

Easy Money? The Demands of Crowdfunding Work

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ABSTRACT

Crowdfunding provides a new way for people to solicit support from the crowd to launch new ventures. With exceptional crowdfunded projects gaining national attention for raising millions of dollars in a day, people have jumped at the opportunity to try crowdfunding for themselves. However, despite the seemingly simple promise of quick and easy funding, little is known about the work required for most crowdfunding projects. Based on an ethnographic study of crowdfunding work through interviews with project creators and participant observation, we describe the work required of running a crowdfunding project, examining what they do, who is involved, and how they do it. We find that the work consumes more time and requires a greater skill variety than what novice crowdfunders expect. Crowdfunding work involves *understanding* the opportunities and responsibilities, *preparing* the campaign material, *testing* the campaign material and initial project prototypes, *marketing* the project, *executing* the project goals, and *contributing* knowledge back to the crowdfunding community. This study is the first qualitative study of crowdfunding work. Findings can inform the design of crowdfunding systems and support tools.

Author Keywords

Crowdfunding, work, entrepreneurship, crowd work, distributed work, innovation.

ACM Classification Keywords

H.5.3 [Group and Organization Interfaces]: Design

General Terms

Design

INTRODUCTION

In 2010, Scott Wilson, a watch designer raised almost one million dollars from over 13 thousand individual backers on Kickstarter, a popular crowdfunding platform. In early 2012, Rich Burlew raised over one million dollars from 15,000 supporters to fund his comic book series. Most recently, a video game console design team raised more than two million dollars in the first 24 hours of their campaign, or \$1,388 a minute [29].

Such rapid public success has attracted the attention of many creatives, entrepreneurs, engineers, artists, and scientific researchers, who believe that they too can “harness the power of the crowd” to fund their work quickly and easily [18]. As one project creator explained to us, “I think I can get \$1 from a million people easier than I could get \$1,000,000 from one person or an organization.” Perceptions of fast financial return



Figure 1: Screenshot of a crowdfunding campaign on Kickstarter. Ouya, a video game console design team, raised more than 8 million dollars in one month.

and low barrier to entry has led the public to believe that crowdfunding is a quick and easy way to fundraise.

We find contrary evidence. Although crowdfunding has provided alternatives to traditional fundraising methods, such as bank loans and venture capital, our ethnographic study of the crowdfunders finds that the work involved is more time consuming and requires a variety of skills, not unlike running an entrepreneurial venture.

Creators may spend up to six months in preparation prior to the official campaign launch and up to a year producing and delivering rewards for those who have supported the campaign. During this 1-2 year process, crowdfunding requires creators to simultaneously perform multiple roles – many of which may be outside their core domain expertise. At different stages of a crowdfunding campaign, a creator may act as a publicist to communicate the project idea, an accountant to decide the budget, a manager to coordinate team efforts, and an engineer to manufacture the product. All this must be achieved while coordinating and maintaining communication with a crowd of supporters that may be as large as hundreds or thousands of people.

We present a qualitative study of crowdfunding work using interviews with 46 project creators and our own participant observation of a crowdfunding campaign. We aim to answer the following research questions: **What is the work of crowdfunding? Who is involved, and how do they accomplish the work?**

Despite crowdfunding's growing popularity, no researchers have studied crowdfunding from an ethnographic perspective. This method allows us to understand the nature of the overall work process described by participants who are currently going through and reflecting on the work of crowdfunding as well to experience the work first hand. This research was inspired by the classic managerial study by Henry Mintzberg titled "The Nature of Managerial Work." Mintzberg's goal was to understand what managers actually do day-to-day in order to design management support tools [19]. Like Mintzberg, we seek to understand the nature of crowdfunding work to design tools informed by the needs of the user [21]. Our primary contributions are as follows:

- An understanding and classification of crowdfunding work
- Design implications for crowdfunding support tools and systems

This paper is organized into three sections. The first section introduces crowdfunding work and related research on entrepreneurial work, distributed work, and crowd work. The second section presents our findings, identifying types of crowdfunding work as well as difficulties involved. The third section discusses design implications and the need for tools and systems that facilitate the work process.

