

CHAPTER

3

Crowdfunding: How and Why People Participate

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ABSTRACT

Purpose – We are interested in how and why people use or take part to crowdfunding projects.

Methodology/approach – Over the past four years, we have interviewed over 120 crowdfunding requesters and supporters of over 15 project types from dance to technology to publishing.

Findings – The key contributions of this research are: An understanding of the work involved, an understanding of motivations for participation, and an understanding of how the design of platforms influences engagement.

Originality/value – We adopt a computer-supported cooperative work approach from sociology, computer science, and design to provide a new perspective to researchers who seek to understand user behavior, motivations, and the mechanisms in place to support engagement with crowdfunding technology.

Keywords: Crowdfunding work; motivation; engagement; platform design

Introduction

Crowdfunding is growing rapidly (Lambert & Schwienbacher, 2010). The popular press heralds crowdfunding as a way for people,

typically with limited access to capital, to raise money for ventures from a crowd, a distributed network of individuals, to support them. The popular press celebrates its potential to spur new ventures that can fuel the economy (Needleman, 2011).

While researchers have studied what factors lead to campaign success (Greenberg, Pardo, Hariharan, & Gerber, 2013; Mitra & Gilbert, 2014; Mollick, 2013), the financial nature of crowdfunding has obscured a critical and overlooked investigation of who participates in crowdfunding (Agrawal, Catalini, & Goldfarb, 2011), the work involved (Hui, Greenberg, & Gerber, 2014; Solomon, Ma, & Wash, 2015; Wash & Solomon, 2014; Xu et al., 2014), and motivations for participation (Gerber & Hui, 2013). Over the past four years, we have interviewed over 120 crowdfunding requesters and supporters of over 15 project types from dance to technology to publishing. We have presented our work to diverse audiences, including creators of major crowdfunding platforms, researchers of social technologies, and novice and expert crowdfunders, all the while collecting valuable stories and feedback. We adopt a computer supported cooperative work approach from sociology, computer science, and design to provide a new perspective to researchers who seek to understand user behavior, motivations, and the mechanisms in place to support engagement with crowdfunding technology.

The key contributions of this research are:

- An understanding of the work involved
- An understanding of motivations for participation
- An understanding of how the design of platforms influences engagement.

Crowdfunding is a critical new area of study for economists (Mollick, 2013), sociologists (Ward & Ramachandran, 2010), and computer scientists (Mitra & Gilbert, 2014; Wash & Solomon, 2014; Xu et al., 2014), as it is a computer-mediated phenomenon that changes the way people interact with each other and how resources are exchanged (Greenberg & Gerber, 2015; Greenberg, Hui, & Gerber, 2013). By understanding the how and why people participate and how they interact, we can identify opportunities to refine and redesign crowdfunding platforms to improve the user experience and to better recruit and sustain participation in this rapidly growing community (Gerber & Hui, 2013; Kraut & Resnick, 2012).

We organize this chapter into four sections. The first section examines the landscape of existing crowdfunding participants and platforms. The second section reveals the work involved in crowdfunding. The third section identifies motivations and deterrents for participation from both the requesters' and supporters'

perspective and the role of platform design. In the fourth section, we extrapolate our findings to suggest future directions for research in this emergent area.

Landscape of Existing Crowdfunding Participants and Platforms

Since the first crowdfunding platform was launched in 2001 (Knowledge @ Wharton, 2010), crowdfunding has supported a wide range of project types and fundraising goals, from video game designers who raised more than \$1,000,000 from 60,000 supporters to create a game console (Ouya, 2012), to an architect who raised \$4,000 from 100 people to improve a local park (Raimist, 2011), to a researcher who raised \$10,000 from 170 people to study ancient roman DNA (Killgrove, 2011), to a man raising money to stop elephant and rhino poaching (Peterson, 2015).

Online crowdfunded projects vary in scope and span across many fields, including art, comics, dance, design, fashion, film, food, games, music, photography, publishing, technology, theater, science, and service. Amounts raised range from a couple dollars to over \$20 million dollars (Kickstarter Stats, 2015) with funding records being broken almost every year. The percentage of people who reach their goal on the most popular crowdfunding platform, Kickstarter, is 38% (Kickstarter Stats, 2015).

Today, there are 800 platforms across the world, which together channeled an estimated \$5 billion in donations (Massolution, 2015). Many of these platforms specialize by project type such as creative projects (Kickstarter, 2015), education (Donors Choose, 2015), research (Benefunder, 2015), personal celebrations, and concerns (Tilt, 2015).

Crowdfunding platforms differ in their use of terminology, referring to people who request funds as “requesters” “creatives,” “designers,” “inventors,” “researchers,” “activists,” or “teachers” depending on the platform’s focus (Lambert & Schwienbacher, 2010). People who pledge funds may be referred as “backers,” “fuelers,” or “funders” (Lambert & Schwienbacher, 2010). For clarity, in this chapter, we refer to people who request funds as “requesters” and people who provide resources as “supporters.”

Crowdfunding platforms have started all over the world and are funded by supporters both local and distant (Agrawal et al., 2011). On average, supporters are located significantly farther geographically from requesters than traditional investors, such as venture capitalists and investors. However, more local supporters tend to donate more funds (Agrawal et al., 2011). Furthermore, the types of

projects tend to be correlated with the cultural products of the cities in which the requesters reside (Mollick, 2013). For example, a significant proportion of campaigns out of Nashville, Tennessee, “nick-named Music City, USA,” were music related, whereas a significant portion of campaigns out of Los Angeles, California, home of the entertainment industry, were film-related (Mollick, 2013). However, despite the ability for almost anyone with internet access to start or fund a campaign, our research also hints at a lack of gender and racial diversity in the top grossing campaigns. Our survey of the most successful Kickstarter campaigns through 2014 suggest that Caucasian men in their 30s led the majority of top growing projects in crowdfunding.

Despite the diversity of the requesters, supporters, platforms, and types of projects proposed, all projects require similar work to run a campaign. The next section describes the work involved in crowdfunding across platforms.

Work Involved in Crowdfunding

In 2010, Max and his friends from high school hosted a New Year’s Party in Chicago. To keep their guests occupied, they came up with a party game using 3x5 notecards where players would match a description on one card to an object or person labeled on another. The game was an immediate hit. Motivated by this initial success amongst friends, Max took some time off as a graphic designer to prepare and launch a Kickstarter project to manufacture the card game. Even though he provided the option to download the game and print it out for free, he still raised over \$15,000 from over 700 people over 30 days, substantially exceeding his goal of \$4,000. Max fulfilled his promise to supporters by manufacturing and shipping the card game to over 700 people. Soon after, the game, known as “Cards Against Humanity,” passed from party to party, and is now the top purchased Games and Toys product available on Amazon.

While crowdfunding platforms have provided a new avenue for novice creatives to seek resources to create a new product or service, frequently hearing success stories of people quitting their jobs to raise a fortune on Kickstarter has painted a roseate view of crowdfunding work. While a select few have been able to leverage their network for fundraising in order to carry out their project goals, whether it is to create a documentary, host a dance performance, or manufacture a new tech product, the majority of project requesters have little idea of what is required in the day-to-day responsibilities of preparing and running a crowdfunding campaign. Through interviews with 47 requesters, we have identified five types of

Table 1: Table of Crowdfunding Work, Including Definitions, Role of Community, and Types of Technologies Used throughout the Work Process.

