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A Conceptual Framework for Understanding Crowdfunding

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Abstract:

Crowdfunding is a rapidly growing technology-enabled process that has the potential to disrupt the capital market space. In order for this process to work efficiently, it is important to clarify the issues surrounding the phenomenon from the founders', the backers', and the technology providers' viewpoints. We begin with an ecosystem view to understand the stakeholders and their roles in the crowdfunding process. We review the literature with a focus on how current research fits into the overall crowdfunding phenomenon. Guided by typology and classification research approaches, we identify six distinct crowdfunding business models: private equity, royalty, microfinance, peer-to-peer lending, rewards, and donation. Based on identified roles and crowdfunding business models, we propose a conceptual research framework. We conclude by showing how current research fits into our proposed framework and offer suggestions for future research directions.

Keywords: Crowdfunding, Crowdfunding Models, Stakeholders, Typology, Research Framework, Literature Review, Rewards Crowdfunding, Private Equity Crowdfunding, Royalty Crowdfunding, Microfinance Crowdfunding, Peer-to-Peer Crowdfunding, Donation Crowdfunding.

1 Introduction

Crowdfunding is a new technology-enabled innovative process that is changing the capital market space. Internet-based applications, particularly those related to Web 2.0, have had a significant impact on sectors of society such as education, business, and medicine (Alexander, 2006; Andriole, 2010; Giustini, 2006; Lyytinen & Rose, 2003; Wagner & Majchrzak, 2007). However, until the advent of crowdfunding, technology has had little influence on the capital markets in that entrepreneurs and small business were restricted to seeking capital to meet their funding needs through traditional channels shrouded by information asymmetry and personal networks (Shane & Cable, 2002). However, this left a large segment of fund-seekers unserved by current practices. New innovations, such as crowdfunding, emerge in response to these unfilled needs and gaps in services currently provided (Christensen, 2013).

The unfilled gap in the capital market place can best be understood by noting that typically, startup firms use venture capitalists, angel investors, banks, and what O'Gorman and Terjesen (2006, p. 70) deem as informal investing (i.e., "friends, family and foolhardy investors") for raising funds. However, the capital markets are still in many instances operating on rules and regulations established as a reaction to the stock market crash in 1929. For example Rules 504, 505, and 506 under Regulation D of the Securities Act of 1933 prohibits public advertising, and private offerings are limited to accredited investors[1], which significantly reduces the number of individuals who can participate in private equity[2] (Levin, Nowakowski, & O'brien, 2013). In addition, the dot.com bust of the early 2000s along with the economic crisis beginning in 2008 greatly constrained the capital markets, significantly reduced debt financing for small and medium-sized businesses ("Capital remedy", 2013), and curtailed venture capital (VC) financing by over 82 percent between 2000 and 2009 (PricewaterhouseCoopers, 2010), which made access to funding the most critical resource for entrepreneurs and businesses in the early stages of formation (Evans & Jovanovic, 1989). And while evidence shows that VC funding levels have returned to 2007 levels, these sources are investing much later in the business cycle; thus, start-up firms remain starved for cash (Bains, Wooder, & Guzman, 2014).

Despite these funding difficulties, or perhaps because of these difficulties, a new process for obtaining capital has emerged in response to the current ineffective institutionalized capital markets (Caldbeck, 2011). Known as crowdfunding, the concept involves using the Internet and the power of the crowd to raise capital in an open and transparent manner. The crowdfunding phenomenon represents an ICT-enabled solution to the constraints and limitations that have arisen from institutionalization and economic pressures in the capital markets. Given the importance of entrepreneurs' and small businesses' role in a strong economy (Acs & Armington, 2006; Audretsch, Keilbach, & Lehmann, 2006; Audretsch & Thurik 2001), understanding the use of technology to overcome many of the current financial constraints in the capital markets is critical to a growing economy.

Given the newness of this funding source and the increasing reliance that entrepreneurs will likely have on crowdfunding, we need to better understand this phenomenon. However, to date, little has been written about it in a comprehensive, cohesive manner, and we sense that a certain amount of confusion surrounding crowdfunding exists.

In Section 2, we overview crowdfunding fundamentals and discuss the ecosystem of participating actors. In Section 3, we review the literature and identify areas of confusion or non-cohesion. In Section 4, we develop a classification scheme of crowdfunding operating models, and, in Section 5, we richly describe each model with an operational overview, in-depth profile, and notes on the impact of technology on each model. In Section 6, we discuss all six models including the meaning of success and failure in crowdfunding and the evolving nature of the phenomenon. In Section 7, we propose a research framework and conclude by showing how current research fits into our proposed framework and offer suggestions for future research directions.

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[1] Banks, trusts, and even individuals can qualify to be an accredited investor. For an individual to qualify, they must earn earns over $200,000 per year ($300,000 if married) or have over $1 million in assets (excluding their home). For a full list of who qualifies as an accredited investor see http://www.sec.gov/answers/accred.htm.

[2] While illustrative of the institutionalization of the capital markets, and an impetus toward the formation of crowdfunding, it is noted that the Jumpstart our Business (JOBS) Act of 2012 has repealed both of these regulations; however the actual laws are still being formulated by the SEC, especially regarding the selling of private shares to non-accredited investors.

2   Background

2.1   Crowdfunding Fundamentals

The term crowdfunding, first coined in a blog post by Michael Sullivan in 2006, has its roots in charitable donations (Castelluccio, 2012), but it is now used to support projects as diverse as record albums, books, ecology trips, scientific research (Aitamurto, 2011, Gaggioli, 2013), veteran's causes (Brady, 2013), and college tuition ("Start me up", 2013). It has since been defined as:

> The efforts by entrepreneurial individuals and groups—cultural, social, and for-profit—to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries (Mollick, 2014).

The concept and use of crowdfunding is evolving and is being used in increasingly creative ways. Crowdfunding's core elements, however, focus on technology, capital funding, and the power of the crowd, which enable many small efforts to amass into a significant financial outcome. The crowdfunding process relies heavily on technology, both in terms of the websites on which it takes place and the technologies that provide social media connections that enable awareness about a project to spread.

Crowdfunding's impact, represented by some statistics from Kickstarter.org, the world's largest crowdfunding site, gives some perspective. At the beginning of 2014, Kickstarter.com's website reported that pledged funds had topped $1 Billion USD from over 5.7 million backers (1.7 million repeat backers) who have made over 14 million pledges. In 2012, 15 projects reached donations above $1 million dollars; however, by March 2014, this number had grown to 58 projects topping $1 million. Massolution, a crowd-sourcing and crowdfunding research center estimates that the crowdfunding market as a whole grew to $5.1B in 2013 and expectations are that the market will continue its rapid growth (Massolution, 2013).

Crowdfunding typically occurs through a crowdfunding website of which many have emerged over the last several years. The founder posts a description of their idea or project on such a website to expose their idea to potential backers. Individuals discover projects through avenues such as social media or by browsing a crowdfunding website. If the individual believes in the idea and would like to help make the project possible, the individual can back the project by contributing money via the crowdfunding website. Typically, the amount given by a backer is small relative to the overall funding needs. The idea behind crowdfunding is that, if many individuals donate a small amount, large sums of money can be raised quickly and efficiently. In addition to contributing monetarily, individuals can also help a project by spreading awareness through social media about projects they support, which builds up a crowd of interested parties willing to invest.