CROWDFUNDING

Crowdfunding is defined as the request for financial resources on and offline in exchange for a reward offered by the creator, such as an acknowledgment, an experience, or a product [7]. While the first crowdfunding platform was launched in 2001 [35], in the last five years the number of platforms has grown exponentially, including 452 platforms across the world with \$1.47 billion dollars donated in 2011 [11]. Since crowdfunding platforms usually take a 3-5% cut of the donations, we estimate that they have earned \$58.8 million in 2011, possibly explaining the explosion of new platforms. These platforms use existing web-based payment systems (e.g. Amazon Payments) to facilitate the exchange of resources between creators and supporters using social media (e.g. Facebook) and video sharing platforms (e.g. YouTube) to raise awareness.

Online crowdfunded projects span across many fields and vary in scope, from a film maker seeking \$100,000 to produce a documentary to a PhD student seeking \$1,000 to pay for research testing equipment. Likewise, rewards to supporters are diverse, from getting a pre-release download of the film to receiving a simple "thank you" email. 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 [4].

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. Crea-

tors fill out these recommended and required fields online, and if the project is approved, the crowdfunding platform presents their work in a pre-formatted page where visitors can choose to donate.

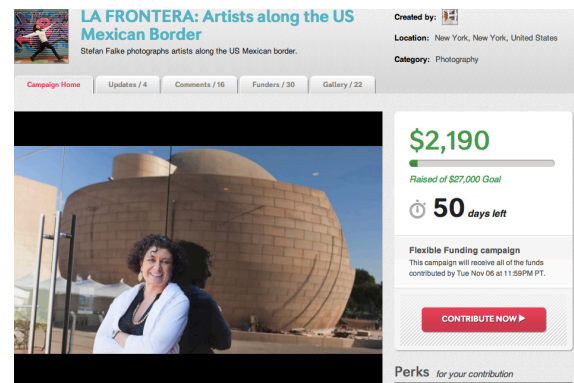


Figure 2: Screenshot of a pre-formatted live campaign page on the crowdfunding platform, IndieGoGo. Supporters can donate by clicking the "Contribute Now" button.

The nature of donations varies across platforms. In the All-or-Nothing funding model, the creator must meet the funding goal they set in order to keep the funds. If their goal is not met, the supporters' accounts are not charged, and the creator neither gains nor owes any money. The Keep-What-You-Raise funding model allows creators to keep any amount of money they raise even if they do not meet their funding goal. Supporters' accounts are charged immediately after they make a donation. In both models, when the funding goal is reached, creators pay a percentage of what they raised to the platform (between 3-5%) and a payment processing fee (between 3-5%) to the web-based payment system [14,16,24].

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 [32]. They find that crowdfunding support is mainly controlled by peer effects [32]. However, to date, few scholars have examined crowdfunding from a design perspective to understand opportunities for new tools and systems to support the work.

As designers, we strive to understand why people choose to use and interact within this new type of online platform. Understanding why people have been drawn to this practice allows us to present principles that improve the design of crowdfunding platforms based on the needs of the users [21].

In an initial study of crowdfunding, we uncovered creator and supporter motivations for crowdfunding [4]. We found that creators are not only motivated to raise funds, but also to expand awareness of their work, establish connections, gain approval for their work, 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. During this study of motivations for participation, creators expressed concerns about the disparity between the perception of crowdfunding work in the popular press [33] and what they actually experience. This disparity inspired this ethnographic study of the actual work of crowdfunding.

RELATED WORK

Crowdfunding blends elements of entrepreneurial work, distributed work, and crowd work. We review studies of related research to provide a perspective into how crowdfunding may be similar or different.

