implications for firms who conduct idea contests. To ensure idea contests can be implemented as fixed tool for their innovation management, firms need to know how they can retain users over several contests as the crowd is a scarce resource and costly to acquire. It seems to be crucial to appreciate good ideas and stay in contact with the submitter after the contest if such users shall be retained successfully. Those users need to have the feeling that their input is taken seriously and that the firm appreciates their effort. They have most likely a high passion for the brand and are invigorating the community. In addition, users who joined for a second or third time highly enjoy the task itself. A firm needs to think about how it can make sure that this *fun level* is maximized during the contest. This includes aspects like: making the task challenging but fun, giving the user as much autonomy as possible, ensuring interesting discussions in the community, creating a friendly and funny atmosphere during the contest, supporting users whenever necessary, and implement activities (e.g. videos, social media actions) that make the contest *cool and fun*. All these mentioned aspects can help to achieve a critical mass for an idea contest more easily and thus reduce the risk of exhausting the available crowd, which would lead to a failure of future contests. In addition, firms need to understand that a fair contest setting regarding the distribution of the benefits and the selection of the winners are crucial for retaining users in the future. Otherwise users are likely to leave the community and do negative word-of-mouth (Hauer 2009). While for online communities and open source projects the identification with the community is crucial for a long-term user engagement, it seems to be less crucial for idea contests with the short-term existence of a more competitive community.

5.2 Limitations and Further Research

The underlying study contains a number of limitations and potential for further research. Firstly, the number of observations ($N = 117$) is rather small and with a high number of parameters vs. observations overfitting issues can occur. Even though the predictive performance for some of the factors is limited, we still believe that the main results we observed are reliable and not due to statistical errors. Multiple data

points such as descriptive results and the analyses with contest two data helped to validate our main results. A second limitation is that the results are based on one case study only, thus they are industry-specific and might not be applicable for other contests. Thirdly, there might be other factors influencing repeated participation that have not been taken into consideration by our theoretical model e.g. interest in the task, brand passion, autonomy. It would be interesting to observe how motivational factors can also affect the perceived level of fairness or community factors. Additionally, instead of using the *intention level*, actual participation should be tested in a long-term study over several contests and studies in different industries and with different communities should be conducted to generate more insights into this fascinating phenomenon of repeated participations in online idea contests.

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