How to Manage Crowdfunded Projects:
Empirical Evidence from a Comparative Study of Game Development Projects

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Abstract

This study expands current understanding of the crowdfunding phenomenon by explaining how crowdfunding initiatives that have succeeded in hitting their financial target— referred to as crowdfunded projects— can continue to succeed by delivering their promise within the schedule, budget, and quality guidelines. The study develops propositions that elaborate the importance of undertaking four broad strategies—namely, project management, communication, community, and open innovation— during crowdfunded projects. It then reports the results of an in-depth, comparative qualitative study of two exemplary game development projects to evaluate the applicability of the propositions and create a better understanding of their underlying concepts. The findings confirm the propositions by demonstrating how the two projects differed greatly in the use of strategies. Furthermore, the exploratory nature of the comparisons enriches the propositions by revealing new concepts that need to be considered in the successful implementation of the identified strategies.

1. Introduction

In 1885, Joseph Pulitzer launched a crowdfunding campaign for the plinth that the Statue of Liberty still stands on today, by asking the readers of his newspaper The New York World for donations. Way back in 1713, a young Alexander Pope set out to translate 15,693 lines of Homer's Greek poetry into English. In exchange for being listed in the early edition of the book and the delight of helping to give birth to new creative work, 750 subscribers pledged two gold guineas to support Pope's effort.

Crowdfunding is not a new phenomenon. Throughout history, it has been trumpeted as a financial source of capital for those with influential ideas but limited resources to implement them [1-3]. However, it is relatively recently that advances in information and communication technologies (ICT) have allowed crowdfunding to enter, and even shape,

the zeitgeist of modern entrepreneurship. Crowdfunding in its current form refers to open calls through Internet-based platforms such as Kickstarter and Indiegogo, asking a large number of dispersed individuals to contribute small amounts of money towards financing a specific project [4-7]. Existing research on crowdfunding provides a useful foundation to appreciate the complexities of building campaigns that can succeed in attracting financial support [6, 8-12]. Current discussions usually describe their understanding of the success of a crowdfunding initiative with measures, such as the rate of pledging to the funding target and the number of backers supporting the campaign [13-15]. The dominant research focus on how to succeed in raising funds is not surprising, given that acquiring financial resource is an impactful and well-documented event. Nonetheless, financing makes up just one facet of the longitudinal process that is expected to produce and deliver the promise of crowdfunding—usually a product or service [16, 17]. A successful crowdfunding campaign that has received sufficient financial support can still fail or produce poor outcomes by not being able to deliver its intended promise to backers within the schedule, budget, and quality guidelines. Alas, these outcomes are not uncommon. Research and industry reports agree that the life of crowdfunded projects is unpredictable, with at least half of new ventures failing within five years [18]. It is essential for the people who initiate a crowdfunding initiative— usually referred to as *project owners*—to think carefully about distinct challenges that their projects might face and consider strategic actions that can be implemented to help overcome or prevent those challenges.

This study contributes to a better understanding of these dynamics by focusing on crowdfunding initiatives that have succeeded in hitting their financial target during the fundraising stage, asking: **How can they continue to succeed during the development stage, by delivering their promise within the schedule, budget, and quality**

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guidelines? The study draws upon extant research on organizational change [19] and crowdfunding to develop propositions that explain the importance of making certain strategic choices during crowdfunded projects. It then evaluates the applicability of the propositions by conducting a qualitative study that compares the exemplary cases of two game development projects—*Shovel Knight* and *Clang*—that had achieved incredible success in collecting financial support but had unfolded toward very different development fates.

2. Theoretical Background

This section uses the socio-technical model of Leavitt [19] to create a narrative story that explains, and then ties together, strategic choices that can be considered during a crowdfunded project. Leavitt's model has a long history of being used as a comprehensive and anchored in theory foundation for conceptualizing the critical aspects of product development [20]. Its application is consistent with the context of crowdfunded projects, aiming to advance a product or service. Leavitt's model views product development as a multivariate system that involves structure, technology, people, and tasks [19, 21]. *Structure* covers organizational and institutional setting issues of the project. *Technology* includes the application of tools, methods, and platforms used in the project. *People* refers to key stakeholders that are affected by the outcomes of the project, and hence they are expected to have a voice in the development process. *Task* represents the activities that need to be pursued to advance the project and benefit the development performance.