Entrepreneurial Work

Entrepreneurship is defined as the discovery, evaluation, and exploitation of opportunities to introduce novel products, services, and organizations [25,26,31]. Entrepreneurial work includes understanding the opportunity, obtaining resources, and organizing follow through efforts. Entrepreneurs understand the opportunity by assessing the costs of engaging in a new venture [26]. Their considerations are influenced by psychological and environmental factors such as one's risk aversion and employment status [26]. When obtaining resources, scholars find that the majority of entrepreneurs use their own savings either out of necessity or to maintain control [2]. Entrepreneurs then exploit opportunities by creating a new firm or market mechanisms [26] through the organization of equipment, employees, production processes, and legal obligations [31].

Similar to entrepreneurial work, crowdfunding, by definition, involves obtaining resources from others. Unlike entrepreneurial work, crowdfunders are committed to acquiring resources from others without giving up project ownership or using personal savings – potentially changing the nature of the interaction with funders. Further, like, entrepreneurs, crowdfunders must organize production efforts to deliver rewards to funders.

Distributed work

Distributed work involves collaborating with a known but physically distributed group of individuals to accomplish a common goal [22]. To address the challenges of working distantly and online, workers must establish a mutual understanding of the work and determine the most affective mode of online communication [22]. 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 [22]. 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 [22].

The effectiveness of using such technologies depends on the pre-established culture of worker collaboration.

Similar to distributed work, crowdfunders must rely on personal and trusting connections with supporters. This way context still matters in crowdfunding work. In addition, creators use various web-based technologies to achieve common ground with their supporters when explaining their project idea and value. Unlike distributed work, creators typically do not know many of their supporters and often use a mediating platform to communicate.

Crowd Work

Crowd work involves many separate, usually anonymous, workers performing online tasks to accomplish a common goal, typically assigned by a requestor [17]. Unlike distributed work, requestors often do not know worker identities and assign tasks through a mediating online platform (e.g. Amazon Mechanical Turk). Crowd work can be voluntary or paid [17]. 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 [17]. 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 [17].

Crowd work requestors design tasks that motivate workers to participate. Similarly, crowdfunding project creators design campaigns that motivate supporters to donate funds and contribute feedback. In addition, project creators also typically do not know many of their supporters and communicate with them through a mediating online platform (e.g. Crowdfunding page). Unlike crowd work, crowdfunding supporters contribute money while crowd workers typically contribute labor in exchange for money.

Crowdfunding work is similar yet distinct from research on entrepreneurial, distributed, and crowd work. We use the research in these related fields build a comprehensive understanding of crowdfunding work in order to design support tools for this new practice.

METHODS

We performed a qualitative study of crowdfunding work through interviews with project creators and participant observation. While interviews informed our understanding of crowdfunding work, we realized this was no substitute to running a campaign ourselves. We describe methods for both our semi-structured interviews and participant observation.

Interviews

Participants

We interviewed 46 (12 women) crowdfunding project creators from three crowdfunding platforms—Kickstarter, IndieGoGo, and RocketHub—the most popular and successful platforms in the US [3]. 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). Approx-

mately 50% of project creators met their fundraising goal on at least one of their projects.

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 find that our sample of participants is representative of the crowdfunding population [36].

Procedure

We recruited interview participants through random and snowball sampling. Since we planned to use grounded theory analysis [12][28], we started the study with open qualitative data collection through semi-structured interviews. As theoretical categories emerged, we began to ask more focused questions to verify and expand on these emergent themes, such as preparing the campaign.

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 independent researchers and that personal information would remain anonymous.

Interview data collection lasted for 11 months with an average interview length of 30 minutes. All of the interviews were conducted over video conferencing or phone. Interviews were conducted during and after the campaign. Advantages of this research approach include collecting both reflective and in situ data. Disadvantages include biases from self-report [27].

Participant Observation

Participants

To understand crowdfunding work first hand, we began planning our own campaign in January 2012, four months after starting the interview data collection. Our project was to produce a poster and online booklet. Our team consisted of seven researchers including three undergraduate students, one masters student, two PhD students, and one professor. All members were affiliated with a large research university and were between the ages of 18-35. The campaign was everyone's first crowdfunding campaign.