Crowdfunding Work	Definition	Role of Community	Examples of Technologies Used
<i>Prepare</i>	Prepare campaign materials	<ul style="list-style-type: none"> – Provide example projects as models – Provide general advice blogs – Give one-on-one advice – Offer specialized skill expertise 	<ul style="list-style-type: none"> – Crowdfunding platform search – Third-party project search platforms (e.g., Kicktraq) – Blogs
<i>Test</i>	Test campaign materials	<ul style="list-style-type: none"> – Give feedback on campaign materials – Provide opinion on design direction 	<ul style="list-style-type: none"> – E-mail – Crowdfunding campaign page – Social networking platforms (e.g., Facebook, Twitter) – Pre-campaign project platforms (e.g., Prefundia)
<i>Network</i>	Market the project by using campaign materials	<ul style="list-style-type: none"> – Spread the word – Build an audience 	<ul style="list-style-type: none"> – Social networking platforms (e.g., Facebook, Twitter) – Online forums (e.g., Reddit)
<i>Follow through</i>	Follow through with project goals and send rewards	<ul style="list-style-type: none"> – Provide manufacturing or shipping support – Offer specialized skill expertise 	<ul style="list-style-type: none"> – Online skill marketplaces (e.g., Upwork) – Manufacturing support platforms (e.g., Backerkit, Fulfillrite, Teelaunch)
<i>Reciprocate</i>	Reciprocate resources back to the crowdfunding community	<ul style="list-style-type: none"> – Provide advice – Provide financial resources 	<ul style="list-style-type: none"> – Blogs – Personal webpages – E-mail – Crowdfunding platform donations

Types of crowdfunding work are not necessarily performed sequentially and can occur at the same time (Hui et al., 2014).

crowdfunding work: Preparing the campaign material, testing the campaign material, networking, following through with campaign goals, and reciprocating resources back the crowdfunding community (Hui et al., 2014). See Table 1.

These tasks are not performed linearly nor distinct from one another, but often happen at the same time with requesters iterating on certain tasks over the course of the crowdfunding experience. Figure 1 illustrates a typical crowdfunding timeline over the course of one year.

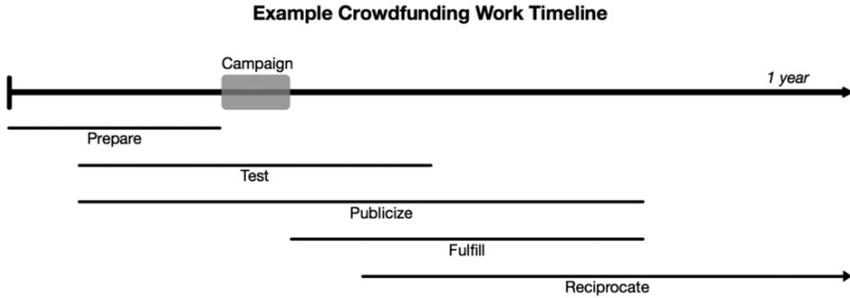


Figure 1: Typical Crowdfunding Work Process, Which Shows How the Campaign Is Only One Small Part in the List of Crowdfunding Responsibilities.

Identifying types of crowdfunding work, as well as how one's surrounding community and social technologies provide support, help us understand this new ecosystem to design better crowdfunding tools and systems that support the growth and implementation of new innovations.

CROWDFUNDING WORK: PREPARE

Requesters *prepare* campaign material by creating a project page, which typically includes a title, video, description of planned use of funds, funding goal, campaign duration, and reward descriptions. Requesters completed required and recommended fields, and if the project is approved by the platform, the platform presents their work in a preformatted page. When viewing the pages, visitors can choose to donate money through existing web-based payment systems like Amazon Payments and Paypal.

Requesters refer to tutorials for preparing and running crowdfunding campaigns provided by platforms as well as informal online blogs, social media, and e-books (Hui et al., 2014). By looking at these online resources, requesters can find inspiration or compare and contrast their own campaign materials with others (Hui et al., 2014). For instance, one requester raising funds for a photography project around homeless life in Detroit, Michigan described looking at other photography campaigns for reward ideas. Others describe taking similar language or writing structures to make their campaign description more understandable. This behavior is supported by research which find that certain phrases, such as “to build this” and “a personal tour” are used more commonly in successful projects, whereas phrases like “provide us” and “signed postcard” were used more commonly in failed projects (Mitra & Gilbert, 2014).

However, most crowdfunding platforms do not offer particularly detailed project search options. For instance, people cannot easily

search for failed tech projects that aimed to raise between \$4,000 and \$5,000 on Kickstarter. Being able to find a project with specific campaign features helps requesters create their own campaign by learning from the successes and failures of others (Hui and Gerber, *manuscript in preparation*). Projects that are similar in nature are particularly useful because it allows requesters to find inspiration that is most relevant. For example, a first time filmmaker raising funds for a new movie may not be able to achieve the same video quality as professional actor, Zach Braff, who has a much larger operating budget and eventually raised over \$3 million in just 30 days (Braff, 2014). Because of these search limitations, members of the crowdfunding community have created third-party platforms, like Kickspy.com, which scrape project information from crowdfunding platforms like Kickstarter and allow people to perform more fine-grained searches. Kickspy has since shut down due to pressure from Kickstarter. Understanding how requesters learn from each other will help identify opportunities for platform and tool improvements that enhance their efforts to plan and prepare their crowdfunding efforts before the campaign starts.

CROWDFUNDING WORK: TEST

Requesters *test* campaign material both before and during the campaign (Hui et al., 2014). Before the campaign, requesters typically seek feedback from people they trust most like close friends and family in order to minimize public criticism. While it may be easier to ask one's best friends or parents for feedback, efforts to maintain positive relationships hinder people from being honest in a non-anonymous setting (Dell, Vaidyanathan, Medhi, Cutrell, & Thies, 2012; Tohidi, Buxton, Baecker, & Sellen, 2006). Others also choose to share campaign material with extended networks of people who may have relevant knowledge, such as on Reddit forums or listservs.

While requesters describe knowing the importance of feedback before the campaign starts, they are hesitant to ask for help before the campaign and then again for funding when the campaign is live. These contrasting goals of building a good campaign through iterative feedback and reluctance to use social capital pose a difficult problem for many requesters. This need for better feedback options highlights an opportunity for future crowdfunding support tools to support frequent and iterative feedback at all stages of the campaign without overusing social capital (Greenberg, Easterday, & Gerber, 2015).

Requesters also test their campaign products during and after their campaign to seek design feedback and project direction. For instance, a product designer of a new foldable snowshoe had his supporters vote for the shoe strap color. Another project requester raising funds for a poetry book posted a new poem each day to get

feedback on his writing. In addition to directive feedback, project requesters also receive praise and encouragement which has shown to boost self-efficacy – confidence in oneself and a needed character trait in entrepreneurial work (Harburg, Hui, Greenberg, & Gerber, 2015).

CROWDFUNDING WORK: PUBLICIZE

Publicizing involves growing one's support network, maintaining one's social networking pages, and reaching out to people who may provide funds, connections, or services. Requesters reach out to potential supporters through diverse channels, including the crowdfunding platform itself, e-mail, and online social media, as well as offline communication technologies and in-person requests (Hui et al., 2014). They gauge public interest in their project through signals of social approval, such as the number of Facebook "likes" for a project page, which are correlated to fundraising success (Moissejev, 2013).