2.2   Crowdfunding Ecosystem

Understanding who the actors are in the crowdfunding space is important to understanding how crowdfunding works. Different participants influence crowdfunding in diverse ways by creating an ecosystem that determines the way the process functions and the practices that are enabled. A useful way to understand the ecosystem is to identify the stakeholders and their respective influence on the process. Traditionally, a stakeholder refers to "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984, p. 46) and can be identified as those that have power, legitimacy, and impart a sense of urgency in the organization (Mitchell, Agle, & Wood, 1997). The purpose of stakeholder theory is to uncover the roles in an organization that go beyond a focus on upper management and shareholders whose single stake is the mantra "increase shareholder value". A stakeholder approach has been used in contexts outside a profit-centered business to explore the roles and interrelationships in contexts as diverse as e-government (Flak & Rose, 2005), healthcare (King, 2008) and cloud computing (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011). Stakeholders are not isolated groups but act and interact with each other to create a dynamic environment (Laplume, Sonpar, & Litz, 2008). Using a stakeholder approach, in Sections 2.2.1 to 2.2.5, we review the major participants in the crowdfunding ecosystem including what each contributes to the system and what each expects from the system.

2.2.1   Website Providers

Crowdfunding at its core is enabled through technology; therefore, website providers play a crucial and central role in the crowdfunding phenomenon. They provide the technology backbone that allows founders

to expose their project to a large number of potential backers. But the providers deliver more than a stage for the project: they also facilitate communication between the founder and backers (both potential and actual) through features such as a comment section, project update capabilities, and email exchanges. Website providers aim to make the connection between founder and backer efficient ("Narrowing the field", 2013). Links to social websites such as Facebook and Twitter allow supporters to easily promote a project in their social networks. Website providers have integrated third party payment processing capabilities that provide privacy and assure backers of secure payment processing. Thus, website providers may act as intermediaries, orchestrators, rule enforcers, and distribution channels (Ordanini, Miceli, Pizzetti, & Parasuraman, 2011). The design of crowdfunding websites is still evolving and, in order to provide a sufficient revenue stream, future iterations might address varying levels of service (e.g., basic, registered, and premium) to support increasing functionality and levels of technology (Braet, Spek, & Pauwels, 2013).

Technology is often credited with providing transparency; however, in some crowdfunding contexts, websites actually limit access to information, which constrains transparency. Different types of information are privileged over others depending on the crowdfunding model. As such, technology provide transparency but only for certain types of information and to certain stakeholders.

Crowdfunding website providers are a critical actor in the ecosystem because it is through these websites that both a crowdfunding deal's structure and legal requirements are enforced (Gelfond & Foti, 2012). Although crowdfunding websites do not provide any guarantee that founders of funded projects will deliver on their promises, providers have already shown a strong desire and may benefit the most from preventing "crowdfraud" (Hamermesh & Tsoflias, 2013; Sigar, 2012).

Overall, the website providers' role is to create and control the crowdfunding process and ensure its smooth operation for both the founders and the backers. Website providers interface with all stakeholders and are the hub of the ecosystem.

2.2.2   Founders

We use the term "founder" to represent those individuals who post their idea on a crowdfunding website to receive funding. Individuals seeking funding come from a wide variety of backgrounds and have a wide range of goals. A variety of terms have been used in the literature, such as "creator", "borrower", "entrepreneur", "firm", "founder", "owner", and "start-up". However, many of these labels are too narrow and invariably leave out a portion of participants. For example, not all individuals seeking funding may classify themselves an entrepreneur or have a goal of starting a business. Of terms currently in use, we propose the term "founder", defined as "a person who founds or establishes" ("Founder", n.d.) to refer to those who start communities, charitable organizations, and businesses. The comprehensiveness of its meaning, and its current usage in the literature, lends credibility to the term.

The crowdfunding phenomenon is driven by founders' unfulfilled need for capital. The founders' role in the crowdfunding ecosystem is to envision a product or project and then present their ideas clearly and compellingly to would-be backers through the use of a crowdfunding website. During the campaign, founders control access to information by being accessible and transparent. In addition to raising capital, founders may use crowdfunding to test market an idea (Helmer, 2014), to gain exposure for future funding (Dingman, 2013), to gain validation (Gerber, Hui, & Kuo, 2012), and to build relationships by fostering open communication and collaboration with backers (Gerber et al., 2012).

Founders come to crowdfunding with a wide range of experience and can vary from firms with credentialed teams ("On the side of the angels", 2012) to individuals with little to no experience who are just starting college ("Start me up", 2013). Two aspects are important to consider: 1) business experience, and 2) product experiences and skills. Founders with business experience have started previous businesses or been involved in startup firms and have the advantage of a better understanding of what is needed to take a business from concept to a running concern. The second type of experience is related to the actual product or project itself. For example, an artist raising money on Sellaband.com may be an accomplished musician, but may have little business experience in marketing or distributing their produced album. The founders overall experience varies along these two dimensions: a founder may be strong in both business and project expertise, may being strong in only one dimension, or may have little experience or skill in either dimension.

A founder is often an individual but may also be a team of individuals working together to fund and complete the project. Teams can vary in capabilities as well: for instance, in some crowdfunding models, there is a mixture of members with business and product experience.

2.2.3   Backers

Equally important to the crowdfunding ecosystem are the backers of crowdfunded projects. The role of the backer goes beyond just contributing money: they also play a role in testing the market and providing judgment toward what is a good idea and whether a concept is worth pursuing. Backers can contribute monetarily and/or through the use of social media and their own personal networks by spreading the word about a project. Because their role extends beyond a purely monetary one, we use the broader term, "backer", in favor of other terms such as "consumer", "contributor", "crowdfunder", "funder", "investors", and "lender", all of which are currently in use in the literature.

There are numerous theories that may explain a backer's motivation for contributing to a crowdfunding campaign. For example, literature on altruism discusses warm glow giving (Andreoni, 1990); that is, the positive feeling one gets from helping someone else, and there is evidence that in some crowdfunding contexts altruism does exist (Burtch, Ghose, & Wattal, 2013a). Other motives might include egotistical motivation; that is backers participate because they want to be part of the project (Gerber et al., 2012) or may want others to recognize their participation. Early adoption may play a role, and evidence suggests that some backers focus on the material return received in exchange (Gerber et al., 2012). Although limited research has been conducted on backers' motivations for contribution in the crowdfunding context, in reality, it is most likely a combination of these factors. In exchange for their choices and contributions, backers receive extrinsic rewards (e.g. a return on their investment, a copy of the product, etc.) and an intrinsic reward (e.g., a "warm glow" or the feeling of being a part of something).

Backers' demographics are also varied. According to Quantcast (n.d.), Kickstarter's audience profile reports that the typical visitor to their website is a Caucasian young adult male with no children, an income under $50,000, and at least some college level education. However, these Kickstarter's visitors' demographic information is in sharp contrast to those crowdfunding projects where the founder is selling an equity interest to high net-worth accredited backers and the typical contribution amount is often in the tens of thousands[3].

