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Crowdfunding in the Enterprise and on the Internet: Workplace Users Emphasize Collaboration and Sociality

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Crowdfunding in the enterprise and on the Internet: Workplace users emphasize collaboration and sociality

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ABSTRACT

Internet crowdfunding has become an important driver of innovation, entrepreneurship, commerce, investment, and charity. Crowdfunding inside of organizations may have different emergent attributes. We provide a first direct comparison of experiences in Internet crowdfunding and organizational crowdfunding. Using Grounded Theory Method, we develop four related perspectives on enterprise crowdfunding. Our results suggest that crowdfunding in organizations may be a strongly *social, collaborative* activity, characterized by *awareness and responsibility to others*, and with a *decreased emphasis on personal gain*. We conclude with implications for design of organizational crowdfunding websites, and we suggest that some of those design innovations may be valuable for Internet crowdfunding websites, as well.

Categories and Subject Descriptors

H.5.3. Group & organizational interfaces: CSCW.

General Terms

Design, Experimentation, Security, Human Factors.

Keywords

Crowdfunding; Enterprise crowdfunding; CSCW; Social media; Organizational computing; Collaboration.

1. INTRODUCTION

In recent years, the concept of global crowd-based funding models, commonly known as crowdfunding, has become very popular [1, 3, 5, 10, 11, 17, 19, 23, 25, 26, 28, 30, 37, 39, 40]. Crowdfunding supports value co-creation [31] by allowing an innovator to publish a project description, and to solicit funds and feedback from others, typically via an Internet site such as Kickstarter [21], Indiegogo [20], RocketHub [32], or Kiva [22].

Early studies of crowdfunding focused on seeming paradoxes of participation. Why should people entrust their funds to unknown third parties? Van Wingerden and Ryan suggest intrinsic motivations, such as control of an innovation, enjoyment, access to resources; and extrinsic motivations, such as financial reward [37]. Harms suggests additional motivations, such as functional utility, enhanced self-concept, and self-expressiveness [17]. Ordanini et al. agree with the preceding list of motivations, and add public recognition and patronage [30]. Nearly all of these motivations involve individualistic gain [3, 17, 30, 37].

CSCW and HCI researchers have begun to tell a different, more collaborative story. Gerber and colleagues demonstrate that there are subtle but powerful collaboration- and community- oriented aspects of Internet crowdfunding [11, 19]. Wash joins [19] in highlighting the importance of collaboration during the extended lifecycle of crowdfunding proposals, well beyond the point of complete funding or even project-completion [39, 40]. In the rarer case of enterprise crowdfunding, Muller et al. [28] and Sakamoto et al. [34] showed that collaborative themes become more salient within an organization (see also [10]). New research in this area is promising (e.g., [36]).

However, there has been no study that directly compared motivations in Internet vs. Intranet crowdfunding. In this paper, we offer a qualitative comparison of these two types of crowdfunding arenas, among employees of IBM Corporation who had invested in Internet crowdfunding efforts and/or an internal (Intranet) crowdfunding experiment. For reasons of space, we focus primarily on investors, and we postpone a treatment of the proposers' experiences to a later paper.

The remainder of this paper is organized as follows. First, we review relevant research literature, both within CSCW and HCI, and more broadly in economic and business studies of crowdfunding. Next, we describe the setting of our qualitative study. Based on the specific qualities of that setting, we list four Research Questions that we will address in this paper. The questions follow the logical flow of a crowdfunding process; beginning with the motivational and selection aspects of the projects based on its type; followed by strategies and approaches to conduct research and investment, and finally executing the process with the help of collaboration. We present results of interviews with 35 participants, and we develop a set of contrasting experiences in their crowdfunding experiences in Internet vs. Intranet domains. We conclude with a discussion of potential new features for crowdfunding websites, and future research areas.

2. BACKGROUND AND RELATED WORK

Contemporary crowdfunding is practiced on more than 450 websites worldwide [19] that fall into three major categories: financial gain, creativity, and charity [3, 23, 30]. In general, these shared sites support the creation of project proposals or "pitches" by diverse *proposers*, and the investment of funds to support particular projects by other diverse *investors* (e.g., [14, 20, 21, 22, 24, 32]). Additional roles occur at some sites [16] and in some organizational configurations [27, 34].

As summarized by Wingerden and Ryan [37], early studies of crowdfunding focused on ownership and project governance, such as [3, 35, 38]. Proposers appeared to be similar to conventional venture entrepreneurs (e.g., [3], and early work tended to focus on proposers and success factors (e.g., [7]).