In order to successfully publicize their campaign, Requesters must understand their network capabilities, activate network connections, and expand network reach (Hui, Gerber, & Gergle, 2014). This includes being able to estimate how many online connections would be able give funds and around how much, convincing these people to give funds or share the campaign link, and connecting to new people through these initial links. Many crowdfunding project requesters do not realize that having a large fan base is correlated with higher funding success (Mollick, 2013) and believe that if they simply post on social media that they have an equal chance of raising as much money as someone who is already popular offline. This is consistent with prior research, which describes how people often have an incorrect mental model of their online audiences (Bernstein, Bakshy, Burke, & Karrer, 2013; Litt, 2012). To support this stage of work, researchers have started to build support tools that help crowdfunders identify likely donors on social media (An, Quercia, & Crowcroft, 2014).

Requesters are also surprised to learn that crowdfunding can provide not only money but also access to domain expertise and a community of support (Gerber & Hui, 2013; Hui et al., 2014). Reaching the right supporters in one's social network is critical and can lead to better jobs, faster promotions, and access to more resources (Burt, 1992, 2004). Fifty-six percent of projects fail to meet their goal, and previous research implicates publicity efforts as a major factor contributing to these failures (Hui et al., 2014). Even after supporters give funds, requesters must continue communicating with them through social media posts and campaign updates. Xu et al. found that the type of update theme, such as whether it

was a progress report or answering questions, had more predictive power of the campaign success outcome compared to update features, such as number of words, and project features, such as number of images (Xu et al., 2014).

An analysis of 81 popular online crowdfunding platforms reveals the exchange of various resources including money, love, information, status, goods, and services through mediated, unmediated, and hybrid structures (Greenberg & Gerber, 2015; Greenberg et al., 2013). Requesters of science crowdfunding projects find this to be a unique way to involve citizens in their research process because they are motivated to share their scientific process and initial data in a public-friendly format (Hui & Gerber, 2015). Requesters of design projects like building more personal relationships with their future users (Hui et al., 2014).

CROWDFUNDING WORK: FOLLOW THROUGH

Once the campaign is over, requesters who receive funds *follow through* with their proposed project goals by manufacturing the proposed product, carrying out the proposed event, and/or shipping rewards. This involves producing and delivering the promised rewards and may last up to a year (Hui et al., 2014). Rewards range from having one's name acknowledged in the movie credits, to getting the new crowdfunded product, to receiving a simple "thank you" e-mail from the requesters. Many requesters describe being ill prepared for this stage because they were entirely focused on raising the funds and running the campaign, that they failed to adequately prepare for actually doing the project when the campaign was over. Researchers find that over 75% of requesters deliver their rewards late (Mollick, 2013). Those who figured out manufacturing and shipping logistics before the campaign faced few challenges, but these requesters also tended to be more experienced in entrepreneurship. For instance, one product design requester described how he had already manufactured all of his products before the campaign and was using Kickstarter as a way to collect orders. However, most crowdfunding requesters lack this expertise or do not have the funds to perform their project goals, which is why they turned to crowdfunding in the first place.

In order to support novice project requesters, third-party platforms that support manufacturing and shipping of rewards have started to form. For instance, the platform Backerkit will "send more effective surveys, manage backer information, optimize and automate shopping, and boost project sales" in exchange for a percentage of the amount raised in a crowdfunding campaign (BackerKit, 2015). Teelaunch, another reward fulfillment platform promises to ship shirts to backers within 2–3 days after the

campaign has ended and describes its purpose as, “Everyone needs a t-shirt guy, let Teelaunch be that guy for your next crowdfunding project” (Teelaunch, 2015). While using these services cost extra money, many requesters with little manufacturing and shipping experience realize that the time they save organizing contact lists, preparing shipping material, and transporting boxes to shipping facilities while keeping supporters happy, is often worth the cost.

CROWDFUNDING WORK: RECIPROCATE RESOURCES

As researchers studying online communities, we seek to understand how individual efforts contribute to maintaining a healthy and sustainable community. While many would consider the follow through stage as the last type of crowdfunding work, we see efforts to *reciprocate resources* back to the crowdfunding community as another type of work (Hui et al., 2014). This could range from donating to other projects to giving advice to novice crowdfunders who reach out via e-mail or message boards (Greenberg & Gerber, 2015; Greenberg et al., 2013). Some experienced crowdfunders have become known in the community as go-to mentors (Hui and Gerber, *manuscript in preparation*). For instance, one experienced crowdfunder was being asked so many questions that he put together a Pinterest board with articles that answered commonly asked questions. Another experienced crowdfunder created a set of Google Documents that outlined best practices for writing e-mails to supporters or designing one’s campaign page. Others choose to talk to help-seekers one-on-one through video calls or in person.

PROFESSIONALIZATION OF CROWDFUNDING

When crowdfunding first emerged, the five primary types of work described earlier were completed by the requester. However, over the last decade, crowdfunding is becoming increasingly professionalized, potentially raising the expectations for participation and rate of failure. A host of new services are rising up to support the proliferation of crowdfunding activity. Professionals are now paid to create pitch videos, manage communications, and distribution, which novices are often not able to employ given limited capital. We hypothesize that, as the bar for performance inches higher and higher, would be entrepreneurs who are unable to perform at this level or have funds to hire professionals will be crowded out. Continued lack of diversity and rising barriers to entry challenge one of the initial promises of crowdfunding, which was access to resources to novice innovators who lack connections.

PSYCHOLOGICAL EXPERIENCE OF PARTICIPATION

Online systems influence skill development and perceptions of ability to do innovation work by allowing people to gain mastery experiences, see successful role models, work closely with peers and mentors, and engage in direct conversation with people interested in the project through online and offline conversations (Harburg et al., 2015). Crowdfunding work is unique from other project and entrepreneurial ventures because successes and failures are made public on the Internet throughout the process. While a product designer who failed to meet his production goals may fail in the eyes of his angel investors, product designers on crowdfunding platforms have to answer to hundreds or thousands of supporters. This public nature of crowdfunding has both positive and negative effects (Greenberg & Gerber, 2014; Harburg et al., 2015).

Unlike performing work in a private setting, crowdfunders like being supported by friends, family, and their extended networks (Harburg et al., 2015). One requester described the experience like being in a marathon where people were cheering them from the sidelines. Another requester who failed to meet his funding goal decided to continue working on the project because supporters pushed him to keep trying. Overall, crowdfunding can boost self-efficacy by helping novice creatives build new skills, seeing similar others succeed, and providing various avenues to receive public support (Harburg et al., 2015). Crowdfunding platforms also maintain records of successful efforts to which innovators may refer back to be reminded of past achievements.

However, performing project work publicly can also reduce self-efficacy because people must ask for money and could fail publicly in front of friends and family (Harburg et al., 2015). One requester described the experience as “glorified begging,” whereas others decided they would never crowdfund again because of the workload and mental energy. Another requester for a tech project canceled his project a few days after he launched because he did not think he would meet his funding goal and did not want to face public humiliation. While public failure can be disheartening, work on re-launching after failure shows that people learn from their previous mistakes and often go on to running a successful campaign the second time around (Greenberg & Gerber, 2014).