2.2.4   Angel/VC Funds/Banks

We group this set of entities together as those who more traditionally fulfill the role of providing capital to founders. Current practices dictate a small group of gate holders who, through algorithms, personal networks, and back-room deals determine which founders will receive funding and which will not. Competition is high for VC funds, and anecdotal evidence suggests that less than one in one hundred to perhaps one in one thousand business plans presented to a VC are ever funded (Dos Santos, Patel, & D'Souza, 2011; Lavinsky, 2011). Crowdfunding, on the other hand, is a new technology-enabled innovation that significantly alters the institutionalized process of raising capital by founders and has been referred to as the democratization of entrepreneurial funding.

The question remains open about what impact crowdfunding will have on this group of stakeholders: will these traditional stakeholders be displaced or will they embrace crowdfunding? New entrants in a market can have several impacts: they can provoke a more highly competitive marketplace in which margins are reduced and consumers benefit. Alternatively, when demand for the product is strong, new entrants do not reduce the market share of existing firms but instead enlarge the market (Rigby, Christensen, & Johnson, 2002). So far, the latter seems to be the case with crowdfunding. There are several reasons for this. First, many projects are not appropriate for funding through traditional means because they have an unproven track record, may not have the growth potential that VC firms or angel financing seek, may be more artistic/less commercially focused, or because the funding is for a specific project as opposed to starting or growing a business (Levin et al., 2013; Macht & Weatherston, 2014; Manchanda & Muralidharan, 2014). For these projects, traditional forms of financing were never an option and, thus, crowdfunding has enlarged the market. Other instances show how traditional sources of financing may look to crowdfunding as a value-added step through which a market can be identified. For example, a VC firm may be more

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[3] These demographics are subject to change once the regulations from the JOBS Act of 2012 are implemented and firms can offer private shares to non-accredited investors.

willing to back a company if they have successfully proven, through crowdfunding, that a market exists (Burns, 2013).
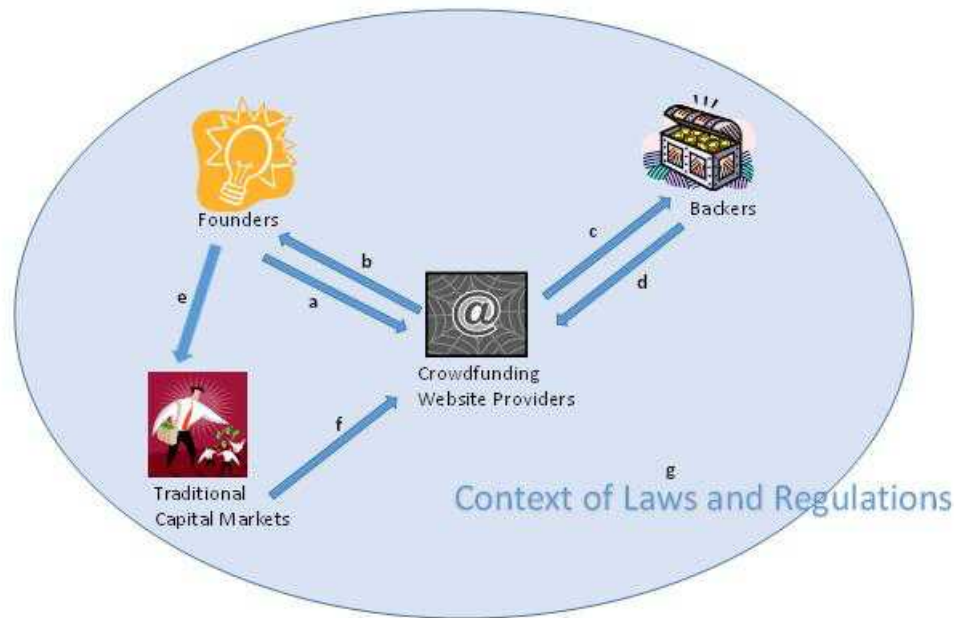
Each arrow represents:
a: A founder posts their idea/project on a crowdfunding website.
b: The website provider provides space to describe the project and features such as the ability to post a video, communicate with backers, tools to analyze traffic to the project page, and integration with third party payment processing systems to distribute funds to founders.
c: Backers use the crowdfunding website to explore projects and decide whether to contribute.
d: The website providers allow communication between the backers and the founders and provide secure payment processing system to collect the funds from the backers.
e: Founders will continue to use the traditional capital markets for some projects.
f: Traditional capital markets will turn to crowdfunding websites in some instances; for example, to validate whether a market exists and explore different price points.
g: All crowdfunding activity occurs in the context of laws, regulations, and ethics.

Figure 1. Crowdfunding Ecosystem

2.2.5   Legal/Ethical

Regulations control the environment so it is safe and fair for all stakeholders. Due to crowdfunding's global reach, some unique situations can occur when founders are in one country, backers are in a different country, and the website provider is in a third country. Researchers anticipate that the JOBS Act of 2012 will have a significant impact on equity crowdfunding in the United States (see Levin et al., 2013; Sigar, 2012; Williamson, 2013), which will allow public solicitation and the selling of securities to a broader group. Beyond federal legislation, states laws and licensing may also regulate crowdfunding (Gelfond & Foti, 2012). Washington State has gone so far as to initiate a consumer protection lawsuit against a founder for failure to perform on promises made in a crowdfunding campaign (Masnick, 2014).

Nonetheless, some legal/ethical issues are not so easy to anticipate. For example, a successful Kickstarter campaign to bioengineer plants that glow ended up distributing 600,000 seeds of the glowing plants. The project created an outcry from environmental groups; as Arthur Caplan, a bioethicist at New York University and an adviser to the Defense Advanced Research Projects Agency on synthetic biology, noted: "What if someone decides it would be cute to light up a national forest?" (Cha, 2013). Prior to crowdfunding, many legal and ethical issues would be addressed by VC firms as part of the vetting process. Taking projects directly to the crowd may bypass an internal control, but it does allow for more open debate, especially as it relates to ethical issues.

Figure 1 graphically represents the crowdfunding ecosystem with the relationships between stakeholders.

3 Literature

Because of crowdsourcing's newness, for our literature review, we looked broadly across all disciplines (See the Appendix for details and descriptive statistics). We identified almost 700 papers relating to crowdfunding, yet only a handful of empirically based studies have been published, which shows that research has been slow to investigate this phenomenon. The breadth of crowdfunding research remains mainly in the business discipline, with the highest concentration being in entrepreneurship and management, followed by information systems and marketing in that order. Secondary data predominates, followed by surveys. The ability to scrape websites to retrieve data is somewhat evident in the literature (and may account for the high number of secondary data studies), but authors must take care not to violate the terms and conditions of a specific crowdfunding website, which often expressly prohibit such activity (Allen, Burk, & Davis, 2006). Table 1 summarizes the empirical papers we found by topic area.

Table 1. Empirical Literature by Topic Area

Topic	Literature
Crowdfunding success	Allison, Davis, Short, & Webb (2014), Belleflamme, Lambert, & Schwienbacher (2014), Lin, Prabhala, & Viswanathan (2013), Mollick (2014), Ward & Ramachandran (2010), Zvilichovsky, Inbar, & Barzilay (2013)
Contribution behavior	Agrawal, Catalini, & Goldfarb (2011), Burtch et al. (2013a), Burtch, Ghose, & Wattal (2014), Gerber et al. (2012), Kuppuswamy & Bayus (2013), Zhang & Liu (2012)
Crowdfunding design	Cumming & Johan (2013), Ordanini et al. (2011)
Impact of crowdfunding	Mutengezanwa, Gombarume, Njanike, & Charikinya (2011)
Privacy in crowdfunding	Burtch, Ghose, & Wattal (2013b)
Venture capital financing	Bains et al. (2014)
Viability of crowdfunding	Braet et al. (2013), Ley & Weaven (2011)

Little in the way of confirmatory or contradicting results have been found, most likely due to the nascent nature of the research stream. But what we did observe in the current literature is a lack of agreement or in some cases absence of awareness of fundamental crowdfunding structures.

