Understanding the Role of Community in Crowdfunding Work

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ABSTRACT

Crowdfunding provides a new opportunity for entrepreneurs to launch ventures without having to rely on traditional funding mechanisms, such as banks and angel investing. Despite its rapid growth, we understand little about how crowdfunding users build ad hoc online communities to undertake this new way of performing entrepreneurial work. To better understand this phenomenon, we performed a qualitative study of 47 entrepreneurs who use crowdfunding platforms to raise funds for their projects. We identify community efforts to support crowdfunding work, such as providing mentorship to novices, giving feedback on campaign presentation, and building a repository of example projects to serve as models. We also identify where community efforts and technologies succeed and fail at supporting the work in order to inform the design of crowdfunding support tools and systems.

Author Keywords

Crowdfunding; community; support tools; entrepreneurship; crowd work; distributed work.

ACM Classification Keywords

H.5.3 [Group and Organization Interfaces]: Design

General Terms

Design

INTRODUCTION

Entrepreneurship is often collaborative work—sharing information, resources, and connections in order to exploit new opportunities [43]. Such collaborations have accelerated over the past few decades as the Internet has created new opportunities for exchange, especially among geographically distributed collaborators.

Crowdfunding has emerged as the most recent Internet based technology to support community in entrepreneurship. Crowdfunding–the online request for resources from a distributed audience often in exchange for a reward [16]—
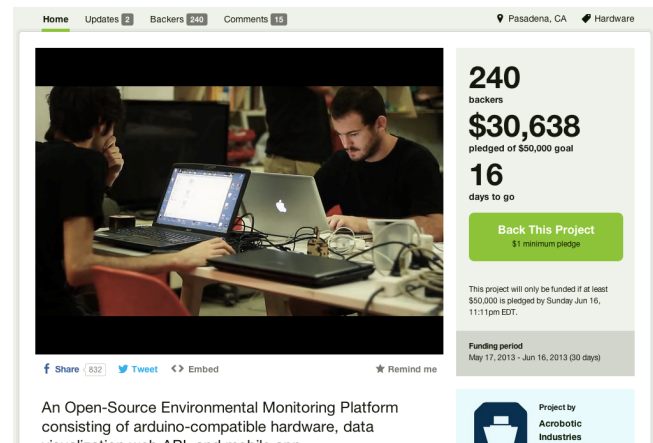

Figure 1: A campaign page on the crowdfunding platform, Kickstarter.

provides a new way for entrepreneurs to solicit financial support from a distributed network that can range in size from dozens to thousands of supporters.

Crowdfunding platforms, such as Kickstarter, invite entrepreneurs to bring "projects big and small to life" by launching a fundraising campaign on their platform [24]. They herald successful examples on their websites, such as the team that raised more than $10,000,000 in a month from 60,000 supporters to manufacture and distribute a video game console [53] and another team that raised over $30,000 from 2,000 supporters to design and produce an eco-friendly pencil [54]. Entrepreneurs, particularly novices with limited networks and proven track records, have accepted the invitation, launching more than 1 million projects in 2011 [13].

Despite the popularity of crowdfunding, our empirical understanding of the cooperative work practices involved in this system is limited. As researchers of computer supported cooperative work (CSCW), we aim in this paper to understand the collaborative efforts and day-to-day activities of crowdfunding users to design and improve crowdfunding support tools [36]. We began our study by asking the question:

- **What is the work of crowdfunding?**

Once we identified a growing theme of community, we added the question:

- **What role does community play in crowdfunding work?**

In order to understand existing technologies that support the work involved [47], we asked:

- **What current technologies support crowdfunding work? And how can they be improved?**

Through a qualitative study of 47 crowdfunding users, we found that they carry out five main types of work—*preparing* the campaign material, *testing* the material, *publicizing* the project, *following through* with project goals, and *reciprocating* resources to the community. During each stage of work, they collaborate with others -- soliciting and giving advice based on their crowdfunding experience, engaging donors in online conversation, and encouraging their social network to spread the word [30]. In addition to using general computer mediated planning and creative tools, such as email, group calendars, and video editing software, users have also started using crowdfunding-specific tools, such as crowdfunding project search websites and supporter management platforms. By understanding how these community efforts and technologies succeed and fail at supporting crowdfunding work, we can identify how to better design tools that support collaboration within the crowdfunding community.

We organized the paper into three sections. The first section introduces crowdfunding work and related research. The second section presents our findings, identifying and describing crowdfunding work, the role of community, and existing technologies used. The third section discusses design implications and the need for tools and systems that facilitate the work practices.

CROWDFUNDING

The first crowdfunding platform was launched in 2001 [52] and has grown to over 452 platforms worldwide [13]. These platforms use existing systems to facilitate the exchange of resources between entrepreneurs and supporters, such as web-based payment systems (e.g. Amazon Payments), messaging systems (e.g. comment threads), social media (e.g. Facebook) and video sharing platforms (e.g. YouTube) to raise awareness about the project. Unlike traditional fundraising methods, such as applying for funds from banks or foundations, crowdfunding allows creators, people who request resources, to appeal for funds directly from supporters, people who give resources, without giving up project ownership [16].

In order to start a crowdfunding campaign on an online platform, creators develop a project profile, which typically includes a title, video, description of planned use of funds, funding goal, campaign duration, and reward descriptions. Creators fill out these recommended and required fields online, and if the project is approved, the crowdfunding platform posts their work in a pre-formatted public page where supporters can choose to donate (see Figure 1).