As is expected in online communities, requesters must be transparent about their goals and aspired outcomes under a specific deadline through their work. Platforms also provide “dashboards” for requesters to monitor their progress and receive e-mail notifications when someone has contributed to the campaign. This allows supporters to encourage requesters by “Liking,” and “Sharing” work through social media. Moreover, our earlier research suggests

Table 2: Motivations and Deterrents to Crowdfunding Participation.

	Motivations	Deterrents
<i>Requester</i>	Raise funds Expand awareness of work Form connections Gain approval Maintain control Learn new fundraising skills	Inability to attract supporters Fear of public failure and exposure Time and resource commitment
<i>Supporter</i>	Collect rewards Help others Be part of a community Support a cause	Distrust of requesters' use of funds

that requesters feel especially supported when supporters not only write comments and “like” their projects, but when they financially back their project or as one crowdfunder describes it, “[putting] money where their mouth is.” The feeling of support was enhanced when the support came from outside one’s social network.

Motivations and Deterrents for Participation

While people are certainly motivated to raise funds, they are also motivated to expand awareness of their work, maintain control over their work, learn new skills, and approval in a community of practice (Gerber & Hui, 2013). Just as motivations for requesters vary, so do motivations for participation vary among supporters. Motivations include a desire to collect rewards, help others, support causes, and be part of a community. Deterrents include the inability to attract supports, fear of public failure and exposure, and time and resource commitment. While we categorize motivations and deterrents as distinct from each other, in reality, they are interrelated (Reiss, 2004). We discuss motivations in the order of prevalence for requesters and supporters (Table 2).

MOTIVATIONS TO BECOME A REQUESTER

Requester motivation: Raise funds

Requesters are motivated to use crowdfunding platforms because it provides an easy, efficient, and organized way to solicit and collect financial support from many people in a distributed network. By using web-based technologies, such as online payment systems and social media, requesters are able to market and solicit resources

safely and easily through crowdfunding platforms (Gerber & Hui, 2013). A requester of a theater project described, “[Crowdfunding] was good for us because we didn’t have a way to collect money.” Crowdfunding is particularly useful for people who are unable to get financial support from traditional funding sources, such as banks, angel investors, venture capitalists, and foundations. Instead of raising a large sum of money from one person or organization, requesters report being able to raise similar sums of money through a large number of supporters contributing small sums. A requester of an educational toy explained, “Instead of having one or two angel investors ... you have like 50,000 micro-investors.” And a game designer described the process as “democratic.” In addition, unlike applying for grants, which are not always approved, certain crowdfunding platforms, such as IndieGoGo and RocketHub, allow requesters to keep all of the funds they raise. Further, the funds are processed immediately.

Requester motivation: Expand awareness of work

Not only are requesters motivated to raise money, they are also motivated to expand awareness of their work by publicizing their crowdfunding project (Gerber & Hui, 2013). Unlike traditional fundraising methods in which one or two people review the request, anyone of the two billion people who use the Internet can review the request through a brief video and written description. To expand awareness, requesters post links to their project in social media and send e-mails about their campaign to friends, family, and news media outlets. A dance project requester described how crowdfunding allowed her to both raise funds and spread awareness, “[Crowdfunding] is actually a really great way that we got more people to learn about our project. You do [crowdfunding] to fundraise, but you also do it for marketing to let people see [sic] about your project.” Other requesters were uninterested in money but rather spreading the word about and distribute their project to “the outer ring of [their] universe.” Crowdfunding not only affords connecting with new groups of people with whom the requester is not directly connected (Granovetter, 1973) but also to many different audiences to amplify their reach (Burt, 1992). Participants report strong satisfaction with expanding awareness of their work through crowdfunding campaigns even when financial goals were not met (Gerber & Hui, 2013).

Requester motivation: Form connections

In addition to raising funds and expanding awareness of work, requesters are motivated to connect with people through a long-term interaction rather than through a single financial transaction. Because crowdfunding platforms store supporter contacts and provide online

communication channels, requesters are able to easily answer questions, provide project updates, and arrange for face-to-face meetings (Gerber & Hui, 2013). A board game designer described his connection with supporters, “[*The funding process*] creates a longer-term connection to people that months later, you’re still interacting You can build relationships with people ... over the course of time.” Such long-term interactions allow requesters to collaborate directly with supporters, engaging them in their process, and directly selling to them. In contrast to traditional marketing methods, crowdfunding provides a quick and alternative way to advertise a product and building a fan base (Gerber & Hui, 2013). The long-term relationship stands in contrast to the short-term relationship that occurs in many online financial transactions, such as those that occur when buying a product on the Amazon marketplace. However, this desire for social connection is consistent with many online communities that are not focused on financial transactions, such as online chat rooms (Kraut & Resnick, 2012).

Requester motivation: Gain approval

In addition to raising funds and awareness and establishing connections, requesters are also motivated to satisfy a desire for approval – both for themselves and for their work. The number of supporters and amount of dollars raised are often seen as a quantification of the value of one’s project. A writer describes how the community’s approval increased her confidence in her work through online conversation: “*You sort of wonder if people are going to like you and like your work I definitely got more confident once people were clearly interested in it and clearly engaging in the dialogue and supporting me financially.*” In some cases, the desire for approval was more important than raising money. A nonfiction writer added, “*The funny thing is, I probably gave other people as much money as I’ve just made on this [crowdfunding] campaign. But, the whole thing is like, a load of confidence.*” Requester motivations vary depending on the maturity of their project and their professional career.

Requesters seek funds from a community of people who care not just about the project but also about the individual’s success. A requester describes how crowdfunding provided validation, “*You are being validated Friends and families become evangelists for you You have people saying, I believe in you.*” Online encouragement and financial backing supports perceptions of approval, which strengthens beliefs in ability to complete a task (Lin, Prabhala, & Viswanathan, 2009). Requesters may consider approval as positive feedback for their project. A requester describes how he uses funding success to determine if “*people will want [my product].*” He explains the use of crowdfunding to minimize risk,

“It’s just an incredible way to take a risk and it’s a totally safe risk to take.” Requesters are motivated to participate in crowdfunding to gain approval for themselves and their work. The approval can come in the form of monetary backing, evangelism, and feedback. Crowdfunding platforms provide a unique opportunity to satisfy multiple motivations that traditional funding mechanisms, such as grants and venture capital funding, and online social communities do not necessarily satisfy.

Requester motivation: Maintain control

Furthermore, requesters are motivated to participate in crowdfunding to maintain control over their work rather than forfeiting control to the investor. In crowdfunding, funding is not contingent upon a select group of people’s preferences, such as those of an angel investor or venture capitalist. A video game designer explained, *“In game development, the problem is publishers ... get creative control over a lot of stuff because of the contracts they sign. [Through crowdfunding], it’s the gamer that decides which projects they want to do It’s usually the guys with the billions of dollars that make all the decisions for us.”* Before crowdfunding, requesters often had to trade project control for funding and other benefits associated with working under a large label. However, autonomy may come at a cost. One book author described the tradeoffs he made to maintain control of his work, *“Creative control [and] editorial control You gain those in self-publishing, but you’re trading marketing, an entrenched network of contacts, trustworthiness from being associated with an established label I prefer the tradeoffs that I’ve taken for what I’m giving away.”* Maintaining control over one’s project is often more valuable than institutional legitimacy associated with a major producer. As crowdfunding is becoming better known, platforms themselves often provide institutional legitimacy that manufacturers once did.

Maintaining control gives people confidence in their ability to accomplish a task on their own, thereby building self-efficacy (Bandura, 1997). A requester of a food project described the exhilaration of working on her own terms, *“It just kind of made me feel like, I can do anything, and I should do anything I wanted with the support of the community with me.”* Requesters are motivated to participate to maintain control – making choices about the direction of the work. Autonomy supports feelings of competence and allows requesters to execute their project true to their vision.

Requester motivation: Learn new fundraising skills

Having control over a crowdfunding campaign encourages requesters to gain experience in areas outside their professional expertise.

Although requesters did not initially report being motivated to learn, those who had completed campaigns, both successes and failures, were motivated to participate again to improve skills to fundraise effectively, such as marketing, communication, management, risk taking, and financial planning. As one requester noted, *“I went to art school. We didn’t have one single class on fundraising. [Crowdfunding] is a really do-able way to really practice and hone [entrepreneurial] skills.”*

In addition to getting hands-on business experience, crowdfunding also offers a key source of feedback that helps everyday people learn about the novelty and usefulness of their ideas in addition to providing a platform for implementation. Posting a project on a crowdfunding platform requires requesters to address a general audience. A scientist described how crowdfunding required her to learn how to frame her work for different audiences and use new techniques to communicate her message, *“I really think [crowdfunding] helped me communicate with the public and get them interested in my work I’ve never made a video before for my research I really enjoyed that. That was not something I had ever done before.”* Requesters also learn what kind of language to use in their pitch including *“keeping things very progressive sounding, and keeping the vocabulary very positive versus desperate.”*

Overall, requesters are motivated to participate in crowdfunding to raise funds, expand awareness of their work, form connections with others, gain approval for their work and themselves, maintain project control, and learn new skills. Crowdfunding platforms provide a unique opportunity to satisfy multiple motivations that traditional funding mechanisms do not necessarily satisfy. The next section reports empirically grounded motivations for becoming a supporter, those who provide resources to the requesters.

MOTIVATIONS TO BECOME A SUPPORTER

Supporter motivation: Collect rewards

Many supporters are motivated to collect external rewards such as an acknowledgment, a tangible artifact, or an experience. An acknowledgment may come in the form of a telephone call, while a tangible artifact may be a CD or gadget. A person who funded an iPad accessory describes his anticipation to use his future reward (the accessory), *“I like to buy things that I can play with.”* Many supporters refer to the transaction as “buying” and “getting,” suggesting that crowdfunding shares some elements with the consumer experience. However, unlike most transactions in the formal economy, supporters give money and then wait for several weeks or

months before receiving their reward. This activity is not currently taxed nor monitored by government. For example, a person may pay his or her friend to create a custom bike frame in the friend's garage and wait months before receiving the finished product. The supporter puts forth funds often prior to product creation, trusting that the requester will deliver on his or her promise.

Even though supporters may delay gratification, supporters are aware of the value of the product, service, or experience that they will receive in exchange for their financial support. A supporter who contributed funds to a documentary film project commented, *"I'm not going to give them 5 dollars, I'm going to give them 10 dollars because 5 more dollars will give me a high definition download of this film. That's worth it."* Supporters exhibit consumer behavior, expressing interest in receiving a reward in exchange for giving money. However, the fact that they are willing to pay prior to reward creation and wait weeks or months sets this type of transaction apart from traditional consumer transactions.

Supporter motivation: Help others

While many supporters are motivated to collect, others are motivated to give in a way that resembles philanthropic behavior, especially to those with whom they have a personal or extended connection. One supporter explained, *"I've funded projects where I have a personal connection to the person making the appeal."* When posting projects on crowdfunding platforms, requesters learned about supporters who had wanted to support them but previously weren't able to do so. An oceanographer noted, *"It turns out that there were a lot of friends and family that wanted to support what I was doing and didn't have an avenue to do so. [Crowdfunding] provided an avenue."* Yet, the connection to the requester is not always personal. In one example, the keyboardist of the British band Marillion explained to his fans that the band could not embark on a US tour for lack of funds. In response, the fans created a crowdfunding campaign and raised more than \$60,000 to fund the tour (Spellman, n.d.). Fans contributed time, effort, and money to help the requesters.

Supporters can be willing to prioritize others at their own expense to help a friend in need. A supporter described how she decided to monetarily support her friends even though she had limited financial resources. *"After having lost my job in May, I haven't had any extra money whatsoever. I hardly have five dollars to my name But, for the most part, if a friend is in need I'll try to help him out as best as I can."* They also report the desire to help requesters who are close to their funding goal in hopes that they make a meaningful impact. And they can track the requester's progress on

the project page. A supporter describes his desire to help a friend who wanted to sell his music album, “[His project] was something like \$500 short at the time, and I told him, if it doesn’t go over the number the day before, I will put the rest of the money in I’d seen him work so hard on this material. It was really important to me to make sure that the project got funded.” If a supporter has a personal connection to a requester, he or she is also more likely to be aware of the amount of work the requester has put into the project.

Crowdfunding provides supporters with a way to support requesters with unique ideas. One supporter of community design projects reported, “I like supporting creative people that I feel have authentically good ideas and maybe wouldn’t get mainstream support from the public. So, they might be doing something unusual ... but you can see that there is something valuable there.” When projects are successfully funded, the success is shared between requester and supporter. Supporters are motivated to help others with whom they are strongly and weakly tied. These ties could be from friendship and/or shared interests.

Supporter motivation: Be part of a community

In addition to supporting individual requesters, supporters are motivated to feel part of a community of like-minded people. One serial technology supporter stated, “There’s definitely a sense of community ... some sort of responsibility [to support].” Supporters express the desire to see evidence of being part of a select group. Crowdfunding platforms achieve this by listing who has supported a project on the project supporter page. A supporter of a design project described her satisfaction, “Oh that’s cool that my picture will be on the [supporter page] I’m part of this community that’s supporting [this project].” This page allows supporters to easily see who supported the same project.

Supporters are also motivated to support people they trust. One supporter described how this aspect of trust made him feel more comfortable with giving money to unknown others, “I think that all or almost all [projects] were done by people that I don’t know There’s something about the nature of [the crowdfunding] community, I’m a little more willing to trust.” Trust is a common basis for monetary transactions (Gefen, 2000), and crowdfunding platforms are able to foster trust between supporters and requesters and other supporters. Overall, supporters are motivated to participate in crowdfunding because it provides a visual form of acceptance and gives them a unique opportunity to interact with and contribute to a like-minded group of people.

Supporter motivation: Support a cause

In addition to being a member of a community, supporters are motivated to support causes aligned with their identity. People support efforts that are consistent with their identity or the identity to which they aspire (Aaker & Akutsu, 2009). Some supporters pass up the reward and have 100% of their funds go directly to the project cause. One technology supporter reported, *“I really like the idea of people being able to get off the ground without needing to buy into a big giant corporate structure. And I like the way that people put the ideas they want out instead of having to compromise those ideas in order to get their product out.”* Supporters are motivated to support nontraditional means of production that allow requesters to maintain creative control. A supporter of design projects noted the differences in community behavior between those who participate in crowdfunding and those who use more traditional fundraising methods, *“In other domains ... people could have a tendency to feel competitive with people who are doing something similar ... [With crowdfunding] people feel more collaborative I just wanted to be a part of that uplifting force.”*

Cooperation remains a normative behavior for many online communities (Kraut & Resnick, 2012). While supporters of both causes and requesters are primarily motivated by philanthropic behavior, they often appreciate a memento of their giving experience. A supporter who contributed to a project that employed local women in Chile commented, *“I thought it would be nice to get something that would remind me of the project that my friend was doing and kind of connect me to the culture and the community that I was supporting.”* Crowdfunding provides an avenue for supporters to be part of a community of like-minded individuals and express their beliefs through the exchange of resources (primarily financial), whether it is for the requester or project cause.