2.1. Structure

A crowdfunding initiative, which has been financially supported by the crowd, has found a chance to begin the development process towards implementing its promise. Managing crowdfunded projects, however, is challenging. Such challenge is partly due to common difficulties that crowdfunded projects share with other types of projects, i.e., project management risks, knowledge management risks [22, 23]. Additionally, crowdfunded projects have an extremely fluid and flexible nature that encourages overpromising and under-delivering, bringing uncertainty and confusion into their organizational structure [24]. For example, numerous high-profile controversies in the crowdfunding industry (e.g., Godus) have emerged as a result of reaching funding goals many times over, generating new expectations from backers to produce and distribute significantly more rewards (e.g., new layers functionalities in the final product). While it makes sense to use the extra funding to fulfill the new requirements, the relationship between *available funding* and *capabilities of a team of entrepreneurs* is not necessarily a linear one. Often, it can be the case that managing the increased complexity of a large project, regardless of the availability of funding, can be simply beyond the expectation, experience, and expertise of a small team of entrepreneurs. Similarly, crowdfunded projects are usually open to embrace inevitable changes in project direction (e.g., being acquired by established companies). However, conflict might arise if the emerging path of the project is very different from its original plans [25]. This can be particularly challenging due to the complexity of managing the expectations of a large and dispersed group of stakeholders— here, backers. Collectively, such situations can decrease backers' satisfaction with their initial investment as well as their motivation in making subsequent contributions.

Hence, crowdfunded projects need to place a strong emphasis on project management strategies that can strike a careful balance between the stability of plan-driven methods and the flexibility of agile development methods. Scrum, for example, applies iterative delivery and its principles to achieve such balance [23, 26]. It opens rooms for flexibility by allowing change requests to be created and approved at any time during the project. It also maintains stability by creating a prioritized development backlog and by making sure that all requirements related to an ongoing sprint are frozen during that sprint. Such process, which allows project owners to be open to change but also careful to avoid unnecessary complexity, increases the chance of implementing a project that meets not only the budget specifications and delivery timelines but also the quality requirements. Subsequently, a better development performance increases backers' satisfaction with their investment and motives them to contribute to the project in the long run— both financially and intellectually. We thus propose:

Proposition 1. *Hybrid project management strategies, which blend plan-driven and agile methods, increase the chance of meeting budget specifications, delivery timelines, and quality guidelines.*

Proposition 2. *Hybrid project management strategies, which blend plan-driven and agile methods, increase backers' satisfaction with their investment and the chance of making further contributions.*

2.2. Technology

A crowdfunded project that has not performed well in meeting the original plans can lead to collective losses of identity and self-esteem among backers [24]. The project, however, can still be considered successful if backers feel those changes in plans were inevitable and even necessary [27, 28]. Similarly, a project that has faced significant delay in delivery might still be considered successful if the final product or service finds its way to be adopted widely by the mass market [29]. Such examples suggest that crowdfunded projects are very likely to face problems in executing their plans. However, they can focus on using their platforms to engage in transparent communication with backers and the wider public to highlight and justify their development approaches and contributions. Such communication involves sharing frequent updates, but also informing backers about the underlying needs for change and explaining the importance of the ongoing development outcomes. It is also necessary to remain as responsive as possible [24] to foster trustworthy relationships with backers, reduce their anxiety in making sense of the value of their investment, and facilitate a hedonic experience for those that are most likely to be also the future users of the final product or service. We thus propose:

Proposition 3. Frequent communication about the status of project and responsiveness to prospective users increase backers' satisfaction with their investment.

2.3. People

During the development stage, project owners are very likely to sense new business opportunities for expanding their work and creating more profitable alternatives. For example, they might receive and respond to acquisition offers made by industry giants. Sometimes, it is necessary to embrace new opportunities not only for the sake of project owners' career and their desire to expand their experience, but also for creating a sustainable future for the product they plan to develop via the crowdfunded project. New opportunities, however, bring the necessity of inevitable changes in the project, i.e., a shift from a non-for-profit to commercial product. If changes are not carefully articulated, they can decrease backers' satisfaction with their investment and their motivation in making subsequent contributions. Hence, project owners should pay extra care to infusing the development stage with shared values to anchor and unite backers to the project. These efforts,

in turn, help maintain a collective and sustainable identity for the project [24]. We thus suggest:

Proposition 4. Reinforcement of shared values with the community of backers increases backers' satisfaction with their investment and the chance of making further contributions.