One specific area of general inconsistency concerned the various operating models prevalent in the crowdfunding phenomenon. By operating model, we refer to the processes and procedures in place governing the crowdfunding campaign that are set and enforced by the crowdfunding website provider. For example, projects on circleup.com support an operating model whereby the founder will give backers' an equity (i.e., ownership) interest in the business in exchange for the backer's contribution. Kickstarter.com uses a different operational model in that a founder gives a reward (i.e., incentive such as a copy of the product or a project memento) in exchange for the backer's contribution.

The studies describe a wide variety of crowdfunding models with disparate terminology. The following terms and descriptions were used in the literature we analyzed to refer to various operational models: "contribution", "donation", "equity", "lending", "loan", "microfinance", "patronage", "peer-to-peer", "pre-ordering", "reward", models with high risk/return ratios, models with low/medium risk/return ratios, and models with little or no risk. We further noted instances where the same crowdfunding model was referred to by different names and instances where different operating models were referred to by the same name. Beyond facilitating searching by using consistent keywords, having consistent names and meaning allows for the ability to compare and contrast findings between different models. Currently, the inconsistent nomenclature leads to confusion for researchers and readers alike.

In addition to inconsistent model names, we noted that papers acknowledged the various crowdfunding models in one of three ways. First, papers were silent and perhaps unaware regarding the type of crowdfunding being studied. This is problematic because, as we demonstrate below, there are fundamental differences between models that need to be considered to fully understand the underlying

processes taking place. Second, papers may have acknowledged specific models (despite using inconsistent terminology), and, while some papers noted the existence of other models, there was little to any discussion as to how the research fit into the chosen model, nor was there any explication of salient model characteristics that might influence the findings. Finally, a very small minority of papers (e.g., Burtch et al., 2013a) were cognizant of which crowdfunding model was being studied and noted how their findings fit into the structure of crowdfunding operational models as a whole. However, throughout all of the literature, a comprehensive view of crowdfunding models is yet to be presented.

Understanding the underlying structure of a phenomenon is important because it impacts the generalizability of findings and allows for useful insights that might otherwise be overlooked. This can create a problem when readers (or perhaps the authors themselves) assume a level of generalizability that may not exist. It can also have the danger of missing important insights into the inner dynamics of the phenomenon when the distinctive attributes of a model are not considered.

In addition, because our literature review indicates a multi-disciplinary nature of the crowdfunding topic, a common language and meaning is especially important to facilitate conversations between disciplines. Thus, in this paper, we derive a classification scheme of crowdfunding models and provide a profile of each model.

4   Deriving Crowdfunding Models

4.1   Classification, Typologies, and Systematics

Typologies and classification schemes can be used to structure complex heterogeneous phenomenon into homogeneous concepts that can then be analyzed and compared (Doty & Glick, 1994). They are valuable in finding uniformities on which explanations or predictions can be found or circumstances under which hypothesis are expected to hold true (Mckelvey, 1975). Similarly, systematics takes a holistic approach to a phenomenon and looks to "describe and understand differences and their origins, to explain [their] relationships with surrounding environments, and to arrange types of phenomena into a meaningful order" (Mckelvey, 1978, p. 1428). Theories of typologies and classification schemes originated in the biological sciences as a way to group species into homogenous groups in order to study them. And so, while much of science looks toward principles and theories that can unify and generalize (i.e., the science of universals), a precursor to this is an understanding of the differences; that is, the science of differences (Posey, Roberts, Lowry, Bennett, & Courtney, 2013). Without first understanding the differences, one cannot theorize about the commonalities. Typologies and classification research is used to understand and pursue the sciences of the differences.

Classification systems use a discrete set of rules to classify a given phenomenon into unique sets. Each subsequent rule further divides the previous set using an additional rule. (Doty & Glick, 1994). Typologies, on the other hand, are a theoretical abstraction of ideal types that represent unique sets in a phenomenon and are made up of first-order constructs that are theoretically derived (Doty & Glick, 1994). Crowdfunding is an emerging phenomenon and, as such, is still evolving. Our approach begins with an essentialist philosophy based in fundamental agreements from practice and the literature[4]. However, due to the evolving nature of crowdfunding, our scheme also allows for new forms of crowdfunding to be classified either in a defined model or for new models to spawn. In this sense, we take a hybrid classification approach.

4.2   A Scheme of Crowdfunding Models

We begin our classification by first separating crowdfunding from more traditional means of financing. Crowdfunding has been referred to as a process of disintermediation; that is, it removes the intermediation between entrepreneurs and investors from banks and brokerage houses to the crowdfunding website providers. Thus, our fist level in the scheme is the type of intermediation involved (traditional or crowdfunding website).

Next, we draw on the crowdfunding literature to understand how crowdfunding models have been typically described. Despite the confusion and inconsistent terminology, some common emerging themes center

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[4]   Essentialism, rooted in Aristotles's philosophy of "what it is to be", proposes that things have sets of attributes that are essential to their being; a class is defined by a small (essential) set of attributes that all members of the class must possess (Mckelvey, 1978; Wilkins, n.d.).

on what we call the "exchange"; that is, what the founder is willing to give up in "exchange" for capital. Three general exchange rules are evident:

- Equity: the founder gives the backer an interest in future profits of the business or project in exchange for invested capital.
- Debt: the founder returns the principal amount borrowed, with interest.
- Appreciation: the founder gives the backer his/her appreciation in exchange for their monetary contribution.

However, simply using the exchange rule appears to lack conceptual sharpness or precision. Consider, for example, the differences between two imaginary (but possible) equity crowdfunding projects. The first project expands an existing firm's premium vodka line: it hopes to raise $1.5 million dollars from backers where the minimum contribution is $25,000 and is limited to accredited investors. Backers receive an ownership interest in the company and are entitled to future dividends and a share of the profit if the company is sold. Now, consider a second project by a country music band raising $10,000 to go on tour for which the minimum contribution is $10. In exchange for the $10, the backer receives a share in the profits from the music tour. The mechanisms and motivations underlying these two projects will be different based on differences in risk. Risk is one means used in literature to distinguish between crowdfunding models (Ordanini et al., 2011).

One approach to categorize risk in crowdfunding is through two easily identified attributes: the amount of the capital goal and the average contribution from a backer. The capital goal is an excellent discriminator because it can act as a proxy for the size/complexity of a project because larger, more complex projects take longer to implement and their costs are harder to estimate; as such, they are more risky. Risk can also be defined as what is at stake from the backer; namely their contribution amount. Smaller contribution amounts represent less of a stake or risk than larger contribution amounts. This is easily understood by comparing a minimum investment of $25,000 in the premium vodka deal versus a contribution of $10 to help the band go on tour. Campaigns under each scenario are structured differently, the decision processes are different, and the stake in the outcome are also different. Thus, we propose risk as determined by the two attributes—capital goal and average contribution—to further discriminate each exchange class.