RELATED WORK

We found that crowdfunding is a type of entrepreneurial work that relies heavily on community building, distributed work, and crowd work. We review relevant literature in these related areas.

Entrepreneurial Work

Entrepreneurial work involves the discovery, evaluation, and exploitation of opportunities to introduce novel products, services, and organizations [42,43,48]. Entrepreneurs assess opportunities through psychological and environmental factors such as one's risk aversion and employment status [43]. When obtaining resources, scholars find that the majority of entrepreneurs use their own savings either out of necessity or to maintain control [3]. Entrepreneurs then exploit opportunities by creating a new firm or market mechanisms [43] through the organization of equipment, employees, production processes, and legal obligations [48].

Although scholars argue that the act of discovering entrepreneurial opportunities is a solitary endeavor, the exploitation of the entrepreneurial opportunity is often collaborative [43]. Entrepreneurs work in teams or form alliances with partnering organizations to benefit from other people's skillsets and to ease the workload [20,27,29,39]. However, entrepreneurs primarily collaborate to maintain a competitive advantage over other entrepreneurs, and therefore rarely share their best practices with the public [43]. This competitive environment makes it difficult for entrepreneurs to engage with communities in an open manner, which is considered a common practice in crowdfunding. Therefore, while crowdfunders also coordinate efforts and exploit opportunities to follow through with their project goals, they are more open about their process and interact more closely with their community to achieve their work.

Online Communities

Online communities are any virtual space where people interact to converse, exchange information or resources, learn, or play [38]. In these spaces, members can contribute to the community growth by performing menial tasks, such as voting, or coordinating content production, such as managing a forum. Kraut identifies five main design challenges to create and maintain online communities, including starting up the community, attracting members, motivating commitment, motivating contributions, and regulating community health and wellness. Similar to crowdfunding project creators, community designers overcome these challenges by deciding what content to post, communicating with members, and offering feedback and rewards to members [38].

To motivate people to join, scholars stress that community leaders should reach out to potential members personally

[32,33], send clear and easy to act on messages, get high status or a critical number of people to join the cause [19,33], give evidence that membership will make a difference on community wellbeing [31], and show that there is an urgency to join [31]. Crowdfunding project creators accomplish these tasks by sending personalized emails, asking friends and news media to publicize their project, show member contribution through a funding bar, and express the need to raise funds by a certain deadline.

Distributed Work and Crowd Work
Distributed and crowd work involve the collaborative efforts of many people to achieve a common goal. Distributed work involves collaborating with a known but physically distributed group of individuals [37], while crowd work involves many distributed anonymous workers performing online tasks [26].

In distributed work, to address the challenges of working distantly and online, workers must establish a mutual understanding of the work and determine the most effective mode of online communication [37]. By interacting regularly and often using communication technologies, workers with an ill defined task can quickly gain a mutual understanding of project goals and responsibilities [37]. Workers take into account the nature of the task to determine the extent and mode of communication, such as whether to work synchronously or asynchronously, through e-mail or group conferencing [37]. The effectiveness of using such technologies depends on the pre-established culture of worker collaboration [37].

Unlike distributed work [37], requestors of crowd work have limited information about workers and assign tasks through a mediated online platform (e.g. Amazon Mechanical Turk). Crowd work can be voluntary or paid [26]. To create well-designed crowd work tasks, requestors must take into account the order of tasks, the pairing of tasks with workers, and ways to enable collaboration [26]. Creating tasks that follow these guidelines supports an environment where crowd workers produce better quality work and have a greater role in the entire process [26].

Crowdfunding creators perform distributed work by managing team efforts, outsourced labor, and supporters whom they personally know. Concurrently, they perform crowd work by motivating people outside their social network to join the cause and spread the word about one's project [30]. However, unlike distributed and crowd work, crowdfunding supporters primarily contribute funds rather than labor.

Research on Crowdfunding
Economics, management, and business scholars initiated research into crowdfunding because of the potential disruption to the economy. Economists strive to understand how crowdfunding can be used as a mechanism to gather data on consumer willingness to pay [6]. Economists find that crowdfunding has market advantages such as increasing consumer awareness and disseminating product information

[6]. Management scholars study how crowdfunding can overcome offline barriers to financial transactions [1]. They find that crowdfunding mainly eliminates the effects of distance from supporters whom creators did not previously know [1]. Business scholars strive to understand how crowdfunding can provide insight into the experience goods market [49]. They find that crowdfunding support is mainly controlled by peer effects [49].

However, few scholars have examined crowdfunding from a community standpoint in order to understand how communities of creators and supporters interact with each other to accomplish crowdfunding goals. Those who do have only studied "enterprise crowdfunding" where employees give money to projects of other employees to improve within-company collaboration and innovation [35]. The study on "enterprise crowdfunding" was done in a closed environment of one company, while the crowdfunding community that we study is open.

As designers and CSCW researchers, we strive to understand why people choose to use and interact within this new type of online platform. In a previous study of crowdfunding, researchers uncovered creator and supporter motivations and deterrents to crowdfund [16]. They found that creators were not only motivated to raise funds, but also to expand awareness of their work, establish connections, gain approval, maintain control, and learn new skills. Supporters were not only motivated to collect rewards, but also to help others, be part of a community, and support causes in which they believe strongly. However, creators were also wary of attracting negative public exposure, the time commitment, and how project creators would use the funds [17].