2.4. Task

The flexible and fluid nature of crowdfunding initiatives, as discussed in the previous sections, can encourage project owners to commit to delivering a complex project that requires considerable knowledge, experience, and expertise—sometimes, far beyond than developers' potential. This dilemma raises the question of how crowdfunded projects can compensate for their limitations in those important areas. One possibility is to outsource some aspects of development activities to the community of backers. This idea is supported by existing insights that suggest defining a co-investment model such as having skin in the project or receiving funding from external sources provide project owners with the flexibility to overcome unexpected challenges [30-32]. Community involvement originates from the fundamental idea of open innovation research that suggests entrepreneurs can benefit from the innovative ideas and contributions of the future users of their offerings [27, 33]. For example, project owners can consult different groups of backers, with different financial contributions, to provide feedback and influence the prioritization of features development. Open innovation is beneficial at various levels. It reinforces engagement with future users, creates a sense of community in the process, and increases project owners' productivity by allowing them to focus on the more critical tasks. For example, some forms of early access to the product before its official release allow project owners to leverage backers as committed functionality testers, who are willing to invest time and energy to examine usability assurance. At this point, it is important to empower backers with tools that help make voluntary contributions (e.g., social media features) and to publicly celebrate their contributions. Finally, open innovation encourages backers to visit project owners' sites regularly. This, in turn, enhances online traffic and creates a community of people who are more likely to continue to make additional contributions along the way. Such involvement may also lead to higher levels of later satisfaction with the product or service. We thus formulate the following proposition:

Proposition 5. Open innovation with prospective users who have provided financial

support during the fundraising stage increases both development performance and backers' satisfaction of their investment.

3. Research Method

The study chooses a positivist case study approach [34, 35] to evaluate the applicability, and enhance understanding, of the propositions (P1-P5). The research design involves polar sampling [34, 36] to confirm or disconfirm emerging conceptual insights. Following Glaser and Strauss' [37] technique of theoretical sampling, the study considers two methodological choices.

The first choice relates to selecting the context of game development as an insightful context for studying crowdfunded projects, having the potential to reveal new findings that are transferable to other contexts [38]. Game development is such a context because games— across all the major crowdfunding platforms— have proved to include extreme cases of popular and innovative, yet challenging to complete, projects [39].

The second choice relates to selecting the cases of game development projects. Two exemplary cases— Shovel Knight and Clang— are selected for their similarities and differences to help replicate or extend the emergent theory. In terms of similarities, the selected games represent exemplary cases of two successful crowdfunding campaigns on Kickstarter. The first case, Shovel Knight, was a game launched by a small group of six software developers (Yacht Club) based in Los Angeles. The developers began by using Kickstarter in March 15, 2013 to raise funds ($50,000) for developing and implementing the game. Within only a month, the crowdfunding campaign was successful in raising almost seven times more funds than initially expected ($330,000). The second case, Clang, was a game proposed by a Seattle-based science fiction author (Neal Stephenson). Stephenson generated the idea of Clang as a sword-fighting motion-sensing game to revolutionize sword fighting video games. He, and his team of developers, turned to Kickstarter in June 9, 2012, making several professional and passionate videos and texts in order to raise funds for developing and implementing the game ($50,000). The highly successful campaign achieved half of the target goal in only 5 days. Within only a month, on July 9, 2012, the entire campaign was successful in raising almost 10 times more funds (500,000). Next, differences were sought in their performance during the development stage, where the projects headed to entirely different directions and outcomes during the development stage. The one-year Shovel Knight

project (April 2013-March 2014) faced a slight delay in delivery, but the team was able to convince backers and eventually release the game on June 28, 2014. Shovel Knight captured the heart of its backers and turned out to be a shining success story in the gaming industry. Developers also went beyond delivering the game by creating complementary platforms and physical rewards such as soundtracks, art books, and DLCs (downloadable contents). Furthermore, the development of Shovel Knight is still gaining attention and developers have continued to make new releases, update their ongoing progress on the initial crowdfunding platform. For example, the latest update on the development of Shovel Knight on Kickstarter reads as in February 2019. The game, which landed on several *Game of the Year* lists, is widely known in the industry as an example of how to successfully both crowdfund and implement a crowdfunding initiative. In contrast, Clang— after publishing a series of updates by October 2013—went into a long one-year silence. On September 18, 2014, Stephenson wrote an update, but only announcing that the funds are not sufficient to advance Clang and that he is not able to attract additional investment to continue the development. While the update suggested that other upcoming projects might compensate backers' losses in Clang, he mentioned that the team has suffered significant financial losses, because of consuming a considerable amount of time and money into the project.