Using the two characteristics, exchange and risk factors, we propose six distinct crowdfunding models: private equity, royalty, microfinance, peer-to-peer, rewards, and donation. For each model, Table 2 denotes the type of exchange and the typical capital goals and contribution amount. The table also provides examples of crowdfunding websites supporting each model. In Section 5, we profile each model in detail.

Table 2. Summary of Crowdfunding Models

Model	Exchange	Typical capital goal and contribution	Examples
Private Equity	Equity	Typical capital goal: high to very high Typical contribution: high to very high	CircleUp.com EquityNet.com
Royalty	Equity	Typical capital goal: low to medium Typical contribution: low	Sellaband.com SellanApp.com Appsfunder.com
Microfinancing	Debt	Typical capital goal: very low to low Typical contribution: very Low	Kiva.com Opportunity.org
Peer-to-Peer	Debt	Typical capital goal: medium (but wide variety) Typical contribution: relative to capital goal	Lendingclub.com Prosper.com GrowVC.com
Reward	Appreciation	Typical capital goal: low to high Typical contribution: very low to high-medium	Kickstarter.com Indiegogo.com Rockethub.com
Donation	Appreciation	Typical capital goal: low to medium Typical contribution: very low	Experiment.com Donorschoose.org

In order to gain some perspective on how these crowdfunding models relate to each other, we present in Figure 2 a diagram showing how each model compares based on the typical capital goal and typical contribution amount. The size of the region is derived based on the normal range of values for each

model. For example, microfinancing (MF) projects show little variation and typically have very low to low capital goals and very low individual contributions from backers. Thus, the region in Figure 2, marked "MF", is relatively small, and positioned in the bottom left corner of the map. The "reward" model has the largest region because this model represents both a large variety in the capital goals sought and a large variety of individual contribution amounts received. The private equity region is located in the upper right corner and is relatively small because, while the amount of funding requested and investment amounts are significantly higher than the other models, the variety in the model is less. Finally, each region is colored to match its exchange type of crowdfunding model: equity (orange), debt (blue), and rewards (green). Figure 3 shows the overall scheme of crowdfunding models. Because we focus on crowdfunding, we do not fully develop the scheme for traditional forms of intermediation.
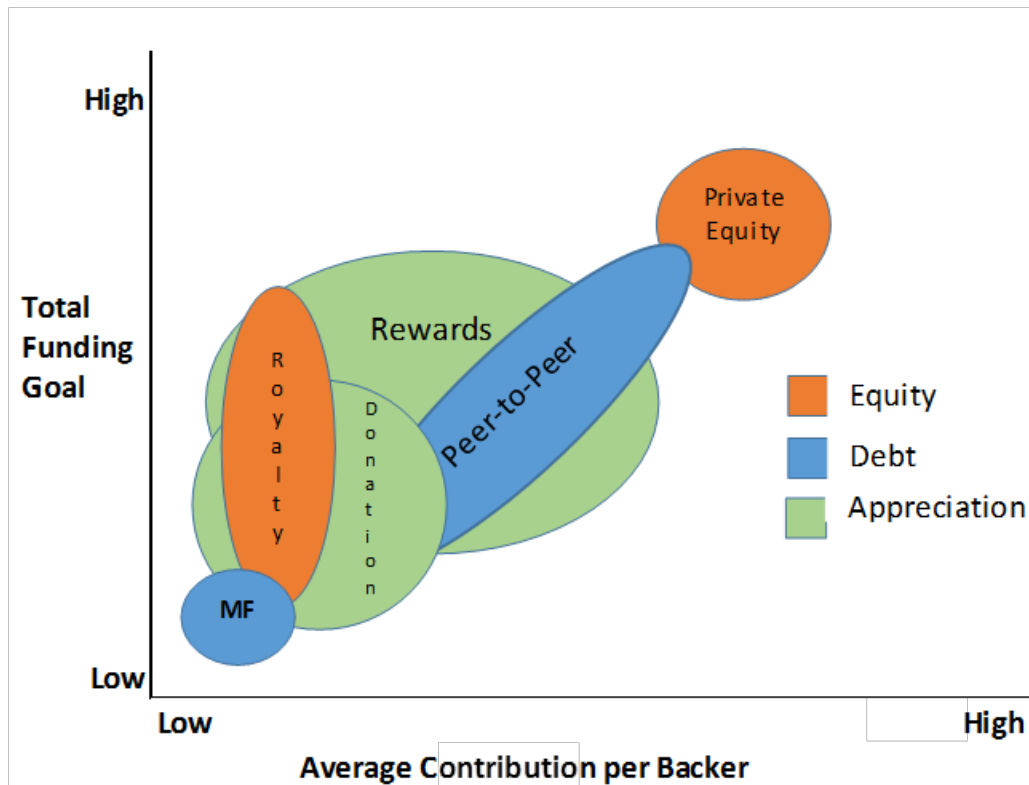

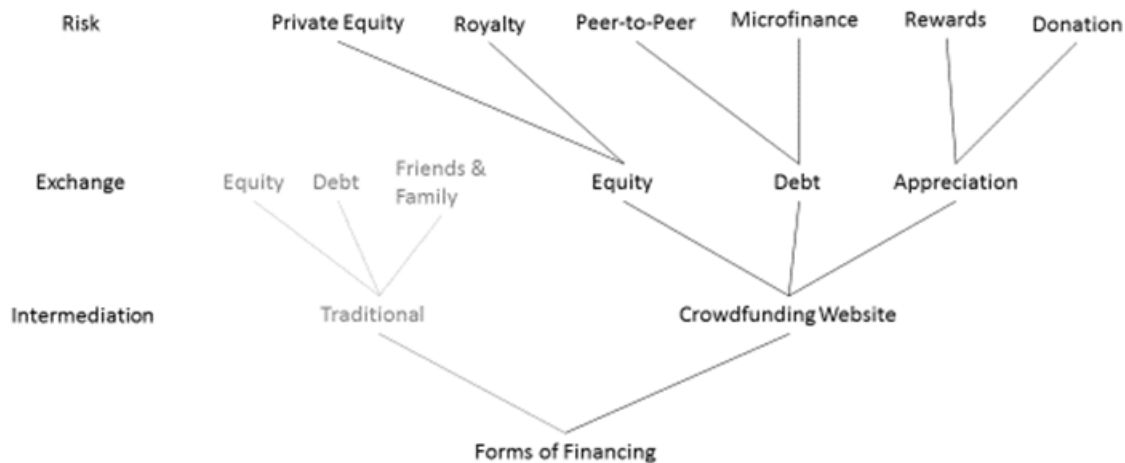**Figure 2. Crowdfunding Models Relative To Each Other**

Figure 3. A Classification of Crowdfunding Models

5   Crowdfunding Model Profiles

There exists some confusion and a lack of a common understanding or awareness regarding crowdfunding's different operational models. Knowing the practices in each model along with each model's strengths and weaknesses is important for a more thorough understanding of crowdfunding.

In this section, we develop a profile of each model by examining multiple crowdfunding websites and projects hosted by these websites. We selected campaigns across multiple crowdfunding websites to provide a representative sampling reflecting what is typical of each model. In some instances, we specifically selected additional campaigns to illustrate a concept using a more extreme case. Our purpose was not to determine the existence of each model but instead to understand how each crowdfunding model is instantiated. We base our profiles on patterns observed in the selected campaigns and supplement them with findings from literature.