2.1 Distinctiveness of Crowdfunding

And yet, the dynamics of crowdfunding are different from conventional venture funding. Giudici et al. showed that, unlike venture funding, geographical proximity of proposer and investor was a relatively poor predictor of the ability to raise the target amount of funds, whereas the presence of social ties was a much stronger predictor [12]. Investors tend to focus more on quality of proposal than on geographical proximity [8]. Mollick [26] described a series of ways in which crowdfunding is different from venture financing, including

- Greater number and diversity of proposers and investors
- Non-alignment of investors with particular institutions
- Rarity of equity and monitoring rights

Perhaps in consequence, Mollick continued [26] with a contrast of the dynamics and outcomes of crowdfunding, as compared with venture funding:

- More democratic and distributed investment and investor
- Reduced clustering in innovation hubs (see also [8])
- An order-of-magnitude greater percentage of women proposers

While Mollick discussed the structure of relationships, Quero et al. considered the dynamics of crowdfunding [31]. They describe a transition from a conventional value provision model to a value co-creation model. Invoking the “five co-s” model of Russo-Spena and Mele (co-ideation, co-valuation of ideas, co-design, co-test, co-launch) [33], they add co-investment and co-consumption. This emphasis on proposer-investor collaboration echoes themes from participatory design, where users are often seen as collaborators in design (e.g., [4]), in which distinct practices have been developed to support an HCI/CSCW series of “co-s”: co-investigation, co-design, co-evaluation [27]. See also the Participatory Design conference series, and the journal *CoDesign*.

Crowdfunding studies within CSCW and HCI have considered other contributions to crowdfunding success, such as social relations and reputation [16], social features [7, 15], social commonalities [29], and linguistic features [25]. Recently, Hui and Gerber have begun to demonstrate that there are subtle but powerful collaboration- and community- oriented aspects among crowdfunding proposers [19]. Notably, they describe collaborative activities that take place outside of the conventional cycle of proposals and investments (see also [39]), focusing on contributions of one proposer to another [19]. These advantages may be similar to the finding by Colombo et al. of “internal social capital,” which is established when people co-invest in each others’ projects within the same crowdfunding website [7].

2.2 Investors’ Motivations and Strategies

Gerber and Hui reported investor motivations of collecting awards, helping others, supporting causes, and participating in communities [11]. Harms described a five-factor value model of perceived values to drive “intention to participate” (i.e., to invest) [17]:

- Financial value – anticipated return on investment, broadly construed

- Functional value – usefulness of the project
- Social value – enhancement of self-concept
- Epistemic value – satisfaction of curiosity or desire for knowledge
- Emotional value – experience of positive emotions

Wingerden and Ryan analyzed the motivations of investors in terms into categories of intrinsic vs. extrinsic motivations [37]. Intrinsic motivations included involvement in a project, enjoyment, creativity, and generosity. Extrinsic motivations included anticipation of return. Respondents reported that they were influenced by the (aggregate) actions of other investors. The study was based on a questionnaire, so there was little opportunity to be surprised by actions such as coordinating investments (confer [40]).

Coordination of contributions may be easier if investors have social ties with one another. When crowdfunding occurs within an organization, additional collaborative aspects appear, including shared ownership of projects and the discovery of previously unknown collaborators [28], coordination of funding decisions among investors (see also [40]) and an enhanced need for communication among the stakeholders of a project [34]. Reputation may become more important, because project commitments and choices of collaborators may have implications for careers [28]. Crowdfunding inside an organization provides more opportunities for deliberate communication and coordination of investors, even *before* they have decided to invest [28, 34].

3. RESEARCH QUESTIONS

Despite these contrasts in Internet vs. organizational crowdfunding, there are no studies that directly compare people’s experiences with Internet and organizational crowdfunding. In this paper, we present a first comparison, based on interviewing employees in IBM who had participated in Internet crowdfunding and an enterprise crowdfunding experiment called ARC Angels¹.

Based on the contrasting emphases summarized in the Background section, our first Research Question was intended to orient us (and the reader) to experiences in both the Internet and enterprise crowdfunding domains:

RQ1 What are the experiences of investors in these two domains?

Prior research, conducted separately for Internet [7, 11, 17, 31, 37] vs. organizational [28, 34] crowdfunding, suggested differences in appeals and consequent motivations of investors. We therefore ask:

RQ2 What are the motivations of investors, and what incentives do they respond to?

We learned that motivations were somewhat different for these two domains. We wanted to know how people tried to act on those motivations:

RQ3 What strategies and approaches do investors use?

Finally, there are reports of collaboration among proposers and investors in Internet crowdfunding [11, 19] and in organizational

¹ We use the word “enterprise” when discussing our particular study site at IBM Corporation. By contrast, when we are summarizing the research literature, we use the word “organization” to include crowdfunding that occurs inside a company [28] or inside an educational institution [34].

crowdfunding [28, 34]. We wanted to compare and contrast collaboration approaches in these different domains:

RQ4 Do investors collaborate as a project moves from idea to proposal to funded work? What is the role of relationships?