3.1. Data Collection

The entire set of archival data about the development stages of the games were collected from their Kickstarter pages, including: their home page, and the existing tabs on campaign information, update, and comments. The data was collected using a web-crawler tool called Gooseeker. First, data in the campaigns' information section described the idea of the crowdfunding initiatives and developers' plan and vision. The researcher collected (1) *measures* (funding targets, minimum pledges, number of backers, project length), (2) *texts* (project descriptions, plans, risks, and team members), and (3) *visual representations* (videos made by project owners). Second, data in the updates tab mirrored developers' description of their ongoing works and plans. The researcher also collected all the comments on each update (backers' comments/ developers' responses). Third, data in the comment tab reflected on backers' reaction to developers' updates as well as developers' response to backers' reactions. Table 1 presents a summary of the data. The researcher entered all project updates and backers/project

owners' comments and responses into a database in Nvivo indexed by case.

Table 1. Data Collection

#	Shovel Knight	Clang
Timeline	April 14, 2013-June 28, 2014 (14 months)	July 9, 2012-September 18, 2014 (26 months)
Updates	48	20
Comments	3323	1983

3.2. Data Analysis

Analysis within the positivist case study is generally focused toward deductive validation of theory using hypothetico-deductive logic and pattern matching [40]. While the propositions provided the baseline for the coding, the researcher engaged in deeper interpretations to reveal new concepts underlying the strategies [35]. She did not limit the analysis to using certain keywords to check the application of strategies during the development stages. Instead, she carefully read/observed and coded each piece of data to find evidence for the application of strategies. For example, for project management strategies (P1), she coded all the statements that point to how developers tried to meet budget specifications, delivery timelines, and quality guidelines (project management strategies). While several statements referred to 'ongoing releases' (agile method) as a way of advancing the game, others pointed to keywords such as 'stretch goals' and 'product backlog' (plan-driven method) for guiding the development process. Also, in terms of new concepts, some of the statements pointed to practical differences in how stretch goals were defined. Others reflected upon inherent entrepreneurial differences in how project owners perceived themselves and their commitment to completing the games. Similarly, for community strategies (P4), the researcher coded all the statements that point to how developers engaged in creating shared values across the community of backers. Some statements pointed to public calls inviting backers to contribute to the project (coded as community building efforts). Other statements demonstrated backers' comments, requesting developers to release the open source code and allow for community contributions. Such statements, coupled by observing developers silence in response to such requests, were coded as overlooking community building efforts. The results of the coding process for each project formed the basis of creating two tables that summarize the use of different strategies for each game. These tables, in turn, formed the basis of a cross-case analysis, relying on the methods suggested by Miles and Huberman [41] and Eisenhardt [42]. Cross-case comparison was essential to making sense of (1) how the project owners of Shovel Knight and Clang differed in using different strategies, and (2) how those differences might have been responsible for shaping their different development fates. The new understanding, in turn, was essential to evaluating the applicability of the propositions. The findings from the within-case and cross-case analyses led to updating the propositions, as presented in the Discussion section.

4. Results

This section (1) explains how, and also sheds some lights on why, Shovel Knight and Clang differed in the use of project management, communication, community, and open innovation strategies, and (2) elaborate on how differences in the application of strategies led to different outcomes.

4.1. Project Management Strategy

Both Shovel Knight and Clang faced inevitable uncertainty in the project delivery. Both teams felt the tasks were far more substantial than they had initially thought, especially as a result of being overfunded and their obligation to be flexible and attend to additional rewards.