Procedure

Planning the campaign lasted for five months and was considered a side project to our schedules of being full-time students and researchers. In order to keep track of our work, we created shared Google Documents to note the tasks, timeline, and responsibilities. We maintained an online team blog where we reported ideas, opinions, and concerns during all stages of the crowdfunding process. Furthermore, we created an online pin

board of crowdfunding related articles and websites. We also held weekly meetings to plan next steps. We consulted with professional graphic designers once every three to four weeks prior to launching the campaign to discuss the visual design of the poster and booklet.

We launched the campaign from June 15-July 15. We chose Kickstarter as our platform because of its widespread use. Our goal was to raise \$8,000 to pay for the graphic designers, printing, and mailing of our booklet and poster. We concluded the campaign with \$2,327. Because Kickstarter employs an All-or-Nothing funding model, our supporters' accounts were never charged.

Analysis

We collected 417 pages of transcribed interviews and 156 pages of participant observation blog posts. We used selective coding and analysis [27] 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 [20]. Data analysis for the participant observation began after the campaign was completed.

CROWDFUNDING WORK

From our ethnographic research using interviews with project creators and participant observation, we identify six main types of crowdfunding work: (1) *understanding* the opportunities and responsibilities of crowdfunding, (2) *preparing* campaign content and initial prototypes, (3) *testing* the campaign content and initial prototypes, (4) *marketing* the crowdfunding project to potential supporters, (5) *executing* the project by following through with campaign goals, and (6) *contributing* to the crowdfunding community with advice and mentorship. We find that not only creators do the work, but also supporters, mentors, consultants, and outsourced help.

Although the following sections describe types of work in a certain order, we acknowledge that they do not necessarily occur linearly. Rather, a type of work can occur in more than one stage of the crowdfunding project. We consider the three stages of the crowdfunding experience to be before, during, and after the campaign. The campaign is the time period when the project is visible on the crowdfunding platform and is eligible to accept donations. Participants see these three stages as distinct, each consisting of unique and overlapping types of crowdfunding work.

Understand

In order to understand the opportunities and responsibilities of crowdfunding work, creators weigh pro's and con's of crowdfunding, compare and contrast different platforms, and consult with others and online resources to understand responsibilities. Creators typically spend between one to three months on this type of work before the campaign. However, understanding crowdfunding can last indefinitely throughout and after the crowdfunding process.

Crowdfunding Work	Definition	Example
<i>Understand</i>	Understand opportunities and responsibilities of crowdfunding	Compare time commitment of crowdfunding to writing an grant
<i>Prepare</i>	Prepare campaign materials	Write and film campaign video
<i>Test</i>	Test campaign materials and project prototypes	Ask a friends and family about how to improve the campaign video
<i>Market</i>	Market the project	Post campaign link on Facebook and Twitter
<i>Execute</i>	Execute project goals	Build rewards and send them to supporters through USPS
<i>Contribute</i>	Contributing knowledge back to the crowdfunding community	Write a blog to share advice on the crowdfunding experience

Table 1: Table of crowdfunding work, definition, and example.

First, creators weigh the gains and losses of crowdfunding opportunities when deciding to crowdfund. Potential gains include relatively quick payment once the campaign is over, low barrier to entry, and being able to maintain control and reduce risk. Potential losses include time commitment and public failure. For instance, one creator explained why he chose crowdfunding over venture capitalism:

"I talked to banks, but they weren't willing to loan me any money. The only option left would be venture capital or crowdfunding, and the terms of venture capitalists are really unappealing. They end up taking a lot of your company, and making you do things that you don't want to do."

Many creators treat crowdfunding as a form of pre-order, which allows them to pursue the opportunity only if they have an interested audience. This reduces risk and differs from the typical entrepreneurial process of spending one's own savings to pursue a venture that may not pan out.

Creators also compare and contrast crowdfunding platforms in order to decide which one will best fit their needs. As described before, not all platforms have the same funding model. Some are Keep-What-You-Raise like IndieGoGo and RocketHub, while others are All-or-Nothing like Kickstarter. We chose to crowdfund on Kickstarter because it was more widely known among supporters and creators. Further, we thought the platform would generate more attention to our project.

In addition, creators consult with other experienced creators and perform research online to understand the responsibilities of crowdfunding work. While performing our own research, we found multiple online resources dedicated to crowdfunding, such as personal advice blogs and tutorials. Friends who knew of our initiative, also regularly sent us links to new webpages and articles related to crowdfunding.

Those that had connections to experienced creators reported setting up one-on-one meetings and exchanging emails to solicit advice. Others reported opportunities to observe the crowdfunding process first hand by collaborating with a pro-

ject creator, but not necessarily managing the whole campaign. One creator of a game project explained:

"I rode shotgun on a couple of Kickstarters...So, that was a nice dip the toe in way of approaching it."

Overall, creators understand crowdfunding work by weighing potential gains and losses, comparing different platforms, and researching responsibilities.

Prepare

Preparation for the crowdfunding campaign includes creating a video, project description, budget, and rewards structure. Creators accomplish this work by taking inspiration from other projects, assessing their audience, learning new skills, and outsourcing help. This type of work typically lasts three to six months before the campaign.

First, creators often look to similar crowdfunding projects to get reward ideas, decide the funding goal, and gain inspiration for their video. For instance, one creator of a photography project realized that supporters often chose rewards that offered a meaningful connection:

"I was reading somebody's Tumblr that was talking about another photo project... I kind of came up with a lot of my rewards though that. Like the \$50 reward is you get a personal message that goes on the camera."

We looked to other crowdfunded poster projects for insight into how much we should raise. Additionally, following advice from an online blog, we listed out individual names in our network and estimated the contribution each person was likely to make.

In addition to creating funding goals, creators also learn new skills, such as budgeting, management, and videography, to complete preparation work. Two members of our team learned Final Cut Pro and iMovie while creating the video, but failed to reach the professional quality they desired. They created three versions of the video and spent 250 hours filming and editing. A creator of a board game project describes

similar effort in his attempt to learn new budgeting and management skills:

"I went to art school. I don't know how to use a spreadsheet. But, I had to figure out how do all that stuff just because if you're going to do a Kickstarter...you have to tap into these resources that are way outside of most peoples areas of expertise, so talking to international vendors, figuring out shipping, and tariffs. All that junk, like, I don't know, and I still am learning it."

Creators report using a variety of tools including Google Docs, Excel, and pen and paper to plan their budget. Other creators choose to rely on outsourced free or hired help. A creator of a children's food project described how she relied on an acquaintance to help her create the 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."

During campaign preparation, creators and outsourced help accomplish the work involved. Because campaign materials have to be clear, persuasive and well designed, creators often risk the financial strain to hire the outside help. The campaign material is the main touch point between creators and potential supporters and is possibly the deciding factor when supporters choose whether or not to donate. Preparation work includes looking to other projects for guidance, to learn relevant skills, and outsourced help.

Test

Creators test their campaign material and project prototypes by asking for feedback from personal and extended networks. Testing is important because, once the campaign has started, there is little time and opportunity to make revisions. Because the campaign lasts for only a certain time period, the creators choose to spend the majority of their efforts on marketing instead. The amount of testing varies from creator to creator, ranging from one month to throughout the crowdfunding process of 1-2 years.

Creators first look to their personal network, such as friends and family, to give initial feedback. When testing our video and campaign page content, our peers told us that the video was too long and that the description "sounded like an infomercial". Despite the difficulty of hearing criticisms, we found that we preferred getting judged in a private setting with close friends rather than sharing our materials with a public audience that could reject our 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."

Other creators report 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.'"

While running our campaign, we attempted to involve our supporters in editing our booklet content in a public Google Document. However, few were interested in participating. Similar to findings on supporter motivations to donate funds [4], we find that supporters also need to be motivated to provide feedback.

Recognizing the need to incentivize feedback, RocketHub's SciFund Challenge, requires creators to provide feedback on other projects prior to their campaign launch. One creator described how she used this 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."

Creators test material and prototypes with weak ties and strong ties, face-to-face and online. Testing campaign material and project prototypes acts as type of soft launch to the campaign and final product or service.

Market

Creators market their projects through publicity efforts, effective communication, and maintaining supporter relations. Marketing the project is seen as the most time consuming type of work and takes 2-11 hours a day during a live campaign that usually lasts 0.5-2 months.

First, the majority of marketing work is publicity efforts, which includes reaching out to personal networks on and offline and contacting news media. Creators first turn to their personal network for initial support. For example, a creator of a music project describes how he emailed everyone he knew asking for support:

"I basically asked all my friends. I asked everybody I'd ever met in my life, like even ex-girlfriends, if they wanted to be part of it."

It is common practice to send at least one email a week to personal connections reminding them to support the campaign. In an email to extended family members, one of our team members wrote the following:

"I would greatly appreciate if you could donate to my project on Kickstarter (I star in the video!). We need to raise \$8,000 in 28 days, and if we don't make it then we don't get

any of the funds. So please help! Whether or not you can donate, I would greatly appreciate if you could help me spread the word about my project by forwarding this email."

In addition to asking for donations, creators ask their personal network to employ viral marketing strategies of spreading the work. For instance, a creator of a food project described how he asked his friends with the most connections to post the project link on their social media pages. One creator of an archeology project described how posting on social media helped her gain widespread publicity:

"[My project] was picked up on Twitter by a British science journalist, and so he pitched it to CNN, and then CNN covered it. And Forbes covered it, and then everything just went crazy after that."

Our team collectively spent 370 hours marketing the project during the live campaign, posting on Facebook and Twitter and contacting 46 blogs and websites. We raised \$2,327 by the end of our campaign, which meant that our team of seven was collectively raising \$6.30/hour or \$0.90/hour/person. In the end, we were published on four blogs and featured on one podcast. We also posted 130 posters in shops and stores in the local area. Out of all these strategies, we received the most donations from direct e-mail solicitation and campaigning on Facebook. Like many other creators we interviewed, we overestimated the effectiveness of our marketing strategies and the amount of interest our project would produce. Another project creator explained his frustration with online marketing:

"It's a lot more competitive to get your idea out there than it sounds. It sounds really easy to be like, 'Ok, I'm going to come up with this project and post it all over the Internet, and people are going to love it!' And it's not that easy because people [are] so overwhelmed by everything else that you see and hear and watch on a daily basis."

We noticed that creators who expressed such difficulties typically did not have prior fundraising experience or an initial audience. We found that creators with an established career in the arts had less trouble marketing their work than creators of scientific or technology projects because art project creators reported having experience organizing public fundraising efforts throughout their career. This meant that they felt comfortable asking their friends and family for support and had already developed an interested audience prior to launching their campaign. Creators of science and technology projects, however, reported getting most of their previous financial support from grants, which involves little interaction with the public. Therefore, they had expressed having more difficulty asking for help publicly and building an initial audience.

Creators that manage to accrue an audience find that they need to maintain supporter relations by giving project updates and addressing questions and concerns. After our team member sent an email to her extended family, she received questions, such as "Is it tax deductible?"

By addressing questions and posting regular updates, creators maintain supporter relations and uphold a reputation as a responsible and accessible project creator. A creator of a game project described how he updated his supporters to keep them informed on progress:

"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."

Creators accomplish marketing work through publicity efforts, effective communication, and maintaining supporter relations. Creators typically rely on web-based tools, such as social and news media pages and e-mail to accomplish marketing work. However, creators often underestimate time commitment and audience size needed to market their campaign effectively.

Execute

Executing the project consists of producing and sending rewards. Project execution can occur during all stages of the campaign, and creators typically do not finish executing the project until six months to a year after the campaign is finished.