DETERRENENTS TO BECOME A REQUESTER

While many people participate in crowdfunding, many do not. There are several factors that significantly reduce their likelihood to solicit resources and contribute (Gerber & Hui, 2013). For requesters, these factors included hesitance to publicly solicit funding, concerns about the time commitment relative to other funding mechanisms, fear of failure, and concerns about privacy and plagiarism. Supporters were mainly concerned about waiting for and not receiving rewards and ineffective use of funds. We briefly discuss deterrents for requesters and supporters.

Requester deterrent: Inability to attract supporters

Many requesters chose not to crowdfund because they believed that existing crowdfunding platforms did not currently or would not attract a sufficient number of supporters to fund their project once launched. One requester of a web networking application who initially considered Kickstarter but ultimately chose to pursue another source of funding described his concern, “*We didn’t think [our project] would resonate with a large group of people, specifically the kind of people that are on Kickstarter.*” Instead, this requester sought \$60,000 dollars in funding from an angel investor in a major metropolitan area. Another requester developing a medical device designed for nurses and doctors examined past crowdfunding successes and decided against participation given the perceived fit, “*There’s a certain type of product that does well on Kickstarter and there’s certain types of products that don’t do well.*” Because publicizing one’s project can take up to 11 hours a day, one requester who needed funds to manufacture a toy for diabetic children described how she felt her efforts were best used at targeting her specific audience members face to face at outreach events rather than online through an unfamiliar platform, “*It just was just not the right audience ... [our market] is a small population that you need more of the direct approach to make families buy [our product].*” This requester decided to attend a conference for parents who have diabetic children where the potential customers were able to pick up and test the product in real time with their children before putting in an order.

Much of these beliefs stem from the idea that crowdfunding supporters are more interested in supporting creation of products rather than the overhead. Supporting startup processes, such as paying for office space and prototyping materials, seems less appealing. Further, the rewards must be good. Many requesters choose not to crowdfund because they do not have compelling rewards to give to supporters. Many requesters were deterred from crowdfunding if they felt they were unable to attract their target audience or develop adequate rewards – features that crowdfunding platforms emphasize as keys to success. Together these findings reinforce the perception of crowdfunding as online platforms for consumer purchases.

Requester deterrent: Fear of public failure and exposure

Requesters also choose not to crowdfund because they fear public failure and exposure. Potential requesters expressed concern about damaging their reputation damage with future investors, friends and family as well as people stealing their ideas. A toy designer explained how other investors, such as angel investors and venture capitalists may be less likely to fund if the requester had failed in crowdfunding, “*If we did [crowdfund] and we weren’t successful ... we felt like we’d be shooting ourselves in the foot for getting money from*

other sources. So, the other venture funds and angels [would] look at us and then if we couldn't pass that crowdfunding test, they might be more reluctant to invest."

In addition to worrying about what future investors might think, requesters are also worried about the impressions from their friends and family. One requester described how she did not want her failure to be on public display saying, *"The risk is if you publicize to all your friends, all your family, all your colleagues, everyone will know if you fail."* In order to avoid this situation, one requester privately sold his car and put the funds toward his campaign to reach his goal. Requesters consistently report anxiety about having overestimated the size and commitment of their supporter community.

While the rise of crowdfunding has normalized the idea of asking for small donations from one's social network, most requesters still report discomfort with asking for funds as some described it as "begging." Potential requesters report feeling even more guilty about asking for money from friends who earn less money in their day job than they do.

Crowdfunding exposes not only financial vulnerabilities but also ideas. Requesters report being deterred by the possibility of idea theft. One requester of a mobile travel application explained his worries about sharing his ideas. *"In some cases, your intellectual property, which is a big part of your business, is a trade secret. And if you put stuff out ... people can steal your idea."* Some requesters try to protect against idea theft by getting a patent prior to their campaign. However, getting a patent is not an easy process, and applying for it and defending it may not be worth the effort in order to crowdfund. One requester of a bike product explained, *"Just because you've filed a provisional patent on something doesn't mean someone can't take that idea and run with it."* Crowdfunding requires massive public exposure, and for many potential requesters, such exposure at an early stage of their work threatens chances of future investing, reputation in one's social network, and idea theft.

Requester deterrent: Time and resource commitment

While crowdfunding may be seen as more efficient for certain requesters, such as musicians or novelists with experience managing a large number of supporters, it can seem overwhelming to others with limited experience. Because crowdfunding can involve answering to hundreds and thousands of supporters, requesters report being deterred by the amount of work it would take to deal with such a large audience. One student requester of a research project, who had previously tried crowdfunding, described how she chose to apply for grants rather than crowdfund again because the grant application process took less time. *"[For] typical science grants, you put a lot of work into them up front. [For crowdfunding], I felt like, it was much more*

time ... constantly advertising, networking, encouraging people to go on and donate, and then responding to a lot of the replies that I was getting. It ate up a lot of time. And then after all that fun was over, you have all these different gifts that you promised people." Requesters report spending between 30 minutes and 11 hours a day on their live campaign, which is a highly varying time commitment. Although some crowdfunding campaigns may be less time consuming than some traditional funding methods, such as hosting a fundraising event, it may be more time consuming than others, such as writing a grant. Despite the time commitment of running a campaign, requesters report receiving the actual funds more quickly through crowdfunding platforms than with grant funding.

Requesters also explain the effort required to manage many supporters. One requester of a travel product, who chose a startup competition to raise funds over crowdfunding, explained how the crowd wants to always see progress, which can be overwhelming for a project requester. One requester of a mobile app project explained, "*People love to see progress and rapid progress, and you've got to maintain some momentum.*" This takes up valuable time, especially when he was busy attending to the other needs of launching a startup. A requester explained, "*I mean you are busy enough as an entrepreneur.*"

Some novice requesters who have access to university funds and student-focused competitions have described how these alternative funding sources are more straightforward and provide more mentorship than crowdfunding. Often platforms only provide a question-answering service, which may take weeks if not longer for them to respond. By that time, the requester's campaign may be over. Crowdfunding is described as a public "debut" or "national opening." Consequently, requesters want to present their best work and many are deterred from participating if they feel they need more time, resources, and institutional support than what is currently provided by the crowdfunding platforms.

DETERRENTS TO BECOMING A SUPPORTER

Supporter deterrents: Distrust of requester's use of funds

Some crowdfunding platforms allow requesters to keep what they raise even if they do not reach the funding goal. Even though this is beneficial for the requester, some supporters worry that their money will not be used effectively. One supporter of a community design project described how she prefers the all-or-nothing funding model to others, "*There's kind of a sense of security knowing that I'll only be paying if she meets her goal.*" The all-or-nothing funding model may be one of the reasons that Kickstarter has enjoyed more success than other crowdfunding platforms that use the keep-what-you-raise model.

Table 3: Design Principles to Support Requester and Supporter Participation in Crowdfunding.