The first difference, however, was in how they embraced hybrid strategies differently to minimize the potential occurrence of project management challenges. First, Shovel Knight team had asked initially for a humble amount of money for game development ($75k). Yet, developers had created a very detailed stretch goals strategy, in case they received more. The stretch goals seemed reasonable and, more importantly, consistent with their initial plan of development. For example, they included complimentary items such as developing music players, developing plus game, and developing Mac/Linux version. Hence, the stretch goals could form a guiding plan for their development than creating unexpected and unnecessary complexity. In other words, Shovel Knight team was very well aware of what they needed to do to make the project off the ground with the money from fundraising at the beginning of the project.

In contrast, Clang team had defined 'promising' rewards that were focused on appealing to backers in the physical world, but not quite consistent with the development plan of the game, e.g., studio tour and

lunch with the team with pledge amount of 10,000$. In the final days of the project, backers attributed this lack of development guidance to Clang's failing performance. On October 20, 2013, for example, Baja commented on one of the latest updates of Clang:

> *"I believe that an outline of what is necessary for the game to be made is necessary, and stop hedging on hangups. Stick to the plan for the game. Create benchmarks, and stick to them. Set an expectation for response time, enemies, music tracks, and level of art within budget. Decide, commit, and then succeed. On the hardware side, don't shoot for perfection. Timetables are more important than perfection. Everything is open to infinite improvement always. Create the benchmarks early, and accomplish them."*

The second difference was in how the two games differed in using project management strategies to address the similar challenges they both faced. Specifically, both Shovel Knight and Clang had a team of 5 to 6 team members. Upon being funded, the teams both realized that their game has turned out to be more complex than they initially thought. For example, Shovel Knight developers wrote:

> *"We planned a game that was going to take five people more than a full work week (six if you count Jake) for two years ... That kind of game simply is not possible on 328k."*

The second key difference across the two games was the spirit of entrepreneurship in their project management style. Most notably, developers of Shovel Knight considered themselves as entrepreneurs who have previously developed only one game. This light spirit of entrepreneurship encouraged Shovel Knight developers to stretch their potential in overcoming project management challenges. It helped them to be happy to do what they call "*broke ourselves.*" For example, the team's key composer offered to take remuneration once the game was out to help with cutting the costs. The entire team also decided to postpone half of a year of the team's development time to the post-release stage. They wrote in a blogpost:

> *"We ended up operating for five months without money or payments to the team here ... It was a difficult period, where some of us were awkwardly standing in front of cashiers having our credit cards declined, drawing from any possible savings, and borrowing money from our friends and family. But we made it to the other side!"*

These tendencies, however, were not the case for Clang. The principal creator of Clang was a science fiction author, Neal Stephenson, who had co-founded a publishing company, Subutai Corporation, whose mission is to create games, graphic novels, and filmed entertainment based on Stephenson's science fiction. Stephenson was bold in signaling to backers that Subutai Corporation is not a start up rather an established company. Hence, as an established company, he needs to provide reasonable salaries for the team members. Such style explains why Clang team was not ready to do what Shovel Knight was willing to embrace.

> *"[Subutai Corporation] is not a case of creating a startup company from scratch as part of a Kickstarter. This is, rather, a way for a pre-established, albeit small, company to support a project it couldn't back out of its own resources. Our payroll processing company required a certain minimal "keep alive" payment to keep me on the books. This payment, a two-digit salary paid every two weeks, was split fifty-fifty between the CLANG and non-CLANG sides of the company's budget. Of course, salaried members of the CLANG team had to participate in fundraising activities too, but we felt we were striking an appropriate balance."*

4.2. Communication Strategy

Shovel Knight team shared various updates regarding their ongoing progress and remained highly responsive to backers' questions and concerns. They never stopped updating backers and ongoing interactions with them. Out of 69 updates, 50 updates were released after their successful fundraising campaign. They also responded in a reasonable time frame to backers' comments and questions throughout the entire period of the project. Frequent updates signaled developers' transparency and reassured to backers that the team is using the money appropriately to achieve the promises. Several backers commented on their appreciation of developers' hard work and work ethics. Even when the project faced delay, developers continued to explain the reason. Some backers helped spread the message of developers by explaining the importance of some delay in eventually making a better product:

> *"They are taking time to make sure games they sell aren't broken or affect consumers"*

This was not, however, the case in Clang. Out of 43 updates, 22 were released before their successful fundraising campaign. In 2013, they stopped releasing updates for more than five months. After publishing only a series of few updates, the team went into a long one-year silence and left backers

wondering about the status of the project. This silence was followed by an update, announcing the failure of the project. Toward the end of the project, Clang team acknowledged that their communication approach with backers was not effective with statements such as "*we simply can't share once and then bury ourselves in work again.*"

On top of these differences, the data draws attention to two additional differences in communication strategies. First, Shovel Knight team was very precise in describing the development plan to manage backers' expectation. A backer noted:

"Yacht Club Games was also very clear about their wording, ensuring that while they talked up the game, there was no misunderstanding what people should expect from the final product. Backers got what they were promised, everything was on time, and everyone was updated often enough to keep potential concerns at bay."