During the study of motivations for participation, creators routinely expressed concerns about the disparity between the perceptions of crowdfunding work in the popular press and what they actually experienced. While the press publishes sensational articles about former "nobody's" raising millions of dollars through social media marketing [55], project creators whom we interviewed described the difficulties creating a campaign and communicating and coordinating with a large online audience. These findings inspired the current research we present.

METHODS

Interview Participants
We interviewed 47 crowdfunding project creators from three crowdfunding platforms—Kickstarter, IndieGoGo, and Rockethub—the most popular and successful platforms in the US [4]. Projects included Art (7), Comics (1), Dance (1), Design (15), Education (1), Fashion (2), Film & Video (7), Food (4), Games (10), Music (3), Photography (3), Publishing (6), Science (4), Technology (1), and Theater (3). Approximately 50% of project creators met their fundraising goal on at least one of their projects, which is similar to the success rate of Kickstarter, the largest crowdfunding platform that we studied [56].

Most creators maintained full time professional day jobs – spending between 30 minutes and 7 hours a day on weeknights or weekends working on their crowdfunding project. Three informants relied on crowdfunding as their primary source of income.   Participant ages ranged from 20 to 52 years old and raised between $71 and $313,371. Thirteen creators launched more than one campaign, ranging between one to nine campaigns per creator interviewed. Interviewees were not compensated for their participation. We found that our sample of participants is representative of the crowdfunding population based on success rate and spread of project types [56].

Procedure

We recruited interview participants through random and snowball sampling, which allowed us to identify typical and atypical participants from the crowdfunding population. Our semi-structured interview protocol was divided into two sections. In the first section, we asked participants about their professional background and how they learned about and became engaged in crowdfunding. During the second phase, we asked participants to describe the work involved - both collaborative and independent. We began each interview by explaining that we were researchers not affiliated with any crowdfunding platform and that personal information would remain anonymous.

Interview data collection lasted for 11 months with an average interview length of 30 minutes. Interviews were conducted over video conferencing, phone, and in person. Interviews were conducted during and after the creators' campaigns. Advantages of this research approach include collecting both reflective and in situ data. Disadvantages include biases from self-report [44].

Analysis

We used selective coding and analysis [44] to understand the work involved in crowdfunding. First, we flagged each instance describing work. After identifying all of the instances, we clustered tasks into conceptual categories. Initial data analysis for the semi-structured interviews began after 10 interviews, while the remaining interviews were used to gather data pertaining to emergent themes [34].

CROWDFUNDING WORK

We identified five main types of crowdfunding work: (1) *preparing* campaign content and initial prototypes, (2) *testing* the campaign material, (3) *publicizing* the crowdfunding project to potential supporters, (4) *following through* with project goals, and (5) *reciprocating* resources to the crowdfunding community. In each of these stages, we identify how community and support tools facilitate or hinder the work process.

Prepare the Campaign Material

Preparing the campaign material includes all crowdfunding related efforts prior to the campaign launch, which typically includes creating a video, project description, funding goal, campaign timeline, and reward descriptions to be posted on the campaign page (see Figure 1). From our initial data, we found that creators had difficulties learning the technologies and skills needed to perform these preparation tasks, such as using video editing software or writing a convincing description. In order to gain the necessary knowledge and skills, project creators relied on the community by using similar existing projects as models for their own, and reading blog posts and soliciting advice from experienced project creators.

Based on our interviews, preparing these materials can last three to six months before the campaign during which time the creators spend extensive efforts understanding the process and learning new skills. A creator of a science project described challenges with preparation:

"It was enveloping in terms of taking up time and emotion and overall effort. Creating a video, obviously, is difficult. I felt like it was a good opportunity and a good experience, but nonetheless, it takes a lot of time developing a script, collecting all the videos, editing, etc." -p11

To facilitate learning from others, crowdfunding platforms provide project search capabilities, such as finding projects based on location and category. Investigating other projects helps creators decide on reward ideas, video ideas, project description language, and nature of communication with supporters. A creator of a publishing project explained:

"It's always good to see what works for these projects and what doesn't work. How they're promoting, [performing] backer updates…All of those different parts of it, you kind of take those as inspiration and figure out how to adapt that to your own voice." -p6

However, Kickstarter, IndieGoGo, and Rockethub do not offer the ability to search for others people's projects by failed projects or by funding goal, number of supporters, or campaign duration, campaign features that project creators cite as ways to compare and contrast to their own campaign to others. In response, frustrated creators have started to create their own tools, such as the project search platforms Kickspy [57] and The Kickback Machine [58]. These platforms allow creators to find projects similar to theirs based on various project attributes in order to learn from the experiences of others.

Creators also reported reading advice blogs, where other creators have documented their crowdfunding experience, as a useful way to prepare for their own campaign. One creator of a photography project described how he got inspiration from a related project:

"I was reading somebody's Tumblr…It was another photo project…That's how I came up with a lot of my rewards…I kind of was trying to take a little from a lot of people [to] come up with rewards that people are kind of into." -p20

Some creators also described relying on experts with certain skillsets within the community to prepare campaign material. A creator of a children's food project described how she

Crowdfunding Work	Definition	Role of Community
Prepare	Prepare campaign materials	Provide example projects as models Provide general advice blogs Give one-on-one advice Offer specialized skill expertise
Test	Test campaign materials	Give feedback on campaign materials Provide opinion on design direction
Publicize	Market the project by using campaign materials	Spread the word Build an audience
Follow Through	Follow through with project goals and send rewards	Provide manufacturing or shipping support Offer specialized skill expertise
Reciprocate	Reciprocate resources back to the crowdfunding community	Provide advice Provide financial resources