Because we wanted to understand what might be *unanticipated* differences, we conducted open-ended interviews, and then analyzed what we learned through grounded theory method [6].

4. CROWDFUNDING TRIAL: “ARC ANGELS”

We conducted an enterprise crowdfunding trial, similar to [28], but modified it to allow people to volunteer to share the work of executing a project if the project was successfully funded. In enterprise crowdfunding, or “crowdfunding behind the firewall,” a group of employees were selected to participate in a crowdfunding process. At IBM, the employees were members of the research staff of a major lab in the US. 422 employees were eligible to participate. In general, members were co-located; a few members’ permanent locations were remote. Combining the themes of “angel investors” from the Almaden Research Center (ARC), the organization named the project “ARC Angels”.

Much of the crowdfunding Intranet website design was similar to Internet crowdfunding sites such as Kickstarter.com [21] and Indiegogo.com [20]. Each employee could choose to propose a project, and each employee could choose to invest in zero, one, or more than one project. A project proposal included the goal, the work to-be-done, the “target” amount of funds needed to pursue the project, and the name of the proposer.

As in Kickstarter, funds were allocated to ARC Angels projects on an “all or none” basis. That is, a project had to receive sufficient pledges to meet its funding target. Projects that received insufficient pledge dollars received no funding.

In ARC Angels, there was an additional “target” criterion. Proposers stated not only the target amount of *funding*, but also their target number of *volunteers*. A project was required to achieve both targets in order to be approved. Projects with insufficient volunteers received no funds.

Other key differences from the Internet crowdfunding sites were as follows:

- All projects, investments, and other actions were private to IBM.
- Identities of the participants were tied to their employee IDs. Employees knew the identities of their collaboration partners.
- Money for investments did not come from the employees’ personal funds. Instead, an executive allocated a budget for the project, and each employee received a proportionate share of that budget. In this trial, each employee received \$500 to spend.
- Employee budgets for the crowdfunding trial were offered on a limited-time, “use it or lose it” basis. The funds could be spent only within the crowdfunding trial, and could not be retained beyond the end of the trial. Employees were encouraged to invest in other employees’ projects, and could not invest in their own projects.

The trial was conducted for a month during 2013.

5. METHOD

The primary ARC Angels participants were the 422 members of the research organization, who could *propose* projects, *invest*, *volunteer*, *comment*, *recommend*, *like*, *follow*, or *view* the projects. Employees who were not members of the research organization

had access to the ARC Angels Intranet website, but were not able to propose or invest. Using the method of [2], we estimated the hierarchical level of each participant by reference to IBM’s online employee directory: we counted the number of steps between the CEO and each participant. The range of levels was from 3 (executive) to 12, with the majority (64%) in the technical ranks of 6 and 7. Participants worked in diverse job titles and areas of interest.

We analyzed the event logs from the trial, containing 36,691 entries performed by a total of 522 employees. This number included 320 employees from the research organization (with full privileges on the website), and 202 employees from other organizations in IBM Corporation (with privileges that did not include proposing or investing). The event logs were mined and used to select a diverse group of informants for interviews.² We looked for employees with a range of levels of involvement (from *frequent* visits to the trial website to *infrequent* visits). We sent a personalized interview invitation to each selected employee.

We also sent a broadcast message to all of the participants (as listed in the event logs), asking for people who had experience with both the trial website and one or more Internet crowdfunding websites. 13 people responded. We asked them additional questions, focusing on the commonalities and differences between their experiences with Internet sites and campaigns, and their experiences with the IBM enterprise crowdfunding site and campaign.

5.1 Interview Participants

320 employees participated as investors. Among them, 37 also proposed a project. 108 people volunteered. We interviewed a total of 35 participants. In general, all of our interviewees were familiar with the concept of crowdfunding before ARC Angels was launched. Every conversation was hand and audio recorded using Livescribe pen.

5.1.1 Procedure

Interviews were semi-structured and open-ended. We began with general questions concerning each informant’s experiences with the trial, including their motivations, incentives, and strategies. We followed the informants’ interests, and encouraged each informant to tell stories or introduce new topics.

5.1.2 Analysis

We used grounded theory method (GTM) [6] to understand the differences between enterprise and Internet Crowdfunding. The recorded data was hand transcribed and open-coded. Following GTM practices, memos were created in parallel to record interesting observations and patterns. Using axial coding techniques, we categorized our findings into 22 parameters for the roles played by participants for each type of platform – Internet and enterprise. Finally, we conceptualized our findings using selective coding techniques and synopsized them down to five attributes, which became the focus of this paper.

6. RESULTS

We consider four emergent dimensions from the grounded theory analysis. In each case, we contrast the investors’ *Internet* experiences and *Enterprise* experiences.