Design Principle	Motivation	Example
1 Support resource exchange	Raise funds (requesters) Gain approval (requesters) Learn new skills (requesters) Collect rewards (supporters) Support causes (supporters) Help others (supporters)	Open forums to post and seek production needs
2 Support community before, during, and after	Form connections (requesters) Gain approval (requesters) Learn new skills (requesters) Expand awareness (requesters) Be part of a community (supporters)	Platform to support requester and supporter meet-ups
3 Provide transparency	Maintain control (requesters)	Presentation of risks in an easy-to-understand and nonthreatening format

Because many requesters on crowdfunding platforms have limited business experience, they often underestimate the amount of planning and time it takes to finish a project and deliver on rewards (Kim and Gerber, manuscript in preparation). One supporter of technology projects noted, *“Part of the process that’s bad about [crowdfunding] is that it’s new people, and they really don’t have any idea how long a product is going to take [to make]. So, they often underestimate the amount of time it takes to get something out.”* A requester of an education project validated this supporter’s complaint when he described how he failed to deliver his rewards due to time constraints, *“we reached out to all our donors and asked them personally, would you mind if we didn’t send you a prize?”* Since receiving a reward is considered a main motivation for supporters, not receiving the reward can act as a deterrent for future funding activity. Unlike many peer-to-peer marketplaces such as eBay, crowdfunding platforms currently do not have “resolution centers” if a conflict arises.

Summary of motivations

While many requesters and supporters are motivated to participate in crowdfunding, many indicate factors that demotivate. For requesters, crowdfunding can be both an efficient and an inefficient way to solicit resources; it can be a way to raise awareness, but at times at the annoyance of supporters; and it can lead to public success or failure. For supporters, crowdfunding can be a way to support causes and requesters with limited access to traditional funding

mechanisms. The downside is that supporters must potentially accept delays, ineffective use of funds, and poor communication.

DESIGN PRINCIPLES

Based on empirical research described in the previous section, we propose the following design principles to inform the design of the future platforms to support greater participation (Table 3).

Future Research

While we understand the work of crowdfunding (Hui, Greenberg, & Gerber, 2015; Hui et al., 2014), motivations for participation in crowdfunding (Gerber & Hui, 2013), and how the design of platforms influence engagement (Gerber & Hui, 2013; Harburg et al., 2015; Hui et al., 2015) to inform the design of new tools to support the growth of crowdfunding platforms, there are still areas for future exploration. We propose two potential areas for future theory and platform development: professionalization of crowdfunding and proliferation of crowdfunding into new domains.

PROFESSIONALIZATION OF CROWDFUNDING

Crowdfunding held the promise of lowering the threshold for innovation and increasing the scale, diversity, and quality of crowdfunding tools. Access to these tools can accelerate learning, improve productivity, support innovator self-efficacy, democratize innovation education, and increase diversity of engagement. We need to better understand characteristics of crowdfunding communities that might be improved to increase engagement and learning among people who have used crowdfunding to overcome traditional entrepreneurial limitations, such as inability to find angel investors or expensive business school tuitions. Learning how to interact with the public effectively takes an entire new skillset that many professionals may not have, and acquiring this skillset is time and effort intensive. Future work will focus on designing support tools for crowdfunding platforms that are informed by requesters' needs to alleviate the strain of onboarding for novice professionals who may want to crowdfund their work. Potential support tools could help novice crowdfunders find and communicate with peers and mentors in the crowdfunding community. While there is already much activity in online forums and Q&A platforms, like Reddit and Quora, many participants with a limited crowdfunding network found it difficult to find people who could give targeted one-on-one advice. For instance, simply knowing that a high quality video is important is

different from learning how to purchase and use videography equipment, finding fair-use music, and getting feedback on writing a storyline. While many of these skills can be learned through reading online how-tos and blogs, having a conversation with an experienced crowdfunding peer who can point one in the right direction could save hours or days of time (Hui and Gerber, manuscript in preparation). Furthermore, crowdfunding, like all entrepreneurial endeavors, requires persistence. Because crowdfunding work is often more public than traditional entrepreneurial efforts, we need to design tools that help novice entrepreneurs learn and bounce back from failure.

PROLIFERATION OF CROWDFUNDING INTO NEW DOMAINS

While most crowdfunding occurs outside the organization, increasingly for profit enterprises such as IBM and higher education institutions such as Northwestern University are integrating crowdfunding into their organization. Within industry, employers allocate money to employees asking them “spend” money on employee-initiated proposals posted on an intranet site. Researchers find that projects address diverse individual and organizational needs with high participation rates. Further, “enterprise crowdfunding” supports interdepartmental collaboration, including the discovery of large numbers of previously unknown collaborators and the development of organizational goals (Muller, Geyer, Soule, Daniels, & Cheng, 2013). Within higher education, researchers post videos, lab tours, and requests for support to alumni and passionate community members asking them to support the student research assistants, the principal investigator, and the university. This approach stands in stark contrast to the traditional national foundations that support independent scientific research. Based on our personal experience launching a campaign within higher education, we find that alumni relations and development are wary of fostering direct communication between the faculty and alumni, and the office of sponsored research is not yet prepared to accept small gifts of 5–30 dollars from individual donors. We plan to study the proliferation and modification of the crowdfunding mechanism in a range of institutional domains including education, health, and energy, as well as how crowdfunding integrates with existing fundraising structures and perceptions of ease of use for requesters and supporters in these domains.

Conclusion

Innovation is crucial for the advancement of society. Yet, the struggle continues to overcome obstacles that broaden participation and funding of innovative work. As researchers, we are called to study

and design emerging systems that fundamentally reduce the barriers to participation. By realizing new opportunities for funding and communicating new ideas, crowdfunding can provide new ways for everyday people to engage the public and peers in their creative and professional process.

References

- Aaker, J., & Akutsu, S. (2009). Why do people give? The role of identity in giving. *Journal of Consumer Psychology*, 19, 267–270. doi:10.1016/j.jcps.2009.05.010
- Agrawal, A. K., Catalini, C., & Goldfarb, A. (2011). The geography of crowdfunding. *National Bureau of Economic Research*. Retrieved from http://www.nber.org/papers/w16820.pdf?new_window=1
- An, J., Quercia, D., & Crowcroft, J. (2014). Recommending investors for crowdfunding projects. *Proceedings of the 23rd international conference on world wide web*, International World Wide Web Conferences Steering Committee (pp. 261–270). Retrieved from <http://dl.acm.org/citation.cfm?id=2568005>
- BackerKit. (2015). Retrieved from <https://www.backerkit.com/>. Accessed on June 3.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman and Company.
- Benefunder. (2015). Retrieved from <http://benefunder.org/>. Accessed on February 11.
- Bernstein, M. S., Bakshy, E., Burke, M., & Karrer, B. (2013). Quantifying the invisible audience in social networks. *Proceedings of CHI '13* (pp. 21–30). Retrieved from <http://dl.acm.org/citation.cfm?id=2470658>. Accessed on September 18.
- Braff, Z. (2014). *Wish I was here*. Retrieved from <https://www.kickstarter.com/projects/1869987317/wish-i-was-here-1/description>
- Burt, R. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Burt, R. (2004). Structural holes and good ideas. *American Journal of Sociology*, 110, 349–399.
- Dell, N., Vaidyanathan, V., Medhi, I., Cutrell, E., & Thies, W. (2012). Yours is better! Participant response bias in HCI. *Proceedings of CHI '12* (pp. 1321–1330).
- Donors Choose. (2015). Retrieved from donorschoose.org. Accessed on February 12.
- Gefen, D. (2000). E-commerce: The role of familiarity and trust. *Omega: The International Journal of Management Science*, 28(6), 725–737.
- Gerber, E. M., & Hui, J. (2013). Crowdfunding: Motivations and deterrents for participation. *ACM Transactions on Computer-Human Interaction*, 20(6). doi:10.1145/2530540
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380.
- Greenberg, M. D., Easterday, M., & Gerber, E. M. (2015). Critiki: A scaffolded approach to gathering design feedback from paid crowdworkers. *ACM conference on creativity and cognition*.
- Greenberg, M. D., & Gerber, E. M. (2014). Learning to fail: experiencing public failure online through crowdfunding. *Proceedings of the SIGCHI conference on human factors in computing systems*, ACM, New York, NY (pp. 581–590). CHI '14.