Table 1: Table of crowdfunding work, including definitions and summary of the role of community throughout the work process.

relied on the free counseling of a film expert to help make her project video:

"The girl who helped us with the film…she gave us tips on script and stuff like that. We had a couple meetings with her, and she did it in her spare time too. So, that was part of the challenge because we were depending on other people who were kind of giving their time for it."-p17

Novice crowdfunders have begun to turn to self-proclaimed "crowdfunding consultants" who have made a name for themselves as expert crowdfunders in the crowdfunding community. One project creator explained how she agreed to give 7.5% of her post-campaign profits to a consultant who had successfully ran several of his own crowdfunding campaigns in exchange for his advice. Because the campaign material is the initial touch point between creators and potential supporters, some creators decide to spend extra money to seek their advice. The topic of crowdfunding mentors will be discussed further in the Reciprocate Resources section.
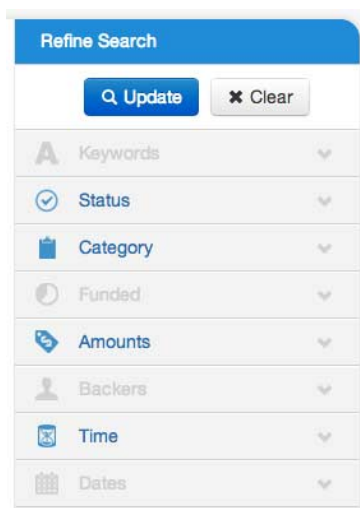

Figure 2: Kickspy's project search bar, which allows creators to search for crowdfunding projects based on keywords, campaign status, project category, amount raised, number of backers, campaign duration and what months the campaign was live.

In addition, all three platforms provide tutorial/information pages to explain crowdfunding responsibilities. But, few creators cited using these tutorials as a major method of preparing for their campaign. Rather they preferred to follow advice blogs or look at other projects for ideas. This suggests that more research is needed to understand what makes crowdfunding-specific tools useful or not useful.

Overall, creators described the usefulness of tools that support learning from analogy [15], such as reading advice blogs and searching for inspirational projects, and rely on other people's skillsets to accomplish the work. While participants described the usefulness of search tools, they expressed difficulties learning more complicated technologies, such as video editing software.

Test the Campaign Material
Creators test their campaign material by asking for feedback from their personal network and community of supporters. The amount of testing varies from creator to creator, some getting feedback from as many people as possible while others producing their work without input from others. We find that creators who actively seek feedback before and during the campaign tend to be more successful, which is consistent with research on the importance of getting feedback during the design process [21].

Creators first look to their personal network, such as friends and family, to give initial feedback. Creators preferred to be judged in a private setting with close friends rather than sharing materials with a public audience that could reject their work. A professor and creator of a science project described how he felt when showing his video publicly to his undergraduate class to get feedback:

"I was nervous because it's one thing to be sitting in front of a computer, and it's quite another thing to show a video to an audience where you can actually hear their reaction…Are they actually going to find this funny? When you haven't done something like that before, it's a little intimidating."-p31

Figure 3: Posts on the Kickstarter Subreddit where project creators seek advice on their campaign material prior to launching.

Other creators reported turning to their supporters during the campaign to get feedback on project direction and design. One creator of a poetry book project posted daily poems and used his audience to gauge the quality of his writing:

"Some of the backers have been emailing me that they like the different poems, like, 'Oh, the poem today was great,' others are telling me, 'They're okay."-p24

Another creator of a snowshoe design project let his supporters decide the color of the shoe straps. Unlike traditional company-consumer relationships, such as buying a product on Amazon, crowdfunding project creators are able to involve the supporters in the design process by polling for their opinions or conversing with them on a discussion board throughout the design process.

Recognizing the need to incentivize giving and getting feedback, Rockethub's SciFund Challenge requires creators to give feedback to other creators in the platform community wiki page. One creator described how she used this platform-based support network to improve her campaign material:

"I did have the help of the other SciFund people. We had a wiki. We all put up our projects, and people would comment on them, so I got a lot of good feedback from the other people who were also putting up projects, and I commented on their projects."-p3

Currently there exists no online mechanism specifically for getting feedback on crowdfunding materials from the crowd in a private setting. Creators are able to gather feedback publicly through social media platforms, such as Facebook and Reddit, to gauge how the online crowd will react to their campaign.

Testing campaign material and project prototypes before the campaign acts as type of soft launch, releasing a product or service early to a limited audience, while testing the material after the campaign launches allows creators to iteratively improve their page to during the campaign.

Creators often emphasized the importance of editing their material prior to launch because they will be preoccupied publicizing their work and communicating with supporters during the campaign. Those who did not test their campaign material expressed difficulties finding an audience to solicit quick and honest feedback. People who turned to their community of friends and family expressed that their opinions were often not representative of the public as shown by their campaign success or failure. Participants also expressed worries that asking for help before the campaign would use up social capital [10,12] that they had hoped to save for publicity efforts later on.

Publicize the Project
Creators market their project by publicizing their idea through social media, contacting people individually through email, and sending press releases to news media outlets to reach a wider audience. Although creators reported relying on community efforts to help them publicize their project, they still expressed difficulties building an audience, getting people to spread the word, and managing discussions with supporters. One creator of a food project described the time commitment during a live campaign:

"It's honestly, like, it's a full time job. If you're going to launch a Kickstarter, you have to be prepared to devote 4-5 hours a day just making sure that you are promoting it or following up on it, you know, or anything like that." -p8

Creators reported spending 2-11 hours a day marketing during a live campaign that usually lasts 0.5-2.0 months, which often leads to a pay to time-spent ratio less than minimum wage.