To perform the analysis, we first evaluated each campaign to identify salient attributes. These attributes do not necessarily influence the success of a crowdfunding campaign but rather help to provide understanding of the mechanisms underlying each model. We picked an initial set of attributes and reviewed the selected campaigns in light of these attributes. Second, we looked for patterns of similarities and differences in campaigns associated in a crowdfunding model and between models. We did this to find attributes that discriminated between different models or attributes that were highly characteristic of a model. We discarded attributes that provided neither of these functions. An example of a discarded attribute was "niche/mass market". We found a similar number of campaigns in each model that would appeal to a niche versus mass market, and, thus, this attribute neither helped discriminate between nor was highly characteristic of a given model; the attribute was not instrumental in our profiling and we discarded it.

This was an iterative process in which newly identified attributes would cause a reevaluation of previous thinking and, in some cases, recoding as specific definitions evolved over time. For example, we initially conceived the attribute of transparency rather simplistically, but, as coding continued and other affordances of a crowdfunding website sharpened in focus, we realized that our initial interpretation of transparency was too narrow; that is, a website may instantiate transparency in different ways and for different types of information.

Table 3 summarizes the selected campaigns and notes from which crowdfunding websites we collected data. Table 4 lists the attributes we used in the final analysis and briefly defines each attribute.

Table 3. Summary of Selected Projects

Model	# selected campaigns	Max. goal	Min. goal	Mean goal	Mean contribution	Website providers
Private Equity	15 campaigns	$5,000,000	$150,000	$1,177,000	Not public	Equitynet.com; Circleup.com
Royalty	18 campaigns	$50,000	$930	$12,515	$69	Sellaband.com
Microfinance	16 campaigns	$1,250	$75	$594	$30	Kiva.org
Peer-to-Peer	18 campaigns	$30,000	$7,000	$17,907	Not public	Prosper.com; Lendingtree.com
Rewards	16 campaigns	$38,000	$600	$9,831	$71	Kickstarter.com
Donation	16 campaigns	$9,622	$702	$3,373	$111	Experiment.com
Total	**99 campaigns**					

Table 4. Salient Attributes used to Describe Crowdfunding Model Profiles

Attribute	Description
Operational aspects	
Exchange	What the founder is willing to give "in exchange" for the backer's contribution
Capital goal	The average capital goal for the project.
Typical contribution	The average individual contribution from a backer to a campaign
Limited time	Whether the website limits the length of a campaign.
Founder attributes	
Founder composition	Whether the founder is an individual or a team.
Founder experience	The type of experience of the founder (see discussion above under ecosystem/founder). When the founder is a team, we analyzed all members where possible.
Project attributes	
Product/project	Product represents those campaigns whose goal was to fund either an existing business or to launch an on-going business. Project represents a one-time project; for example, artists raising money for a film or album, or a research project. For projects, the raised capital will be used to begin and complete the endeavor as opposed to supporting an on-going business.
Business cycle	The purpose of many crowdfunding campaigns is to develop a product that can be taken to the marketplace. However, founders will come to the capital markets with products in different stages of development from mere ideas roughly sketched on paper to fully developed prototypes ready for commercialization. Still others may come to crowdfunding with an existing revenue stream and they are looking to grow an existing business by taking their product to the next level. Crowdfunding of products in the conceptual phase will have longer development times and should set the expectation that the resulting product may resemble a beta version rather than a polished market-tested end product.
Backer attributes	
Motivation	Based on literature, reports findings on motivation behind backer's actions.
Technology attributes	
Social media	Whether the website supports social media links such as Facebook, Twitter, and Linkedin.
Communication tools	The type of tools provided by the website to communicate between the founder and backers.
Support tools	The type of support tools provided by the website to support the founder.
Transparency	Whether the website enables or constrains information sharing, and what type of information is readily available.

5.1 Private Equity

5.1.1 Operational Overview

Private equity crowdfunding involves the founder exchanging an ownership interest in the firm in return for a backer's contribution. Backers are entitled to future dividends and a share in the proceeds if the company is sold. Capital funding goals are typically higher (generally over $1 million dollars), and backers contributions are also larger (generally over $10,000) relative to other crowdfunding models. Campaigns may last multiple months and are ended once the funding goal is met.

5.1.2 Profile

Private equity crowdfunding is growing rapidly and will continue this trajectory due in large part to new legislation in the United States that will open up investment in private companies to a significantly larger group of investors through the Jumpstart Our Business (JOBS) Act of 2012. The legislation removes the ban on public solicitation of offerings and allows private offerings to non-accredited investors, thereby opening up ownership in private companies essentially to the crowd. While these regulations are still being finalized, it is proposed that under the JOBS act, companies may raise up to US$1 million per year using private equity crowd-funding[5]. In addition, legislation is being drafted in other countries to find the right balance for disclosure and funding limits that suit founders, backers, and the website providers (Cumming & Johan, 2013).

Our set of projects from Equitynet.com and circleup.com (both leading crowdfunding websites focusing on equity crowdfunding) revealed that every campaign was for an ongoing business (as opposed to a single project); all but one firm had existing sales, and all businesses were in the growth stage of the business cycle. There were no projects with individual founders: all founders comprised at least two people, and all but one campaign had an experienced team with each member showing either entrepreneurial expertise or product expertise.

Traditionally, projects funded by VCs are often sold in 5 years of funding and the "exit strategy" is an important consideration during the funding period (Lavinsky, 2011). While all campaigns addressed the market size in some way, we found only about 40 percent of our private equity cases mentioned an exit strategy during their opening pitch. Typically, there are no time limits for reaching the capital goal in equity crowdfunding. There is evidence that, when the capital requirement is larger, founders prefer private equity crowdfunding over rewards-based crowdfunding (Belleflamme et al., 2014).

Private equity crowdfunding has several advantages over traditional equity fundraising in that a larger and more diverse pool of backers can be reached, and money can be raised faster, which lets the founder stay focused on running their business. However, the disadvantages include limited access to resources typically provided by venture capital firms such as advice, mentoring, and network connections. It is yet to be seen whether these types of resources will become available and to what extent under the crowdfunding model; however, there is value in these non-financial resources that private equity founders may miss out on, perhaps to their detriment.

While backers primarily take an investment approach and are interested in the monetary returns (Ordanini et al., 2011), the risks of business failure remains high. Private equity investments are illiquid, and backers may wait several years before they see a return (if any) of their original contribution (Colao, 2013). Because these companies are exempted from many of the SEC regulations, some opponents argue that less regulation and less disclosure increases the risk of fraud. Arkansas Securities Commissioner Heath Abshure argues that, given other sources of funding, there is no reason for a company to give up equity if it doesn't have to; thus, Abshure maintains that equity funded projects are much riskier ("Feel-good crowd funding", 2014).

5.1.3 Use of Technology

The process of equity crowdfunding has mimicked many of the practices of the traditional venture capital/angel investing market (Ley & Weaven, 2011). The equity crowdfunding websites enable and further this institutionalization by offering communication tools, labeled as "conference calls", and the equivalent of a "deal room". Equitynet.com also offers tools for the founder to better assess their business

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[5] The proposed rules may be found viewed on the SEC website: http://www.sec.gov/rules/proposed/2013/33-9470.pdf

risk and business valuation tools. As opposed to enabling transparency, these websites play a role in limiting access by qualifying would-be backers and providing tools such that founders can decide with which backers to share projects details.