² Each participant gave permission for us to use her/his event-log data for anonymized research purposes.

6.1 RQ1. General experiences of investors

6.1.1 Internet

Internet crowdfunding is wide and open, and so are the types of projects being proposed or invested in. Of course, some experiences depend on the type of platform being considered. In our sample, there were more participants active on commercial platforms than non-commercial ones. Kickstarter [21], IndieGoGo [20] and RocketHub [32] were popular among the commercial platforms, while Kiva [22], Lending Club [24] and Grameen Bank [14] were popular among the non-commercial platforms.

On commercial platforms, participants invested in proposals ranging from tangible to non-tangible projects; including arts, research, gadgets, games and even social causes – the most popular being the gadgets. Participants were found to be more interested in owning and investing in a tangible product based projects, over non-tangible ones. About the interest in gadgets, one informant said:

What they said was that, in the first production series of that gadget, I would get one!

For non-commercial platforms, participants invested in projects for social good. Since most of these platforms promote micro lending [14, 22, 24], participants lent their money for agriculture and education based projects. One of the participants interested in agriculture discussed his investments:

Mostly agricultural, mostly people who are trying raise enough money to buy [a] cow, or something like that.

In summary, we learned that a variety of projects are being invested in on the Internet, but tangible projects get most investments. At the same time, participants interested in social good invest on distinct non-commercial platforms, which is unique to the Internet.

6.1.2 Enterprise

In contrast to the Internet, Enterprise crowdfunding is limited and closed, behind a firewall. The rules are stricter, and reflect company policies. The ARC Angels trial attracted 320 investors from a variety of groups and interests. During the one-month trial, we observed a diverse range and variety of projects. The majority of successful projects were non-tangible, as summarized in Table 1.

Contrary to the Internet platform, there were a few tangible Enterprise projects, such as “Telepresence Robot”, “Remote Control Video Camera”, and “Digital Whiteboard”; while there were a lot more non-tangible projects, such as “CPR/First Aid Training”, “Digital Library”, and “Video Game Programming Workshop.”

With regard to the tangible projects, there were other, subtle differences from the Internet experiences. As we indicated above, investors in Internet projects were often interested to obtain their own instance or copy of a tangible outcome (a “gadget”). By contrast, in Enterprise projects such as “Telepresence Robot”, “Remote Control Video Camera,” “Digital Whiteboard,” and “HD TV/HD Satellite Program Upgrades,” the tangible outcomes were shared among members of the research community. One of the participants who worked remotely shared his experience regarding the Telepresence Robot:

I am a nomadic developer, I work out of Maui, and so having a Telepresence Robot will actually going to make a material difference to how I work, so I put my money where it will make a difference

Table 1. Summary of project topics in ARC Angels.

Type of projects	Number of projects
Education or seminars	11
Facilities	8
Purchases/Tangible	8
Science/Research	5
Health/Training	5

It’s true that, for this investor, the project led to a tangible personal benefit. However, the funding target for the project was much greater than a single investor’s budget. The other investors to this project were local to the research center, and had no expectation of receiving an instance or a copy of the technology to be purchased. What they “received” was a benefit to their community, in the form of increased presence and impact of their remote colleague. Similarly, the video camera was a shared device, and the digital whiteboard was intended as a community resource.

Proposers in ARC Angels were interested in diverse ideas. Some ideas involved shared technology resources, such as the robotics, video, and meeting technologies mentioned above. Other projects were intended to allow a smaller group to pursue a shared vision. The proposer of a workshop on video games told us that,

I had this idea... how we could combine business, big data business needs with video games ... [ARC Angels] provided a funding mechanism for a crazy idea, but I thought, I was hoping would resonate with people in the lab, which it did.

Although the enterprise platform cannot be classified as an equivalent of commercial or non-commercial platforms, people proposed projects with social benefits. Projects like “An open research collaboration platform” and “Graduate Student Seminar Series” encouraged education. Other proposals, such as “Learn 3-D Printing,” emphasized skill-development. Still other projects were concerned with infrastructural concepts that would help others to conduct research projects – e.g., a project about big data and materials science (“Polymer Miner”), and a project about methods to manage big data projects (“Data Cowboys”).

6.2 RQ2. Incentives and motivations

6.2.1 Internet

Motivation and incentives go hand in hand, and it may be difficult to determine which has logical precedence for each person. For Internet platforms, we wanted to explore the influence of the “awards” that are often specified to motivate contributions of certain amounts. IBM employees who had invested at Internet crowdfunding sites said that they were driven more by their interests than anything else – e.g., “*More of interest, if I like a project, then I usually fund that*”. One investor further explained,

I think it’s always about the interest first. So if I try to invest vs. not try to invest. So if I try to invest, now I need to choose how much I want to invest. And so the amount I am going to invest is at some level affected by the incentive.

Another Internet investor said,

The original reason for me to be interested in a particular project would be an interest in what they are doing, and after that depending on what they are doing; whether there’s a reward etc, that may help determine how much support I give them.

However, this interest-based description requires qualification. Importantly, informants also explained that they invested to the level where it was possible to expect a tangible return. Thus, investment was in some ways conditional on reward (the gadget), and on the “cost” (investment level) of the gadget. One of the investors who funded three tangible projects on Kickstarter, told us,

So for all three of them, it was that I got something tangible in return

However, some, investors were also highly motivated to social causes. One investor in a project to help and motivate creative youth, reported,

...But that was not my reason behind doing it, I just believed in supporting young people who wanted a chance, and what they were doing was worthwhile to back, and I like the concept of the crowdsourcing.

In summary, we learned that though interest plays the most important role, the actual investment amount on the Internet may be influenced by the incentive.

6.2.2 Enterprise

In an enterprise, personal interest and incentives are not the only criteria for motivating employees. Interest and incentive can range from personal, to the employee’s research group, to the lab facility, to the entire corporation. The majority of investors said they were guided by the usefulness and benefit to their group and lab:

If the lab benefits, [the] group benefits; and if the group benefits, we benefit.

However, another investor significantly expanded the scope of the concept of benefit, to include lab culture

I looked for projects that would slightly be non-work related perhaps, and would just improve the quality of life at [the] lab.

(See [28] for convergent evidence.)

While the concept of benefit was important, the specific incentives were not. One strong example comes from the “CPR/First Aid Training” project, which proposed to conduct professionally led training in Cardio-Pulmonary Resuscitation. No specific award level was specified, and so investors’ pledged very different amounts in order to be part of the training session. The proposer remarked,

I thought that was sort of interesting that people, sort of relied on generosity of others who were going to participate to fund the course.

The investment guidelines of ARC Angels granted each full-time employee with \$500, with the rule of *Use it or lose it*. Participants found that “*use it or lose it was definitely an incentive to spend all your money*”. We’ll discuss the ownership of money and its relationship to investment in detail later in the paper under the section of “RQ3. Strategies and Approaches”.

Apart from other motivations like curiosity and interest to see the outcome of ARC Angels, few investors invested because they were asked for investing. These employees justified their approach by expressing their busyness at work, and that they fell short of time to research projects of interest. One talking about this aspect, one of the informants gave a one liner reason behind his investment by saying:

Because I knew the person, and he asked me to invest.

Of course, investors were intuiting the intentions of the proposers. Many Enterprise proposers appealed to interests and concerns that went beyond the individual. One proposer articulated this general sentiment as,

I guess that my perspective was ... what would be useful for the lab as a whole, rather than, you know, picking up for an individual benefits standpoint... It just seemed like a way to take advantage of a unique opportunity to do things good for the lab.

Incentives offered depended upon the type of projects. Incentives ranged from health training, to visiting to conferences, to getting to use newly bought robots and cameras. And, as is the case with Internet platforms; acknowledgements, gratitude and services were among the other incentives offered.

6.3 RQ3. Strategies and Approaches

Motivation and incentive may inspire people to participate, while strategy and approach are the next steps leading towards crowdfunding actions. In this section, we state the differences between Internet and enterprise Crowdfunding from the perspectives of *strategies* and *approaches* taken by our participants. For each, Internet and enterprise platforms, we’ll share the results in the areas of research and investment.

6.3.1 Internet | Research

Research into crowdfunding projects may be an important step towards executing a plan or taking an action. On this topic, the differences between Internet and Enterprise sites were important, as were the roles of the participants.

Even though on the Internet participants were spending their own money, most of them claimed that they performed very limited research for projects to invest in. They were mostly directed to the crowdfunding site from social-networking and news sites. One of the investors who uses newsletters, told us about it:

I get updates about some of the current projects. I would go to my personal mail to look at those, but I don’t actively browse.

In non-commercial crowdfunding sites, however, Internet investors spent large amounts of time and researched extensively before they made funding decisions:

I’ve spent vast amounts of time on Kiva... over the years; I have spent excessive amounts of hours. Exploring their field partners, uncovering what I thought were some shady dealings with their field partners. I was also early founder of a group called Kiva Friends.

6.3.2 Enterprise | Research

In contrast to the Internet platforms, we found that it was the investors, not the proposers, who spent more time on research. On further investigating upon this finding, we learned that the ARC Angels website was a one-stop point to explore projects, and the fact that projects were proposed by colleagues made participants interested in researching more. Talking about it, one of the investors on Kickstarter told us that:

For the enterprise one, I looked at the projects and paid attention, but for Kickstarter, I don’t really ... I mean, I read a little bit about the projects, that I heard from someone else but I don’t spend a lot of time on it.

This phenomenon was not observed on the Internet platforms. We hypothesized that an investor on an Internet crowdfunding site can choose the time to explore projects and choose one or more for investment. By contrast, ARC Angels imposed a deadline of one month for all investment actions. This called for the prioritization of actions.

The fact that investors researched less on the internet (using their own money), while spending more time exploring enterprise projects (using the enterprise's money), is very interesting. In order to understand this phenomenon further, we investigated investor's strategies and approaches on investment.

6.3.3 Internet | Investment

The source of investment in an Internet platform happens to be investor's personal money. During our interviews, we found that participants spent more than US\$100, and mostly on projects that matched their interests, and simultaneously led to a tangible return that they can own. In general, participants found the model of crowdfunding interesting - where proposers get a market to sell the service or product, while taking money to develop the same. One participant discussed this by saying:

I like this concept of crowdfunding, I get to learn and kind of buy interesting products, while they get a base market ready with funding from them.

In micro-lending platforms, however, the nature of the investment is different, investors loan their money to recycle, and to do social good. Since the money is never lost, investors are willing to make bigger investments; and can recycle it repeatedly. One of the investors we talked to has about \$33K in cycling money, and has been investing/recycling money since May 2007. She told us that:

My total deposits overtime in Kiva were over \$33K, and I've recycled them to lend about \$154K, I've made 5800 loans.

In summary, we learn that investors mostly spend in the range of something they can afford on their own, and the amount that they would reasonably invest for a product or cause. Due to the nature of micro-lending platforms, the investment money may be larger.

6.3.4 Enterprise | Investment

In contrast to the Internet cases, the source of investment in an enterprise platform is the corporation. And as mentioned above, the motivation for most of their investment is in the benefit of the company. Unlike internet, we observed that investors moved their money from one project to another, especially from the projects with low probability of success - thereby, also validating an earlier point of their bent for research and engagement on the website. During our interviews, informants told us that investors diversified and distributed their investments so as to contribute to maximum number of projects. For example:

My strategy was to spread my support, by giving \$100 each, and towards the end, due to the rule that I can switch my money around I took my money out of the sinking ship.

Though investors were taking these approaches to make their contribution have impact; there were others who preferred to swap the investment in negotiation with others to invest in theirs. The investor describes his approach as:

I did talk to another person, who had a similar project, and I said, if you fund mine, I'd fund yours.

The four-week, time-limited schedule of the trial also affected investors' strategies:

Use it or lose it was definitely an incentive to spend all your money.

What would be your spending approach if \$500 came from your group budget? The majority of the participants said that it would be different from the way they currently spent in ARC Angels. If the money came from their group budget, then they would invest the money on the intersection of group's interest and personal interest.

In some cases, investors took coordinated action (see also [40]). In one group, members were told to invest in projects closer to group's interest. Their 60-70 members primarily invested in a particular project, raising \$20K. In contrast, members of other research groups were more flexible in taking their decision in ARC Angels; hence, causing differences in the choice of projects under this new situation.

There were investors who didn't get a chance to invest in projects of their choice. By the time they were investing; those projects had already reached their funding targets, so they invested in any leftover project to spend all \$500. Under these circumstances, they would use different strategies:

There should be no upper limit; otherwise we have to invest in non-interesting projects due to use-loose.

In one of the rare scenarios, there was an investor who said that he would spend project budget on service/cause, talent improvement, helping someone lower in rank to send to conference or educational training.

I would invest in travel for someone who can really benefit from it. So I prefer career development for a junior person over conference funding for researchers.

The source of investment was one of the core differences between Internet and enterprise crowdfunding. To gain insight into how people thought about their spending, we asked two hypothetical questions, moving from organizational funds to more personal funds.

What would be your spending approach if \$500 were given to you, under the theme of "use it or keep it", rather than current theme of "use it or lose it"? The majority of participants said that it would be different from the way they currently spent at ARC Angels. If the money was given to them for use *over time*, then they would partially invest back in projects, or fully if the project was extremely interesting and would benefit them on a personal level. Most of the participants wanted to give the money back to the lab; while very few opted for keeping the money to themselves. One of our participant insisted on such practice on group level, and thought:

Would contribute personal money if my efforts are combined with others, to get more.

Some participants considered the action to be similar to donation; while some thought that it was ethical, moral and right thing to do. One of our participants shared this view:

If you have been given funding, then invest, that's what honesty demands.

Some investors wanted to be able to add their own funds. One of the investors said that for her, interest is the prime motivation, and there were projects where she wanted to invest in, more than \$500, so if personal money is allowed, she would have given away \$1000 to "more interesting and deserving" projects.

6.4 RQ4. Collaboration and Relationships

Previous subsections of the Results, contained hints of collaboration. For example, many investors thought about group needs, or were influenced by their peers. In this section, we'll discuss this theme in detail.

6.4.1 Internet

Most Internet investors told us that it was uncommon for relationships to play a role while investing in crowdfunding projects, despite a few cases of appeals received from school contacts or relatives. In general, for Internet investors, relationships or collaboration did not play an important role.

6.4.2 Enterprise

Though interest and benefit of the lab was the motivation behind most of the enterprise investments, there were participants who invested in projects based on relationships. One of those investors told us,

Knowing... the person that submitted the project, and that was also an incentive... if I know a person, and maybe [he] walks by my office, and tells me more details... I have more incentive, definitely!

Similarly, we also observed the role of relationship among volunteers. They preferred knowing a person before working with them, as one of them said that:

I couldn't have worked with someone I cannot get along with

In ARC Angels, investors and proposers collaborated with pre-funding volunteers, organizing discussion and the recruitment of other investors. Social networking was important: a few proposers who were new to the lab reported more difficulty in finding investors. The type of interesting collaborations we observed can be classified into 3 types. For these three types, we foreground the role of proposers, because they were carrying out a collaboration with investors from their own groups.

In **inter-group collaborations**, a general idea among more than one groups is discussed and being proposed by a single proposer from one of these groups. The proposer of "Polymer Miner" (big data and materials science) said,

I called the colleagues of my group, told about the project and asked their support. And some of the colleagues forwarded to their friends... [T]his project is in collaboration between my group, me and a [colleague] from the Material Sciences group. So, she also tried to get help from her colleagues. That's probably why we could get more support.

Similarly, the "Digital Library" project had support of several groups within a community of practice.

In **intra-group collaborations**, the proposer attempts to collaborate within his group to gain funding. The idea proposed is usually of the interest to the group, rather than entire lab. The proposer of the "Storage Research Strategy Offsite Meeting" project recruited pre-volunteers, and marketed the project primarily among 60-80 Storage group members, ultimately raising \$20K:

I recruited about 8 people, and we... hit our target audience directly and personally. And made sure that everyone was at least approached personally, in addition to emails, and in addition to lines up in the corridor, and in addition if someone said that they were interested and I was seeing them not doing it, I followed them up by [instant messaging] to

give them a nice reminder; and along with links straight to the page. So that they can do it right then and there.

In **inter-group distributed collaboration**, more than one person proposes similar projects within a group, such that at least one of them gets funded. The idea proposed is not limited to the group, but can benefit the entire lab. In one such project, one proposer raised the money needed for one remote control video camera; while a second proposer raised further money for two remote control video cameras. Their combined projects had the sufficient equipment to move forward.

In a second example, there were two CPR training projects, which involved a different form of collaboration. In these cases, one training session could accommodate only a limited number of trainees. Demand for the training was greater than the "supply" in a single session, so a second proposer initiated a second project for the second workshop, and both workshops were funded.

7. DISCUSSION

The research literature suggests that the structural parameters of Internet crowdfunding and organizational crowdfunding are different [3, 11, 17, 19, 28, 30, 34]. This paper provides the first direct comparison of the experiences and dynamics of these two forms of crowdfunding, and it accounts for some of those differences because of context, rather than structure alone.

7.1 Summary of Findings

RQ1 asked about the general experiences of investors. In our analysis, the Internet experiences tended to focus on material goals (for self or for others), while the enterprise experiences tended to focus on shared services (or services for other employees), and the sharing of ideas for new initiatives. These general emphases are consistent with the studies of Internet crowdfunding as an individualistic activity [3, 17, 30, 37], and organizational crowdfunding as a socially contextualized activity [28, 29, 34].

RQ2 examined the incentives offered, and the motivations of the investors in relation to those incentives. We found that *personal interest* and values were major motivations in both the Internet and enterprise environment. However, the two environments differed in terms of the impact of the incentives or rewards. Internet crowdfunding was often shaped by those incentives, while this phenomenon was generally rare in enterprise crowdfunding. The enterprise experience was also characterized by a view of shared benefits from investments – "if the lab benefits... we benefit." The theme of sociality appeared again in comments about why people chose particular projects – "...because I knew the person" (i.e., the proposer). For similar results regarding sociality in organizational crowdfunding, see [28, 34].

RQ3 explored investors' strategies. Investors tended to make quick decisions in Internet crowdfunding (except for micro-lending), whereas they tended to put more effort into researching different proposals in enterprise crowdfunding. In the enterprise setting, people had precise limits on time and on the funds available for investment. The awareness of limitations may have led to a sense of responsibility in spending the available money: "My strategy was to spread my support..." and "...spend all your money," because "that's what honesty demands." In keeping with the sociality themes that we reported for **RQ1** and **RQ2**, we observed that people sometimes traded investments for one another's projects, or that they coordinate their investments across a group of investors.

RQ4 turned out to provide a strong summary of the differences we observed that were associated with sociality. Investing on the Internet was, for the most part, a solitary experience. Investing in the enterprise appeared to take place within a social matrix, based on extended personal knowledge, preferred co-workers, and three configurations of collaborations. In at least one case, the conventional dynamic of *proposer-initiative* was reversed, when the demand for a particular project led to a second person proposing a second instance of the project, so as to accommodate everyone who wanted to be involved in the topic.

These social themes are similar to published results, but provide a broader and in some cases deeper understanding. Muller et al. reported a sense of community in enterprise crowdfunding [28]. Our results show the linkages between social sharing and the methods for coordinating action (e.g., co-investing or responding to investor-demand), the sense of responsibility to spend for the general good, and the belief that benefits for larger groups of employees would be reflected in benefits for individuals as well.

In a university environment, Sakamoto and Nakajima described the use of a *local currency* (i.e., a currency without value outside of the crowdfunding environment) [34]. Some of their participants said that, for them, the “mission” (i.e., purpose of a shared activity) was “more important than the amount of the reward.” Others expressed a responsibility to spend the limited amount of currency on behalf of the group. While ARC Angels took place in a different, industry setting, we can nonetheless see parallels. The limitations of time and total currency amount may lead to a stronger focus on group needs and responsibilities to meet those group needs. The embedding of the crowdfunding activity within an existing organization appears to transform an individualistic investment experience of Internet crowdfunding, into a collaborative, socially-informed experience of organizational crowdfunding.

7.2 Implication for Design

Organizational crowdfunding appears to have a strongly social nature. However, the available models of crowdsourcing dynamics and descriptions are based on the relatively individualistic, entrepreneurial model of Internet crowdfunding.

Future websites and related infrastructures for organizational crowdfunding should experiment with enhanced collaboration features. In general, each website provides a template for a project proposal. Based on the results of **RQ1** (which emphasized employee’s consciousness of who would benefit from a project), it may be useful to include a specific section of the template to discuss benefits and beneficiaries. Investors could use this information for better-informed investment strategies.

Employees’ comments regarding **RQ2** (incentives and motivation) showed that incentives and awards had relatively little impact within enterprise crowdfunding. These acquisition-oriented features may have no useful place in enterprise settings, or they may need to be radically rethought for a collaborative environment.

Our observations in relation to **RQ3** (strategies) indicated that employees feel a responsibility to spend their budgets for the benefit of the larger group of employees. It may be useful to help investors to manage their distribution of funds to multiple projects, and perhaps to compare their investment patterns with the patterns of other (anonymized) investors. It may also be useful to help employees to manage limited time and limited budgets, perhaps by offering a choice of investment policies along with

user experience features to support those policies (e.g., spend-early, spend-late, spend-all-at-once).

Finally, our findings regarding **R4** (collaboration) suggest that enterprise crowdfunding can engage employees in diverse forms of collaboration and partnership. We may want to experiment with alternatives to the entrepreneurial models of Internet crowdfunding, to allow joint ownership of proposals. We may also want to explore extended social supports for investors, volunteers and other stakeholders in projects.

It is possible that some of these design ideas may be useful for Internet crowdfunding as well. The design recommendation to include an explicit statement of benefits and beneficiaries may prove useful in Internet crowdfunding websites that focus on social responsibility and/or micro-lending (e.g., [14, 22, 24]; see also [13]). There may also be lessons in the limited time and limited budget aspects of organizational crowdfunding. For example, would project-oriented Internet crowdfunding sites, such as [20, 21, 32], have greater project successes if they organized time-limited topical “rallies” to focus investors’ attention? Finally, the individualistic models of Internet crowdfunding have done well in Western cultures – which are themselves highly individualistic [18]. Would a more group-oriented, collective-ownership model of project proposals and investments be more successful in collectivist cultures?

7.3 Limitations

We note that, of course, ARC Angels took place in a single research lab in a single company in a particular industry. We do not know how generalizable these results are. We also do not know how sensitive these phenomena are to particular attributes of the trial, such as dollar amounts, time limits, and social media resources. We hope to conduct crowdfunding trials in other organizations and in other companies, where contrasting circumstances may inform and extend the findings that we have reported in this paper.

8. CONCLUSION AND CONTRIBUTION

We provided a first direct comparison of experiences in Internet crowdfunding and organizational crowdfunding. Using Grounded Theory Method, we developed four related perspectives on enterprise crowdfunding, suggesting that crowdfunding in organizations may be a strongly social, collaborative activity. We explored possible reasons for the contrast between this finding, and the more individualistic accounts of crowdfunding on the Internet. Finally, we offered implications for design of organizational crowdfunding websites, and we suggested that some of those design innovations may be valuable for Internet crowdfunding websites, as well.

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