In an effort to harness the power of their social network, creators ask their friends and family to spread the word [14]. For instance, a creator of another food project described:

"Help I get from my good friends is just reposting it...echoing it out on onto their networks and their Facebook or LinkedIn or Twitter accounts." -p18

Others reach out to existing online niche communities, such as Subreddits, in order to contact people that are interested in the specific project topic. For example, the creators of the game project, Planetary Annihilation, on Kickstarter, raised over $2 million from over 40,000 supporters and maintain an active Subreddit of 2,800 followers in which they keep supporters updated on the campaign and game progress.

Not only must creators act as their own publicist, they must also perform public relations by addressing questions and concerns from hundreds or thousands of supporters. By addressing questions and posting regular updates, creators maintain supporter relations and uphold a reputation of being responsible and trustworthy. A creator of a game project described how he keeps his supporters informed on progress:

Figure 4: A post by a crowdfunding project creator asking Facebook friends to spread the word about the campaign.

"I will make sure that I send updates on how it's going… I'm able to share real time videos of how I lay out a book design, and so I can share the process as it goes through. The backers appreciate that, and that seems to kind of build up trust that I can fulfill on these projects, which is one big question mark early on."-p27

However, not all creators realize that supporters want to engage in the project creation process, and therefore fail to write enough project updates or respond to their comments. Some of our participants cited not interacting with their supporters enough as a major reason for why their campaign did not gain widespread publicity.

In order to continuously gain traction with personal connections, creators reported sending emails once or twice a week to remind people to support the campaign.

"I was emailing people individually asking for support…I would say, hey person's name, I am doing this project. It's really cool, and give them like a description of it, and at the end of it, I would say, I know that this project will be very successful on Kickstarter because of supporters like you." -p1

While some reported their project going viral, leading to a boost in support:

"I posted on Google+. I posted on Twitter. I posted on my blog…It was picked up on twitter by a British science journalist…and then CNN covered it, and Forbes covered it, and then everything just went crazy after that."-p3

Others had trouble making any impact in the online space:

"I've reached out to dozens and dozens of blogs and newspapers and entertainment sites…And I've just gotten a couple of mentions, which really surprises me. It's been very difficult getting the word out there… I have good friends that I haven't been able to get to the site. It's very shocking. It kind of shows you who your real friends are." -p24

Such comments suggest that creators do not have an accurate understanding of their social network or crowdfunding community, and may need further guidance in learning how to leverage their connections. The majority of failed project creators cited the inability to successfully leverage an online audience as a main reason for failing. According to Kickstarter, 56% of project creators fail to reach their funding goal [56].

Creators who reported having previous experience publicizing their work tended to be more successful. For instance, we found that creators with an established career in the arts had less trouble marketing their work than creators of science research projects. Because art project creators described having experience organizing public fundraising efforts throughout their career, they felt more comfortable asking their friends and family for support and had already developed an interested audience prior to launching their campaign.

By regularly interacting with an online audience through marketing efforts, participating in discussions, sending updates, and inquiring for supportive efforts, creators build an ad hoc community of supporters. While the work of maintaining this community takes public relations skills and is very time consuming, creators are able to create a following that lasts throughout their campaign and possibly for future projects.

Follow Through with Project Goals

Creators follow through with their campaign by carrying out project goals and delivering rewards. Creators who make it to this stage of crowdfunding find the public commitment of manufacturing and shipping rewards to be overwhelming because they must answer to hundreds or thousands of supporters [9]. In an effort to ease their responsibilities, some creators describe tapping into communities of skilled labor to outsource some of the work.

A creator of a board game project described how he and others collaborate with people with needed skillsets in a resource exchange of funds and labor:

"Say you do layout or you do editing, there's sort of this relationship now that you get with project creators where you can sort of agree handshake deal to work on their project on the condition that it be funded first…So, though no money has exchanged hands, and no one's really contractually obliged to…you can still come to agreements that are mutually beneficial."-p27

However, many project creators are not part of an existing community whom they can call on for project support. People with less community connections and fundraising experience describe being ill prepared for this stage of the crowdfunding process. A first-time creator of a publication project described how she was unprepared to produce on a large scale:
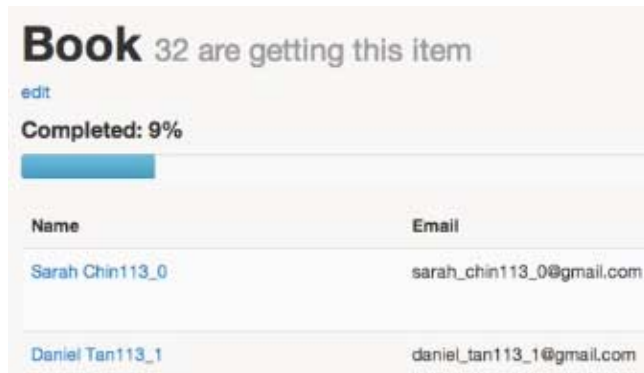
Figure 5: Screenshot of the BackerKit interface, a platform that was started by experienced crowdfunders, to help project creators keep track of supporters and rewards after the campaign ends.