5.2   Royalty

5.2.1   Operational Overview

Royalty crowdfunding involves the founder agreeing to share the profits from the project with backers. Projects are typically not on-going businesses but represent a discreet product, such as a record album, a music tour, or a mobile app. Capital goals are typically under $50,000, and an individual backer's contribution is typically under $100. The campaign ends once the funding goal is met, which may take several months to more than a year.

5.2.2   Profile

The second type of equity crowdfunding is referred to as a royalty model. In this format, individuals invest money in return for a portion of the profits. The royalty model differs from the private equity model in two ways: 1) the risk profile is lower in royalty crowdfunding (i.e., capital goals are lower, and the average contribution amount is lower), and 2) funding is used to support a single project, as opposed to private equity, which is generally used to grow an existing business. Sellaband.com, one of the first crowdfunding websites established, is a European-based crowdfunding website and provides a royalty option to help music bands raise enough money to accomplish a project such as recording an album or going on tour. Backers can listen to each band's music online and contribute to those they like. There is no limit to the number of days on which funding must be completed and it can take 2-3 years for a project to be fully funded (Ward & Ramachandran, 2010). Once the band reaches their funding goal, it receives the contributed money to complete their project and the funding period ends. In return for the contributions, backers share in the proceeds earned from the project; that is, revenue from the tour or profits from the sale of the financed album. Similarly, royalty crowdfunding has been used to fund the development of mobile applications (see sellanapp.com and appsfunder.com for examples). An individual can post their idea for a new mobile app on a crowdfunding website. In exchange for financing the development costs of the mobile application, backers are entitled to a share of the future download revenue.

All projects in our selected campaigns were in the conceptual stage of the business development cycle, and, in contrast to private equity campaigns, we found little to no description of anticipated sales, nor did any campaigns in our sample include forward looking statements or projections about possible sales. This perhaps confirms Ordanini et al.'s (2011) findings that backers, despite sharing in the revenue, generally approach the transaction philanthropically and typically identify with the artist. This is a distinction from private equity, which is more investment focused. Peer effects such as external blog posts or top-five lists appear to help backers overcome information overload facing backers (Ward & Ramachandran, 2010). Another distinction concerns the founders. As opposed to private equity founders that comprised teams possessing both project and business experiences, the Sellaband founders comprised either a single artist or a team of artists (i.e., a band) that possessed strong project (i.e., music) skills; no projects discussed a team member as having business skills although some referenced the use of external business help.

In addition to exposure to a large number of backers across a wide geographic range (Agrawal et al., 2011), the royalty model has advantages in that backers are able to contribute smaller amounts as compared to private equity (the minimum on most Sellaband projects is €10, although some projects have a minimum investment such as €500 in order to participate in revenue sharing). Another advantage is the ability for a more direct connection between the artist and fan.

A disadvantage of the Royalty model is that the project may never become profitable or that little profit will be available to distribute to the backers. Also, when larger numbers of backers are involved (i.e., the crowd), the transaction costs of dealing with this large number of backers can be high. Founders need to keep track of and communicate with backers over the profitable life of the project. Imagine a small profit split amongst many backers and it quickly becomes apparent from a transaction cost point of view that the larger the number of backers, the more work it is to manage royalty payments.

5.2.3   Use of Technology

For royalty model crowdfunding, the main goal of the website campaign is to provide a closer connection between the founder and the backer. Sellaband accomplishes this by providing an interface that founders can use to upload their music so that backers and browsers can listen to the artist and decide whether to offer their support. Supporters can also use links on a founder's page to Facebook, Twitter, and other social media outlets. Other ways to get to know a founder better include a blog where backers and browsers can post questions and offer their support. The founder can use the blog to keep their fans updated and provide answers to posted questions. Founders can promote themselves by posting pictures of themselves or their band on the picture page, provide a list of upcoming shows, or create a video through which they can send a direct message to backers and browsers. After a founder has reached their goal, support tools are used to facilitate the actual funding of the founder's project and a quarterly process where incoming royalties are distributed to backers.

5.3   Microfinancing

5.3.1   Operational Overview

Microfinancing is used by founders in rural and underdeveloped areas who have little access to banking products. Proceeds are often used to buy farming supplies (seeds, fertilizer, livestock), or goods to re-sell. Backers receive their principle back (often without interest), which can be reinvested in another microfinance project. Funding goals are typically under $1,000, and the average backer contribution is low (typically under $50). The campaigns are limited in time, and, for some websites, the founder may have received the money prior to the campaign ending.

5.3.2   Profile

Microfinancing as a concept and practice predates what is now referred to as crowdfunding. In 1976, Muhammad Yunus, an American-educated Bangladeshi economist, founded the Grameen Bank in Bangladesh, which provided small loans that were guaranteed by the borrower's own community (Yunus, 1999). Microfinancing became a form of crowdfunding when websites, such as Kiva.org, took the concept of lending to the poor in underdeveloped nations to the crowd through an Internet website. For example, through kiva.org, a backer may review posted projects and decide whether they want to donate money to founders who have been pre-qualified through an intermediary party. Founders pay loan interest to the intermediaries. However, no interest is paid to the backer who simply receives their principal back, which can then be withdrawn from Kiva or lent to someone else in need.

The funding from our selected campaigns was used to buy supplies for ongoing businesses, farming, livestock, and education. A review of all recently funded projects (i.e., before the payback period began) indicates that 48 percent of funds were used for agriculture, followed by food (10%), retail (10%), and education (8%). From our selected campaigns, 83 percent of the founders had product and business experience and were using the funds to support their ongoing business. Approximately 13% of the founders were starting a new business venture, and 6% were using the funds for education. Research has shown that, in general, microfinance does help lesson poverty in impoverished nations, improve gender equality, and provide access to financial instruments, which would otherwise be unavailable to the poor in impoverished nations (Mutengezanwa et al., 2011). Once a campaign is posted on Kiva.org, there is a fixed number of days during which the loan is available for funding.

Backers tend to donate to those who are culturally similar and geographically close, although financial intermediaries may reduce this effect by providing a trust mechanism (Burch et al., 2014). Backers are often driven by charitable motives and the ability to help those in rural underdeveloped areas who have little access to financial instruments. Research has found that successful campaigns appeal to a backer's desires to help the founder as opposed to campaigns that describe the venture as a business opportunity (Allison et al., 2014).

Founders may be an individual, a team, or a group. When the founder is a group, each member may receive an individual loan, whereas the purpose of the group is to provide support to each other and "provide a system of peer pressure" (Kiva.org) to pay the loan back. Every group has a "group leader", and one common practice we noted was for the group leader to be identified by raising their hand in a photo posted on the campaign page. The responsibility to pay back the loan may fall on the group as a whole via a group guarantee or may be only the responsibility of the individual.