Creators often collaborate with outside producers and designers to execute their work. For example, one creator describes how crowdfunding has established a unique "meta-economy" by having creators collaborate with people with needed skill-sets 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."

One creator who did not have the time or skills to disseminate rewards hired a mailing assistant:

"Whenever you do a huge shipping, the post office loses [stuff] all the time, and you'll end up having to re-mail stuff over and over and over again. 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 of it."

Those who do not hire outside help and choose to produce and send the rewards themselves report being overwhelmed with the work. A creator of a publication described how she was unprepared to produce on a large scale:

"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."

In executing her project, she had to manage 70 contributing designers for her cooperative publication and, to the dismay of

her supporters, could not send the rewards until months after her promised deadline.

While creators may have had experience executing products to a few customers, they do not realize the amount of extra work in producing and disseminating on a large scale. Therefore, to avoid being overwhelmed and disappointing supporters, many creators choose to outsource production and shipping help.

Contribute

While some would consider the previous five types of work to fully describe crowdfunding, we also take into account contributing knowledge 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 online resources, such as blogs on their experience, or offering one-on-one help in person or through online communication tools. 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."

Another creator described how supporting each other financially is more than just about 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."

She described how crowdfunding served as public validation for her work, something that creators cannot measure when being funded by a single investor. Creators describe the crowdfunding community as a mutually supportive rather than competitive space.

Creators also support each other by sharing crowdfunding advice with novice creators. One board game creator explained how he created a pin board where he posts answers to 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."

Mentors provide advice at all stages of the campaign. While this mentor provides advice for the beginning stages of the campaign through his pin board, another mentor finds that he provides advice on the prototyped campaign material:

"Every week or so, somebody emails me asking questions about Kickstarter, like, 'My project got rejected by Kickstart-

er, how do I redo it?' And I'm like, 'You need to change this, this and this.'"

Mentors are not always experienced creators. Sometimes, people establish themselves as crowdfunding consultants if they have experience in any type of crowdfunding work, such as marketing. Even though we were unable to reach our fundraising goal, our role as crowdfunding researchers has also established us as mentors in the crowdfunding community. Creators have asked us to review their videos and provide general tips on crowdfunding work. At one point, a group of product designers affiliated with a large university asked us to host a videoconference session to give crowdfunding advice.

Overall, we find that contributing knowledge and financial resources back to the community is critical for the growth of crowdfunding. The act of contributing sustains an ecosystem of support. From helping them understand the responsibilities of giving financial help, contributing back has turned crowdfunding into a community practice.

DISCUSSION

In our ethnographic study of crowdfunding work, we seek to understand what is the work, how is it done, and who does it. We uncover six categories of crowdfunding work: *understand* the opportunities and responsibilities, *prepare* the campaign material, *test* the campaign material and initial project prototypes, *market* the project, *execute* the project goals, and *contribute* knowledge back to the crowdfunding community.

In determining how the work is done, we find that crowdfunding work shares similar practices and difficulties to entrepreneurial, distributed, and crowd work. For instance, in understanding crowdfunding, project creators act similarly to entrepreneurs when weighing the gains and losses of the work involved [26]. Our findings show that creators typically underestimate the potential losses, a natural human tendency [15], and later find themselves overwhelmed with various commitments. Creators must reach their funding goal by a certain date and disseminate rewards within the time period they specified to supporters, thus causing them to feel pressured to accomplish a lot of work in a short amount of time [23].

Similar to distributed workers [22], creators must use web-based technologies to communicate with distributed supporters in marketing, testing, and executing work. Creators use various modes of online communication including email and social media to answer questions and keep supporters updated on project progress, which can become overwhelming when answering to hundreds or thousands of people. Furthermore, although creators acknowledge the usefulness of testing [30], few attempt to do it on a large scale for fear of public rejection [9]. One of the biggest difficulties of distributed crowdfunding work is coordinating with all the supporters during distribution, as creators must organize shipping information and efforts on a large scale. Similar to difficulties of crowd work, creators report having trouble motivating the crowd to provide feedback and funds [17].

