Reward-based crowdfunding campaigns: informational value and access to venture capital

Crowdfunding is a novel method for raising capital to finance new projects, allowing founders of entrepreneurial, cultural, or social projects to solicit funding from many individuals, i.e., the crowd (Mollick 2014). In reward-based crowdfunding, in exchange for funding, the entrepreneur promises the funder a reward, which often takes the form of the completed product if it is successfully produced. Crowdfunding has rapidly gained in popularity. Kickstarter, a leading platform for reward-based crowdfunding worldwide, has launched more than 307,000 campaigns, with 36% successfully funded by more than 11 million individuals.

In recent years, there has been a trend of using reward-based crowdfunding for developing consumer technology products. On Kickstarter, games, technology and product design are the top three categories in terms of total dollars raised. These projects typically require large amount of capital to support development and large-scale manufacturing and/or commercialization. Given that the amount of capital raised in a typical reward-based crowdfunding campaign is below $1 million, projects in these categories necessitates subsequent rounds of funding from professional investors, e.g., Venture Capitalists (VCs) (Segarra, 2013). However, a successful campaign does not guarantee the support of VCs. According to CB Insights, only 9.5% of crowdfunded hardware campaigns receiving at least $100,000 campaign funds have secured subsequent VC funding. Thus, apart from the inherent uncertainty in new product development, the prospect of lack of VC funding in spite of a successful campaign makes technology related projects highly risky.

Consumers who pledge in reward-based crowdfunding campaigns, whom we refer to as backers, are typically interested in gaining early access to new products. Because backers put down money for a product that has yet to be produced, the number of backers and the overall capital raised may serve as an early indication of the enthusiasm for the product. On the other hand, running a reward-based crowdfunding campaign carries some risk to the entrepreneur, because VCs may interpret a failed campaign as a grim signal of the potential success of the product and the managerial capabilities of the entrepreneur. In fact, failing in crowdfunding has been referred to as a “death sentence,”
upon which the entrepreneur loses access to VC funding (Strohmeyer 2013). This provides the entrepreneur an incentive to set the campaign goal at a low level, because a campaign is deemed successful only when the amount raised in the campaign exceeds this goal. However, choosing a low goal increases the likelihood that the campaign is successful but the project is not subsequently funded by the VC, because VCs run their own market research before making funding decisions. Thus, a lower goal increases the risk backers face of losing their pledge without receiving any benefit in return, which may discourage them from pledging. This dilemma showcases the interesting research questions that can arise in an environment where crowdfunding campaigns serve as a source of information and where VC funding is essential for commercializing a new product. Specifically, how should the entrepreneur choose the campaign goal and the pledge level? Does the entrepreneur always prefer to run a crowdfunding campaign prior to approaching VC for funding? What is the VC's preference regarding the entrepreneur’s choice of running a campaign?

To address these questions we develop a three-stage game. In the first stage, the entrepreneur sets the goal and the pledge level. These two instruments determine the target number, i.e., the minimum number of backers required for a successful campaign. Once the entrepreneur runs the campaign, the number of backers and the total pledges realize. Following the rule of Kickstarter, if total pledges fall short of the declared goal, the campaign is considered a failure and the entrepreneur does not receive any of the backers' funds. As discussed above, the failed campaign implies that the VC will not fund the project, thus terminating it. If total pledges exceed the goal, the campaign is successful and the entrepreneur receives the campaign funds. Then second stage of the game materializes, in which case the entrepreneur approaches the VC for funding. The VC observes the outcome of the campaign and conducts an independent market research.1 If he decides in favor of funding, the game proceeds to the third stage when both parties negotiate on how to split the future revenue if the product is successfully commercialized. We use the Generalized Nash Bargaining Solution (GNBS) to predict the negotiation outcome.

---

1Given that most VCs have access to infrastructure in terms of personnel, technology, and expertise, it is a regular practice for them to conduct independent research to assess the profitability of the project, even after successful crowdfunding. When commenting on how a VC decides to fund startups, Dan Borok, a partner of Millennium Technology Value Partners, stated “Research, research, research. We conduct many months of primary research to identify where value will be created and which companies are best positioned to benefit” (Cohen 2014).
Our study illustrates that both the campaign informativeness and considerations related to gaining access to VC funding play important roles in setting campaign instruments. When the campaign is not informative, the target number and the goal should be set very low to ensure campaign success. The pledge level is the lowest in this case. When the campaign becomes more informative, the entrepreneur chooses to raise the target number and the goal to support higher pledge levels. When the campaign is highly informativeness, the VC's decision relies mostly on the campaign outcome, so backers are less concerned about losing their pledges and the entrepreneur might lower the target number and the goal in order to improve the odds of campaign success.

We find that crowdfunding offers the entrepreneur three potential benefits to offset against the risk of campaign failure. In addition to serving as a source of information, crowdfunding can be used to practice price discrimination between backers and consumers. Besides, the entrepreneur improves her outside option in the negotiation because she can keep the entire contributions of backers, in case the negotiation fails. In contrast, she receives only portion of the expected profits from selling the product to backers in the future market under no crowdfunding. We show that for relatively small projects, running a campaign before approaching the VC is definitely the right choice for the entrepreneur. In contrast, for projects that require large development costs, circumstances may arise under which the entrepreneur prefers approaching the VC directly without running a campaign. Finally, we show that the VC is less likely to prefer crowdfunding than the entrepreneur.

References: