

Understanding Resource Exchange in Crowdfunding Platforms

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1. INTRODUCTION

The popular press heralds crowdfunding as a way for people, typically with limited access to capital, to raise money for ventures, and for a crowd, a distributed network of individuals, to support them. They celebrate its potential to spur new ventures and employment to fuel the economy [10]. On Kickstarter.com, one of the largest crowdfunding platforms, over \$730 million has been raised from over 5 million individuals [8]. These funds have supported a wide range of project sizes, ranging from hundreds to millions of dollars each. As such, Kickstarter and other crowdfunding platforms have enabled thousands of new creative projects to come to fruition.

However, if we only focus on the financial nature of crowdfunding, we would miss the exchange of other resources that are critical for the success of crowdfunding projects. To this end, we adopt resource exchange theory (RET) [3] to provide a new perspective for researchers of online communities who seek to understand and support the ways in which groups of people interact online. We analyzed 81 crowdfunding communities to identify the current design space of crowdfunding platforms and identify user roles, the mechanisms in place to broker the exchange of resources, and the resources that are exchanged within current crowdfunding platforms. We then used resource exchange theory as a lens for hypothesizing future exchanges as brokered by crowdfunding platforms.

The key contributions of this research are:

- An analysis of the current design space of crowdfunding platforms
- Design exploration for future crowdfunding platforms
- A discussion of how resource exchange theory can be used to study and design online communities

Crowdfunding is a critical new area of study for researchers and designers of online communities as it represents a growing computer-mediated phenomenon that encourages individuals and teams to engage and collaborate collectively in new ways online. In addition to crowdsourcing the raising of funds, crowdfunding platforms and the micro-communities therein have emerged to crowdsource the solving of social problems, design, feedback and generally leverage the wisdom of a group of supporters [4]. In this paper, we use resource exchange theory to examine the current landscape of existing crowdfunding platforms. We extrapolate our findings to suggest how crowdwork and other online communities can be designed to foster and implement new forms of online exchange.

2. METHODS

We conducted a survey of crowdfunding platforms to understand the exchange of resources and the mechanisms designed to facilitate this exchange. Similar to, and drawing inspiration from, the categorization scheme from Malone's genome of collective intelligence [11], we use the principles of RET to guide our categorization of crowdfunding platforms. Specifically, we sought to answer the following questions:

- What are the roles assigned/available to participants? (Who?)
- How are resources being exchanged? (How?)
- What resources are exchanged between different roles? (What?)

2.1 Data

We initiated data collection for crowdfunding platforms by performing web searches on Google for “crowdfunding”, “microfinance”, “micro-loans”, “Kickstarter” and “Microventures” in combination with the keyword, “platform”. Additionally, we searched news media for discussion of existing platforms and announcements of new platform launches. All searches took place between May and July of 2012. The search resulted in 81 platforms that met our defined criteria for crowdfunding.

2.2 Analysis

We developed our findings through an iterative process that began with examining the roles assigned to users on each platform. We then used pairs of roles to examine possible interactions involving one-for-one resource exchange. We used a process of selective coding to flag features of the platforms that facilitated the exchange of resources, resources exchanged, and dyads of resource exchange [1]. After identifying all of the instances, we clustered features, resources, and dyads into conceptual categories. Simultaneously, we researched pertinent literature to understand existing theory in resource exchange and uncovered related phenomena in social computing such as crowdsourcing and online communities [5,6,7]. Finally, we plotted the exchanges we observed on the RET model as a graphical means of representing patterns of exchange.

3. RESULTS

Our findings suggest that crowdfunding platforms support the exchange of all six resources described by RET: money, love, information, status, goods, and services and exhibit a variety of structures to facilitate exchange [12]. While every platform is different, we have grouped the structure of exchange on each platform into either mediated, unmediated, and hybrid structures. We also describe four roles in online crowdfunding: requestors, respondents, community members and general public. For each of these roles, we have explored possible future dyads of exchange.

3.1 Platform Mechanisms

Mechanisms describe how resource exchange is scaffolded, whether it's through an established platform or a custom solution. We find that resources are exchanged through mediated, unmediated, and hybrid structures. The mediation structure category describes the process by which each platform handles the exchange of resources. We categorized these structures into three categories: *Mediated*, *Unmediated*, and *Hybrid*. Kickstarter is the best example of a *mediated* platform, since all communication must go through official Kickstarter channels. We consider an *unmediated* platform where individuals collect funds in a free-form manner, via PayPal payments or other independent means. Finally, a *hybrid* platform is a combination of the two other approaches.

3.2 Directness of Resource Exchange

The directness of access to participants is an important factor in the evaluation of any web-based system, and, as such, is also an area of interest in within the study how individuals use the internet to work collectively [2,5]. Using this perspective, we categorized crowdfunding platforms based on how direct and transparent was the means of resource exchange for each of the respondents' respective contributions. We have categorized the results into: *Direct*, *Indirect*, and *Inaccessible*. Platforms like Kickstarter allow *direct* exchange because they allow individuals to communicate with each other without impediment, while platforms like Kiva only allow for *indirect* exchange because messages between individuals are mediated by platform moderators. On the extreme end of the spectrum platforms like Zidisha do not allow contact between members and exchange is *inaccessible*.

3.3 Roles on Platforms

In many online crowdfunding platforms, users holding different roles afford different dyads of resource exchange. For example, on Kickstarter, only users who are defined as “project backers” can post a comment on projects, while on a competing platform, RocketHub, any member of the general public can post a comment on any project. To this end it is important that we describe the roles available to participants in

online crowdfunding platforms. There are four universal roles on online crowdfunding platforms, although different platforms allow for different exchanges between roles. The roles we have identified are: Requestor, Respondent, Community Member and General Public

The requestor is a common role to all crowdfunding platforms. The requestor is the individual who is asking for funds to complete a project. This term may be interchangeably used with “project creator”. In some cases the role of the requestor may be more than one individual as is often the case with larger, team projects. The respondent is a common role in online crowdfunding platforms. The respondent is any individual who commits funds towards the completion of a crowdfunding project. This term may be interchangeably used with backer, supporter or funder. A community member is a member of an online crowdfunding Web site who is a potential contributor to a crowdfunding campaign. Certain crowdfunding platforms allow registered users who are not backers of projects to communicate with requestors, while others do not. Requestors and respondents are subsets of the larger group of community members. A member of the general public is an individual who has not registered as a user. This role is included since some platforms such as CircleUp, a crowdfunding website where backers purchase equity in startups, do not allow the general public to even peruse the list of active projects [9].

3.4 Requestor Resources Received

After categorizing the possible user roles on crowdfunding platforms, we then investigate the resources that are received by each of the roles. In each case we outline the possible resources received and a potential exchange example. For the role of the requestor, we identified Money, Information and Love as possible resources to be received.

3.5 Respondent Resources Received

We can also categorize crowdfunding platforms by what resource(s) are exchanged by the respondents. We have identified example exchanges where respondents receive Information (updates), Status (“Backer”), Love (gratitude), Services, and Goods (as results of the campaign).

3.6 General Public / Community Member Resources Received

In nearly all cases the only resource received by the general public as well as community members was information. Most often, the general public was afforded the ability to view project pages (information) in the same manner as community members.

4. DESIGN IMPLICATIONS

This study provides further evidence that crowdfunding platforms are not just vehicles for the exchange of financial resources for material goods; rather they are complex platforms that broker the exchange of information and other resources through collective processes [4]. As such, online crowdfunding platforms serve as a stage to consider the design of future crowdsourcing platforms and other online communities. We asked: *how can we use the lens of resource exchange to describe how crowdfunding platforms can further leverage the collective intelligence of the participants*. We did this by considering pairs of the individual roles described above

For each dyad of roles we looked at each possible resource exchange pair. This exercise did provide design options for future online crowdfunding platforms by describing possible new roles for members of the online crowdfunding community. Our overall suggestion is to expand the role of the respondent to allow these individuals to commit more than just funds. As one example, a *worker* could be an individual who helps a project creator by performing tasks (services) in a manner similar to Amazon Mechanical Turk Workers, in exchange for rewards (goods or services) that would otherwise be obtained by backing the project. Second, a *consultant* could exchange feedback to crowdfunders in exchange for goods, services or money. A crowdfunding platform such as Kickstarter could retain a group of crowdfunding “experts” who have successfully launched several projects, to be consultants on projects. We argue that the expansion of roles on crowdfunding platforms could better leverage the collective intelligence of the participants to further goals of the platform as well as individuals who use these platforms.

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