The press perpetuates the myth of the successful creator as a “lone genius” launching his or her new project alone from a computer in the basement. We find that crowdfunding work is actually about collaborating with others both online and face-to-face [34]. The practice of relying on others for outsourced help, mentorship, and feedback has created a meta-economy where the crowd funds the work and creators collaborate with helpful individuals through a mutually beneficial partnership to complete the work.

Although creators have already started using outsourced help to overcome various difficulties, we call for the creation of tools to support crowdfunding work on a larger scale. Outsourced help only benefits the creator who hired the help, while an online tool could potentially benefit all creators. Already, there has been a budding of web-based crowdfunding tools created by non-academics. However, the design of these tools is not based on research, and they are typically built on insubstantial observations. Consistent with values in human-computer interaction, we believe crowdfunding tools should be informed by a thorough understanding of the needs of the users [21].

DESIGN IMPLICATIONS

Designers can create tools and practices that will help project creators accomplish each type of crowdfunding work. For example, since our findings show that creators often underestimate the work involved in crowdfunding, designers can create tools to help creators assess their capabilities prior to crowdfunding. This tool would help creators better *understand* the skills needed and the potential time commitment before embarking on the crowdfunding venture.

Once creators understand what they can and cannot do well, they need to locate ways to accomplish tasks that are outside their capabilities. Creators encounter work outside their skill-set in *preparation*, *marketing*, and *execution*. Two potential design solutions to help creators accomplish such tasks include creating a match making service to connect creators with outsourced help and designing a crowdfunding curriculum for teachers to teach students in technology courses. The former requires more workers and funds to accomplish the task, but involves a smaller individual time commitment since no new skills need to be learned. The latter requires more time commitment to learn the skills, but creators will not have to pay or rely on outsourced help in future crowdfunding work [5]. Already, crowdfunding curriculums have been created at Carnegie Mellon University and Northwestern University [10].

In addition, creators also report difficulty with getting feedback from a motivated audience. Because testing one’s work provides insight on how to improve quality [30], one potential design solution is to create a service that helps creators *test* their work by outsourcing feedback to a large crowd, such as through Amazon Mechanical Turk. Initial development and pilot testing suggests that such a tool is possible.

Designers could also facilitate *understanding* and *contribution* by designing a knowledge management system for creators to find and share best practices and failed efforts on crowdfunding. Sharing knowledge will allow creators to innovate new ways to run more effective crowdfunding campaigns [13]. Currently, creators report having to locate crowdfunding blogs 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. We strive to create tools that support all types of creators, including people who are not enmeshed in a large artistic community, such as scientific researchers and engineers. If all knowledge were kept in a centralized space, creators could more easily find advice catered to their project, while each mentors’ advice would be made available to a larger audience.

Various design solutions exist to help creators accomplish crowdfunding work. We present a few examples that we believe will ease the work process during its most difficult points.

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 previous experience. When considering future attempts to crowdfund, one creator told us that 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 told us that 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. In this study, we find that creators of artistic projects tend to report less difficulties crowdfunding than creators of science projects. Creators of artistic projects tell us they have 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 ex-

pressed reservations about sharing their work with the public, fearing idea theft, public rejection, and having to ask for help publicly [4]. By drawing from work on costly public action [9] and failure aversion [15], we hope to further uncover how emotion affects crowdfunding work.

CONCLUSION

As the popularity of crowdfunding grows, project creators continue to push the limits by raising more and faster. This public perception of quick and easy funding has convinced many people to try crowdfunding for themselves. In this ethnographic study of crowdfunding work, we find that many people underestimate the work involved and find themselves overwhelmed with tasks that are time consuming and outside their skillset. To overcome such obstacles, a community of collaboration has evolved where creators rely on supporters, mentors, and outsourced help to accomplish the work. We hope to build on this environment of mutual support by calling for human computer interaction designers to create crowdfunding support tools and systems that not only help creators assess their capabilities, but also to help them find ways to achieve the work outside their skillset.

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