Greenberg, M. D., & Gerber, E. M. (2015). Understanding resource exchange in crowdfunding platforms. *Collective intelligence conference*.

Greenberg, M. D., Hui, J. S., & Gerber, E. M. (2013). Crowdfunding: A resource exchange perspective. *Proceedings of the ACM SIGCHI conference on human factors in computing systems (CHI) extended abstracts*, Paris, France (pp. 883–888).

Greenberg, M. D., Pardo, B., Hariharan, K., & Gerber, E. (2013). Crowdfunding support tools: Predicting success & failure. *Proceedings of the conference on human factors in computing systems*, ACM (pp. 1815–1820).

Harburg, E., Hui, J., Greenberg, M., & Gerber, E. (2015). The effects of crowdfunding on entrepreneurial self-efficacy. *Proceedings of the conference on computer supported cooperative work and social computing*, ACM.

Hui, J., & Gerber, E. M. *Cognitive apprenticeship in online crowdfunding communities*. Manuscript in preparation.

Hui, J., & Gerber, E. (2015). Crowdfunding science: Sharing research with an extended audience. *Proceedings of the conference on computer supported cooperative work and social computing*, ACM.

Hui, J., Gerber, E., & Gergle, D. (2014). Understanding and leveraging social networks for crowdfunding: Opportunities and challenges. *Proceedings of the conference on designing interactive systems*, ACM (pp. 677–680).

Hui, J., Greenberg, M. D., & Gerber, E. M. (2015). The role of community in crowdfunding work. *Collective intelligence conference*.

Hui, J. S., Greenberg, M. D., & Gerber, E. M. (2014). Understanding the role of community in crowdfunding work. *Proceedings of the conference on computer supported cooperative work and social computing*, ACM (pp. 62–74).

Kickstarter. (2015). Retrieved from kickstarter.com. Accessed on June 9.

Kickstarter Stats. (2015). *Kickstarter*. Retrieved from <http://www.kickstarter.com/help/stats>. Accessed on February 12.

Killgrove, K. (2011). *Ancient roman DNA project*. Retrieved from <http://www.rockethub.com/projects/3709-ancient-roman-dna-project>

Kim, Y., & Gerber, E. Understanding Trust in Online Crowdfunding Communities. Manuscript in preparation.

Knowledge @ Wharton. (2010). *Can you spare a quarter? Crowdfunding sites turn fans into patrons of the arts*. Retrieved from <http://knowledge.wharton.upenn.edu/article.cfm?articleid=2647>. Accessed on December 8.

Kraut, R. E., & Resnick, P. (2012). *Building successful online communities*. Cambridge, MA: MIT Press.

Lambert, T., & Schwenbacher, A. (2010). An empirical analysis of crowdfunding, Louvain School of Management, Belgium.

Lin, M., Prabhala, N. R., & Viswanathan, S. (2009). Judging borrowers by the company they keep: Friendship networks and information asymmetry in online peer-to-peer lending. *Conference on Information Systems and Technology (CIST)*, San Diego, CA.

Litt, E. (2012). Knock, knock. Who's there? The imagined audience. *Journal of Broadcasting & Electronic Media*, 56(3), 330–345.

Massolution. (2015). Retrieved from Massolution.com. Accessed on February 12.

Mitra, T., & Gilbert, E. (2014). The language that gets people to give: Phrases that predict success on Kickstarter. *Proceedings of the conference on computer supported cooperative work and social computing*, ACM (pp. 49–61).

- Moissejev, A. (2013). *Effect of social media on crowdfunding project results*. Retrieved from <http://digitalcommons.unl.edu/businessdiss/39/>
- Mollick, E. (2013). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, 29(1), 1–16.
- Muller, M., Geyer, W., Soule, T., Daniels, S., & Cheng, L.-T. (2013). Crowdfunding inside the enterprise: Employee-initiatives for innovation and collaboration. *Proceedings of CHI*, Paris, France (pp. 503–512).
- Needleman, S. E. (2011). Raise cash on crowdfunding sites. *Wall Street Journal*, 27 November 2011.
- Ouya. (2012). *Ouya: A new kind of video game console*. Retrieved from <http://www.kickstarter.com/projects/ouya/ouya-a-New-Kind-of-Video-Game-Console>, <http://www.kickstarter.com/projects/ouya/ouya-a-new-kind-of-video-game-console?ref=live>
- Peterson, J. (2015). *Air shepherd drones stop elephant & rhino poaching*. Retrieved from <https://www.indiegogo.com/projects/air-shepherd-drones-stop-elephant-rhino-poaching#/story>
- Raimist, A. (2011). *(en)visioning Hyde park*. Retrieved from <https://www.kickstarter.com/projects/raimist/envisioning-hyde-park>
- Reiss, S. (2004). Multifaceted nature of intrinsic motivation: The theory of 16 basic desires. *Review of General Psychology*, 8(3), 179–193.
- Solomon, J., Ma, W., & Wash, R. (2015). *Don't wait! how timing affects coordination of crowdfunding donations*. Retrieved from <http://rickwash.com/papers/crowdfunding-timing-dont-wait.pdf>. Accessed on March 21.
- Spellman, P. (n.d.). *Crowd funding: Arts patronage by the masses*. Berklee College of Music. Retrieved from http://www.berklee.edu/bt/194/crowd_funding.html
- Teelaunch. (2015). Retrieved from <https://teelaunch.com/>. Accessed on June 3.
- Tilt. (2015). Retrieved from <https://www.tilt.com/>. Accessed on February 11.
- Tohidi, M., Buxton, W., Baecker, R., & Sellen, A. (2006). *Getting the right design and the design right: Testing many is better than one*, ACM, Montreal, QC.
- Ward, C., & Ramachandran, V. (2010). Crowdfunding the next hit: Microfunding online experience goods. *Proceedings of NIPS, workshop on computational social science and the wisdom of crowds*. Retrieved from <http://www.cs.umass.edu/~wallach/workshops/nips2010css/papers/ward.pdf>
- Wash, R., & Solomon, J. (2014). Coordinating donors on crowdfunding websites. *Proceedings of the conference on computer supported cooperative work and social computing*, ACM (pp. 38–48).
- Xu, A., Yang, X., Rao, H., Fu, W.-T., Huang, S.-W., & Bailey, B. P. (2014). Show me the money! An analysis of project updates during crowdfunding campaigns. *Proceedings of the 32nd annual ACM conference on human factors in computing systems*, ACM (pp. 591–600).