In contrast, Clang team did not remain committed to their initial promise, and they even provided misleading information throughout the development stage. For example, they released an update on February 22, 2013, signaling the development of a demo as the end result of the project. This update led to an immediate and strong reaction by backers. The following quote demonstrates a comment posted on the same day by a backer, who claimed to be developer himself and familiar with the norms of game development.

"I think we all knew we were contributing to a game as much as a prototype for a larger game, but to call it a demo at this stage is a bit misleading I think. When the game is finished, I expect there to be some kind of functionality for player vs dummies/wood, player vs AI or player vs player."

Clang team responded by changing its statement and confirming that all backers will receive the full game. By April 2013, however, they posted additional updates that reinforced the idea of only developing a demo at the end of the development stage. On April 12, 2013, they responded to a backer who was disappointed of how the recent updates are adjusting expectations downward from the original planned scope.

"Todd, sorry, but the plan for Kickstarter was never a full game, though many read it that way, which is why we are attempting to adjust expectations."

Second, unlike Shovel Knight's clear, attentive and friendly tone of response that sympathized with users at the time of crisis (e.g., project delay), Clang team framed its updates and responses to backers in ways that disturbed people, and eventually led to an apology from Stephenson and developers. For example, Stephenson wrote an update on September 19, 2013, suggesting that half a million collected from the campaign was only enough for creating a prototype to be used to attract future investments. Similarly, he referred to the project as a "huge waste" of his time. Backers responded with comments that express their disappointment with the tone of the communication.

"I am disappointed - not only in the apparent failing of this Kickstarter, but with the tone of the latest update and its terrible delivery to its backers." "But the wording of this latest update leaves a REALLY sour aftertaste."

Stephenson responded by apologizing for poor communication. However, his response exacerbated the disappointment as well. For example, he suggested that it was developers who got him involved in the fundraising process as a way to move their idea of the game forward. A backer called Lafazer noted on September 21, 2013:

"This latest update has none of that and instead is full of whining and trying really hard to shift blame on anyone except Subutai. All you had to say was "We were in over our head", "We miscalculated/underestimated the cost/time", etc and I would have understood and had no problem with that."

4.3. Community Strategy

The idea of Shovel Knight revolved around creating a platform-based game that sustains itself over time. Developers undertook innovative community building activities to reiterate how their vision aligns with the vision of backers. For example, they invited backers to contribute to the game by creating digital avatars. Subsequently, they established digital galleries and encouraged backers to vote. In contrast, Clang team did little to reinforce shared values, even at the time of facing a crisis. This was a lost opportunity because it could have helped make a positive impression of backers. Furthermore, developers dismissed valuable community building opportunities that experienced backers— who were interested in the future of Clang— suggested. For example, some experienced backers responded to developers' frustration by asking for at least minimal features. Other backers understood the failing signal of the game but encouraged developers to share the code so that people can stay in touch and collectively build on it in the future. In response to all of such suggestions, Clang developers remained silent,

missing opportunities to leverage their incredible community to build on Clang. As an example, a backer wrote on September 19, 2014:

> *'If you're not going to release it soon, can we get at least some more gameplay videos?', 'I understand the delay of the game for testing but if it has been submitted then the soundtrack would be done, right?', "I'm going to echo people here and call for open sourcing the code and creative commons licensing the art."*

4.4. Open Innovation Strategy

The data suggests a clear difference between Shovel Knight and Clang in their use of open innovation strategy. Right after being funded, Shovel Knight team began to encourage backers to participate in the project by, for example, providing burning suggestions, voting on emerging game characters, and sharing their own representations of the game and the characters (e.g., 3D, printed). On October 1, 2013, developers updated their platform:

> *"Check your emails, backers… you should have received a poll to choose your favorite playable bosses. There are also some survey questions on there that we thought you might have fun answering too!"*

Once again, Clang team did limited work to practice collaboration with backers. Most notably, developers did not invite backers to contribute to the project in any major form, as it was the case for Shovel Knight. Indeed, they could benefit from an open innovation strategy that involved experienced backers in development. Instead, developers were direct in highlighting that backers cannot help except by providing more financial investment and by remaining patient until developers find a solution for the problem. This was a very different style of involving the community to contribute to the project. On September 19, 2013, Clang developers wrote:

> *"What can people do to help? Probably not that much, unless they happen to be qualified investors or superstar game programmers looking for an adventure. Be patient. We always knew that this was going to take a while and that we'd hit some bumps along the way."*

5. Discussion

Despite the presence of numerous inroads by researchers into explaining how crowdfunding campaigns may succeed in attracting funds [43, 44], important issues that correspond to the development stage of crowdfunded projects remain largely unexplored [16]. This lack of attention is disappointing because of several examples of crowdfunding campaigns that, despite strong social and capital support, have not managed to establish themselves as successful initiatives [24].

Motivated by this gap, the present study is undertaken with appreciating the need to shift the dominant focus of the crowdfunding literature from a variance-based approach that is concerned with understanding the antecedents of successful fundraising to illuminating the complexities that underlie the execution of crowdfunded projects. Using Leavitt's [19] socio-technical model, the study discusses some of the distinct features and complexities of crowdfunded projects— compared to general projects [22, 23]. This discussion is followed by formulating broad propositions to draw attention to the role of four strategies—namely, project management, communication, community, and open innovation— in managing crowdfunded projects. The article reports the results of an in-depth, exploratory study of two contrasting crowdfunded projects. The findings demonstrate distinct differences in the use of the identified strategies, confirming the applicability of the propositions. Furthermore, in-depth investigation into the manifestation of the strategies helped reveals new concepts that should be considered for the successful implementation of strategies. Taken together, Table 2 summarizes the final propositions that can be used in future research. The table highlights the revised concepts (P1-P3). It is useful to consider that project owners can prepare for the execution of these strategies as early as running the fundraising campaign. For example, they can define detailed stretch goals, create a strong sense of entrepreneurship among team members, and consider open innovation plans to identify whether and how they would like to collaborate with backers during the development stage.

Table 2. Theoretical Propositions

Revised Propositions	
Project Management	**P1.** Project management strategies that (1.1) blend plan-driven and agile methods, (1.2) **include a detailed list of stretch goals that are reasonable and consistent with the plan of development, and (1.3) embrace the spirit of entrepreneurship** increase the chance of meeting budget specifications, delivery timelines, and quality guidelines.
	P2. Project management strategies, as described above, increase backers' satisfaction with their investment and the chance of making further contributions.

Communication	**P3.** Communication strategies that (3.1) involve frequent updates about project status, (3.2) emphasize responsiveness to prospective users, **(3.3) create consistency in signaling plans for the project, and (3.4) practice optimism and respect to backers** increase backers' satisfaction with their investment.
Community	**P 4.** Reinforcement of shared values with the community of backers increases backers' satisfaction with their investment and the chance of making further contributions.
Open Innovation	**P5.** Open innovation with prospective users who have provided financial support during the fundraising stage increases both development performance and backers' satisfaction of their investment.

It is also critical to exercise caution in the application of strategies, as they might lead to unintended and unpredicted consequences. For example, close collaboration with the crowd is expected to benefit project implementation processes. However, openness to different perspectives and requirements has the potential to increase the complexity of the project [45], create conflict and loss of interest among stakeholders, and distract team members from their key responsibility— that is, development.

6. Future Research

The theoretical implications are developed through a two-step process of proposition development and empirical evaluation using the case of two contrasting game development projects. Future studies are welcomed to use the propositions and evaluate their applicability in larger datasets. Qualitative investigations are particularly encouraged to reveal additional dimensions that underlie each of the strategies. For example, researchers may observe new patterns of community building and open innovation and reflect upon their observations in the propositions (P4-P5). Finally, this study evaluated the propositions using the cases of two game development projects. It would be very interesting to expand our understanding of the propositions by delving into new categories of crowdfunded projects such as hardware development.

7. Acknowledgment

8. References

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