"We're a one person company for the most part. I'm the only full time person working on this over here…It's just a lot to get all these things out to that many people." -p7

To the dismay of her supporters, p7 could not send her rewards out until months after her promised deadline. Sending out rewards after the proposed shipping date has become a prominent issue in popular press [50]. Of the 47 people we interviewed, creators reported having to manage between 3 and 3,258 supporters.

Those with extra funds often decide to hire outside help. For example, a creator of a dance project explained:

"I was very lucky in that I didn't handle the mailing myself. My assistant did. But, I think she wanted to throttle me and the postal service by the end." -p15

In response to difficulties during campaign follow through, project creators and other companies have begun to develop tools to support the organization of supporter information and reward shipment (see Figure 5) [59,60,61].

Creators reported the use of general planning and communication tools, such as Excel, email, and Google Calendar to manage orders and collaborate with others. Many expressed difficulties knowing how to use these technologies to accomplish the work since simply knowing how to use Excel does not mean that one has budget management experience. Although there has been an increase in the number of crowdfunding-specific tools, few of the creators interviewed knew of their existence.

Reciprocate Resources

While some would consider the previous four types of work to fully describe crowdfunding, we also take into account reciprocating resources, including providing crowdfunding advice and funds back to the community. Creators consider contributing as a critical task to maintaining a sustainable ecosystem that supports collaboration rather than competition. Creators contribute back knowledge by posting relevant online resources, such as blogs on their experience, or

offering one-on-one help in person or though email or video chat. Creators also contribute back funds to support other creators the way the crowdfunding community first supported them. For instance, one film creator explained:

"There's a kind of etiquette in [my film program]. If someone funded me, then I'm supposed to fund them back. Otherwise, it would be a little awkward."-p30

Another creator of a publishing project described how this work was about more than just giving money:

"The funny thing is I probably gave other people as much money as I've just made on this Kickstarter campaign… I could have kept that money in my pocket, but the whole thing is like, a load of confidence."-p32

She described how crowdfunding served as public validation for her work, something that creators cannot measure when being funded by a single investor.

Creators also support each other by sharing crowdfunding advice with novice creators. One board game creator explained how he created a Pinterest board (see Figure 6) where he posts links to articles that answer commonly asked questions:

"I've put [advice] on a Pinterest board that I try to share when people come to me now and ask, 'How do I do a Kickstarter?'…Kickstarter itself actually documents some of these answers, but I think people just look at it and kind of get a little, I don't know, glassy-eyed? And so, to an extent, they're just looking for, 'Well, where do I start trying to figure out what I want to do here,' and that's what the pin board was for."-p33

Experienced creators provide advice at different stages of the campaign. Another mentor described giving more feedback on people's campaign material rather than advice before they started planning for the campaign:

Figure 6: Screenshot of a creator's Pinterest advice board that he made to help mentor novice project creators.

"Every week or so, somebody emails me asking questions about Kickstarter, like, 'My project got rejected by Kickstarter, how do I redo it?' And I'm like, 'You need to change this, this, and this."-p6

Another successful crowdfunding team created public Google Documents templates of how to format a supporter email, press email, media management spreadsheet, supporter management spreadsheet, and update description.

While some creators have become well known in the crowdfunding community as mentors because they post advice blogs and actively seek out ways to support others, most project creators contribute back by helping out one or two people who reach out to them. For instance, a high school student who launched a crowdfunding citizen science project described:

"The other day I was approached by a 14 year old who was in medical school in Guatemala, and I gave her some help on [her project] and she helped me back. So, I'm not sure if I'm a mentor because she helped me as much as I helped her. But, I like to think that I will be helping other people as much as they helped me."-p47

Project creators feel a sense of responsibility for giving back to the community that supported them, whether that is financially or as a mentor. These practices have created an environment that is more supportive and less competitive compared to certain entrepreneurial practices, such as innovation competitions where entrepreneurs must maintain information asymmetry to get the resources that they need. We find that contributing knowledge and financial resources back to the community is critical for the growth of crowdfunding as a cooperative community.

DISCUSSION

The ongoing relationship that crowdfunders maintain with their community of creators and supporters sets it apart from typical entrepreneurial work. Scholars studying entrepreneurship find that less than 30 percept of entrepreneurs maintained direct or indirect ties with investors or customers [7]. This stands in contrast to crowdfunding creators who are advised to maintain regular contact with their community of supporters through project updates and discussion boards. Our findings suggest the community aspect of crowdfunding, including publicizing to the general Internet audience and managing hundreds or thousands of supporters, introduces unique difficulties to the typical entrepreneurial process.

Although the campaign duration is limited, many project creators are motivated to build lasting relationships with supporters, other creators, and resource providers long after their campaign ends. To do this, creators follow community building practices, such as engaging with supporters personally by explaining the value of their support [32], recruiting supporters to spread the word about the campaign in order to reach a critical mass of members [19,30,33], as

well as extrinsically motivating people to contribute by promising rewards [28,40].

Unlike in entrepreneurship, crowdfunding creators describe their relationship with the public as a supportive rather than competitive relationship. Shane stresses that the act of identifying entrepreneurial opportunities is not a collective act, but the work of an individual formulating a new means-ends framework [43]. While he explains that the entrepreneurial process involves collaboration with teammates and other firms, he emphasizes that entrepreneurs aim to maintain information asymmetry in order to have a competitive advantage. This is different from crowdfunding where project creators feel responsible for helping other project creators by sharing advice and feedback. To support the mentorship and vicariously learning from other, project creators seek help on online forums and use search features to support researching campaigns [57,58].

Similar to entrepreneurship, the evaluation of crowdfunding projects relies on a socio-cultural environment where society ultimately makes the decision on what projects should or should not be funded [43]. In this case, the heavy reliance on community is beneficial for crowdfunding creators because their work is constantly being assessed by the consumers throughout the campaign. Creators acknowledge the usefulness of getting feedback from the crowd [21], but few attempt to do it on a large scale for fear of public rejection [9]. Those that want to test their materials with the crowd face difficulties in finding enough motivated people to give detailed feedback outside of their personal network.

We found that crowdfunding work relies on a mix of distributed work and crowd work since creators may work with distributed team members and supporters to organize campaign efforts while soliciting publicity help from hundreds of people that they have never met before. Similar to crowd work, creators must tailor their requests to the supporter community to motivate contributions [26]. Similar to distributed work, context still matters [37] in communicating with crowdfunding supporters (e.g. by social media, blog posts, etc.). Creators also use various web-based technologies, such as video, email, and personal blogs, to achieve common ground with their supporters when explaining their project idea and value. Unlike crowd and distributed work, crowdfunding supporters mainly contribute money while crowd workers typically contribute services in exchange for money.

Creators also express difficulties spreading the word about their project and mobilizing interest, which could be explained by creators having less business, marketing, and management experience [41], as well as lower social status [45] and fewer social ties [2,11,18]. Lescovec, Adamic, and Huberman's research in viral marketing has also shown that there exists a saturation point to the number of recommendations a person can receive to purchase a product [30]. We observe similar activity in the crowdfunding consumer space where creators who market their project too often

become ignored by their social network, which may contribute to their inability to publicize their project effectively. This suggests that more research needs to be done on finding ways to gage community willingness to help.

The practice of relying on others for outsourced help, mentorship, and feedback has created a community where the crowd funds the work and creators collaborate with helpful individuals through a mutually beneficial partnership. During follow through, creators have begun to form connections with companies and people with specific skillsets to perform certain tasks. Similarly, entrepreneurial work emphasizes the usefulness of teams [27,39] and forming alliances [23] to help ease work responsibilities.

While both entrepreneurship and crowdfunding rely on collaboration to achieve project goals, crowdfunding inherently relies more on community support for project success. We find that creators rely on community efforts to overcome difficulties of getting advice, designing one's campaign, getting feedback, publicity, and shipping rewards. We call for the creation of systems tailored to the needs of crowdfunding project creators.

DESIGN IMPLICATIONS FOR SUPPORT TOOLS

Based on our findings, we provide an overview of current crowdfunding support tools, and how they do or do not support coordination and collaboration throughout the crowdfunding work process. We identify opportunities for improvement in the areas of feedback and mentorship. We also acknowledge that tool adoption is a primary issue as there may need to be better mechanisms that assist in new technology visibility or cheaper and easier ways to onboard.

Support campaign preparation

During the preparation stage, project creators described searching for example projects, reading advice blogs, seeking one-on-one advice, and outsourcing preparation tasks. Because many crowdfunding platforms, including Kickstarter, IndieGoGo, and Rockethub, do not allow project creators to search for failed projects or by certain attributes, platforms such as The Kickback Machine [58] and Kickspy [57] were designed to help project creators find crowdfunding projects from which creators can learn strategies to follow or avoid. Although crowdfunding articles and blogs stress the need to research other campaigns before launching one's own, most of our participants said they did not research enough, and few knew of the existence of these search tools. This suggests that extra steps must be taken to get the crowdfunding support tools into the hands of novice creators perhaps through establishing partnerships between crowdfunding platforms and independent crowdfunding support tools. From initial interviews, there appeared to be a disconnect between creators of crowdfunding support tools and managers of crowdfunding platforms, as the former say that platform managers have never reached out to them, while the latter describe having little time to partner with other websites.

Figure 7: Screenshot of the Kickstarter Status Board, which allows creators to track who is posting about their campaign on which social media sites, and which of those links drives the most traffic to the crowdfunding campaign page.

Support campaign material testing

There are also no platforms dedicated to providing crowdfunding advice or feedback. Rather, creators find feedback providers mentors through word of mouth or online forums that serve as meeting places for people who give and seek advice. However, these forums offer mainly one-time interactions, and more general crowdfunding advice rather than more useful one-on-one feedback. Most of the project creators described seeking feedback from a few close friends or family members. Project creators described being unwilling to show their campaign material to a wider audience, such as weak ties on social media sites, prior to launch fearing they would use up social capital [10]. Because feedback provides insights on how to improve project quality [46], one potential design solution is to create a service that helps creators test their work with an anonymous crowd, such as on Amazon Mechanical Turk. As Mechanical Turk becomes an increasingly popular testing ground for new ideas in research [25], we could employ similar methods to help creators systematically collect and synthesize feedback about their project from an online crowd. Currently, crowdfunding researchers are beginning to develop tools that allow project creators to seek large amounts of feedback in a private setting from an anonymous crowd [51], which would allow them to test their ideas without wasting social capital.

Support publicity management

We have also identified a number of tools that support publicity and supporter management. Project creators describe publicizing the campaign as one of the most difficult stages of crowdfunding. However, because many of these tools were launched in the past year, few of the people we interviewed were able to use them for their campaign or were unaware of their existence.

To support the workload of running a campaign, creators could use personal virtual assistants provided by platforms, such as Zirtual [62], which allows people to hire online assistants to help with publicity efforts or community management. However, many of our participants described having

little to no extra funds to hire an assistant, especially one they had never met before, as is the case with Zirtual. Instead most attempt to perform social media marketing on their own, finding that posting on their Facebook wall or Twitter feed quickly reaches its impact limit before the project is close to reaching its funding goal.

In an effort to help project creators better organize their publicity efforts, people in the crowdfunding community have created publicity tracking support tools, including the Kickstarter Status Board [5], which allows project creators to track all posts made about their project on Facebook, Twitter, and news media. Participants also described difficulties contacting their community of supporters on a large scale. One tool that supports this feature is Nationbuilder [63], which allows campaign managers to collect, organize, and contact large amounts of supporters personally. While Nationbuilder offers a wide variety of features that support crowdfunding work, it is not free and is marketed towards more intensive campaigns, such as running a nonprofit company or a political campaign, that may last many months or years. Learning to use its system may take too much extra time and money, especially for people who are crowdfunding for only a few weeks in addition to their daytime jobs.

Support campaign follow through
Tools have also been launched to support crowdfunding follow through work, including Backerkit [59], which allows project creators to organize supporter and reward information, Teelaunch [60], which prints and ships t-shirt rewards for crowdfunding campaigns, and Fullfillrite [61], which manages crowdfunding reward shipping efforts. In an effort to strengthen the "meta-economy" already being formed, HCI designers could design a matchmaking service in an effort to build a community between project creators who lack skills and people with skills but in need of employment. There exist search agencies that find people with specialized skillsets, such as Odesk [64], which directly connects people in search of help to people who can provide it. However, the dynamic of crowdfunding where creators cannot pay outsourced help until after having a successful campaign, may affect who is willing to offer their services as not all creators are able to guarantee payment if the project falls through. This suggests that there may be a need for trust-based connection services for crowdfunding where creators and people who provide skilled labor mutually understand the tenuous payment situation.

Support reciprocating resources
In terms of reciprocating resources, project creators have posted on blogs and personal websites, participated in crowdfunding online forums, created advice boards (see Figure 2), and responded to questions through email. However, participants described hearing about advice and mentors through word of mouth, which means that much advice goes unheard, and people with more ties to the crowdfunding community are more likely to find help. While online forums, such as the crowdfunding Subreddit, bring together mentors and people

in search of advice, the relationship is not personal because users are anonymous, and very brief because people can come and go without being responsible for following up. While any advice is helpful, creators preferred more personal one-on-one advice from mentors with whom they could maintain a long-term trusting relationship. This suggests that creators would benefit from a mentorship service where novices are paired with experienced crowdfunders who are willing answer questions throughout the campaign.

While there has been a growth in the number of crowdfunding support tools in the past years, many project creators have not started using them or even know of their existence. This adoption failure could be a factor of cost, visibility, or onboarding effort. Many of these tools have already begun to address crowdfunding difficulties identified in this study, such as project search, publicity tracking, and reward fulfillment. However, there still exist many opportunities for improvement, such as ways to get crowd feedback prior to campaign launch or easier ways to connect crowdfunding mentors to novice creators. By building on relevant research in HCI and online communities, we take the opportunity to create design solutions that help creators accomplish crowdfunding work.

FUTURE RESEARCH
Our findings present many new questions for future research. First, we seek to discover why some people meet their goal and others do not. Possible explanations may include time management, team size, position in network, and the ability to use social media effectively. When considering future attempts to crowdfund, one creator said he would do the same work, but allocate his time differently – spending more time on marketing prior to the launch of his campaign. Another creator said he might expand his team to include members with needed skillsets. Believing that crowdfunding is the quantification of one's social capital, another creator suggested that he would build his network offline before attempting a crowdfunding project with a larger fundraising goal. This perspective is consistent with research that finds that network position influences access to resources [8].

We also intend to study how prior experience influences crowdfunding work. In this study, we found that creators of artistic projects tended to report less difficulties crowdfunding than creators of science projects. Creators of artistic projects reported having had to rely on other forms of crowdfunding (e.g. holding fundraisers) before online crowdfunding platforms existed. They reported finding it easy to ask people to give funds or to promote their project to as many people as possible. Scientific researchers on the other hand, who typically solicit funds from a single contact through government and private foundation grants, found this work more difficult.

While we hope to better understand factors leading to success, it is important to note that it is not our goal to get all creators to succeed. We acknowledge that in order for a sustainable funding economy to exist, some must succeed and

some must fail. Rather we hope to make the path to success more transparent.

Lastly, we hope to study the role of emotion in crowdfunding work. As crowdfunding is a public action, creators have expressed reservations about sharing their work with the public, fearing idea theft, public rejection, and having to ask for help publicly [16]. By drawing from work on costly public action [9] and failure aversion [22], we hope to further uncover how the public aspect of crowdfunding and emotion affect this new type of entrepreneurial work.

CONCLUSION

We must seek to understand how the involvement of community support is changing the entrepreneurial work process. In this qualitative study of crowdfunding work, we find that many people underestimate the work involved and find themselves overwhelmed with the responsibilities of coordinating and answering to a large crowd of supporters. To overcome such obstacles, a community of collaboration has evolved where creators rely on mentorship, support tools, and outsourced help to accomplish their goals. We hope to build on this environment of mutual support by calling for CSCW researchers and designers to create crowdfunding support tools and systems that will help the community continue to grow and prosper.

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