Cultural and geopolitical issues influence lending practices. For example, instead of an interest-bearing loan, a different financial instrument is used in Muslim countries to comply with Islamic law whereby the founder pays a service fee to the intermediary instead of interest (Bradford, 2012). Government regulations in India dictate that loans will not be paid back to backers for at least 3 years (Kiva.org). Geopolitical unrest can also impact the risk involved in lending. For example, this warning was posted on a Kiva.org campaign to finance a group of Yemen women's resell clothing business:

> *Because Yemen is a new and unstable environment, there is a possibility that future loan repayments could be held indefinitely in the country for regulatory reasons, even if individual borrowers pay back their loans. As a lender to borrowers in Yemen, you accept this additional risk.*

5.3.3   Use of Technology

Microfinance campaigns are distinctly different from other crowdfunding models in their ability to communicate between founders and backers. Neither Kiva.org nor Opportunity.org provide a comment feature or a way to update the project. In addition to a language barrier between founder and backer, the founders may not have access to a computer or the Internet. The role of the intermediary while qualifying founders and facilitating the funding may both enable and constrain communication between the founder and backer. Only opportunity.org provides links to Facebook, Twitter, or LinkedIn, and these are not very prominent. A primary role of these crowdfunding websites is to provide information to backers regarding details of the founder and to provide transparency regarding the intermediary so backers can make informed decisions.

5.4   Peer-to-Peer Lending

5.4.1   Operational Overview

Peer-to-peer lending supports personal loans and small business loans. Backers receive their principal back with interest in exchange for their contribution. Evidence shows a wide variation in capital funding goals, where small businesses typically have larger funding goals than personal loans. Subsequently, larger capital goals are associated with larger individual contributions from backers, whereas backers generally contribute smaller amounts to personal loans. Generally, a campaign ends after a set number of days, and the founder receives the amount contributed only when the funding goal is met.

5.4.2   Profile

Peer-to-peer lending involves individuals lending to other individuals bypassing banks as a mediator. The idea is that borrowers can pay less interest and lenders can earn more interest because overhead from a bank's involvement is minimized. P2P lending websites such as Prosper.com and LendingClub.com focus mainly on personal loans from individuals who are often seeking funding to consolidate debt as opposed to funding a specific project or an ongoing business. Since their inception, these two websites have facilitated over 112,000 loans for over US$1 billion dollars (Barth, 2012). Founders post their needs on a P2P lending website and complete a questionnaire that determines their credit worthiness and the resulting interest rate for the loan. Once the need is posted, backers can scan through the postings and lend money as they see fit. Websites such as LendingClub.com and Prosper.com encourage backers to build a portfolio of varying interest rates based on the backer's risk tolerance and preferences. This gives backers the opportunity for a steady fixed income by investing varying amounts at different interest rates across multiple projects, which spreads out risk. An advantage to founders is fast approval, a single fixed payment each month, and improvements to the founders credit score. Because these loans are unsecured, there is always the risk of the founder's defaulting.

A previous study found that about 28 percent of campaigns on Prosper.com link to friends, and these campaigns are more successful at reaching their capital goal, have a lower interest rate, and have lower default rates (Lin et al., 2013). In their findings, Lin et al. note these findings may be explained by backers who lack "sophisticated risk assessment methodologies" and may interpret friends as a signal of quality (p. 33). Other ways that backers can find quality campaigns is through rational herding; that is, not merely mimicking other's behaviors (irrational herding), but instead, learn from other backers' actions in order to determine a founder's creditworthiness (Zhang & Liu, 2012).

An interesting phenomenon is emerging on peer-to-peer websites that are beginning to reach out to institutional lenders such as asset managers, pension funds, hedge funds, family offices, and other institutions and marketing these loans as a new asset class ("Institutional investment through Prosper", n.d.). To support institutional investors, Prosper.com provides an application programming interface (API) that backers can use to download historical data of past loans and data on current loans. Peer-to-peer lending is regulated for the most part by state and federal laws ("How is Prosper regulated", n.d.).

5.4.3   Use of Technology

The main focus of the websites is to qualify and rate founders and facilitate the monetary transaction between the founder and backer. Unlike other crowdfunding models, other than knowing the founder's credit risk, there is little information available regarding the founder on the campaign. There are no social media links such as Facebook nor Linkedin to share a campaign, although Prosper.com does offer a link to share a campaign through email. Neither Prosper.com nor LendingClub.com provide communication tools or updates from founders during or after the campaign ends. For backers and browsers, the websites are used to search for loans meeting a certain risk level and to fund the loan. Transparency is focused on disclosing the founder's credit risk and on providing extensive data on past and current loans.

There is very little in the way of communication from the founder explaining their needs and plans for the funding. While the websites allow for this possibility, in our set of campaigns, no founders took advantage of this. We suspect this may be a newer trend because past literature has shown that founders do post their personal story on the campaign and that backers are more likely to fund those they identify with (Herzenstein, Sonenshein, & Dholakia, 2011). However, as peer-to-peer lending leans toward institutional investors with sophisticated data mining tools, the story of the individual founder may become insignificant.

5.5   Rewards

5.5.1   Operational Overview

Founders may use rewards crowdfunding when they have an idea for a project or an ongoing business. In exchange for a contribution, founders give backers a copy of the product or a memento from the project (e.g., a t-shirt, coffee mug, recognition, or an invitation to a special event). There is a wide variation in capital funding goals (e.g., under $100 to over $1 million); the average is around $10,000. There is also a wide variation in backer's contribution, with the average being around $70. Kickstarter currently limits a single backer contribution to $10,000. The campaign ends after a set amount of time (generally 30 days), and some websites (e.g., Kickstarter) enforce an all-or-nothing scheme in that founders do not receive any contributions unless the funding goal is met.

5.5.2   Profile

When a rewards model is used, the project founder may begin with an idea for a project or product and may even have a rough prototype of the project they hope to create. For example, an individual may envision a book they want to write, a movie to produce, a new innovative type of sports gear to develop, and so on. Founders come to a crowdfunding websites with the goal of raising enough money to produce/complete/finance their idea. Project details are posted on crowdfunding website such as kickstarter.com, indiegogo.com, and rockethub.com. On the campaign's page, the project is described, pictures are posted, and a video is often used to introduce the project founder and their idea. Links to social networking sites (e.g., Facebook, Twitter) are common to allow backers and browsers alike to share the crowdfunding campaign with their social network.

Founders offer "rewards" in return for a backer's donation. The crowdfunding website allows the founder to specify different rewards for different levels of donation. For example, on a campaign to help expand a zine business, the founder offered a one-year subscription to the zine for a $20 donation. In return for a donation, the product itself is often used as a reward level where backers can receive one of the first copies of the product or get a discount off of the intended retail price similar to "pre-ordering".

A rewards crowdfunding campaign typically runs for 30 days. Research has shown a "diffusion of responsibility" effect as contributions are negatively related to accumulated contributions up until the end of a campaign at which point project updates can spur further contributions (Kuppuswamy & Bayus, 2013). Once a campaign has ended, the project founder receives the donations from the backers only if

the project funding goals are met, although some websites (e.g., indiegogo.com) allow the founder to receive all funds contributed even when the funding goal is not met. The rewards model of crowdfunding can be thought of as a "*mashup* between venture capitalism, social networking, and a pledge drive" (Beaulieu & Sarker, 2013, p. 3, emphasis in original).

The rewards model is interesting because it most embraces a new innovative business model. The equity models and the debt models mainly mimic current practices, albeit with a larger and more diverse group of founders and backers. That is, the processes enabled within these crowdfunding models are similar to current debt and equity practices. In contrast, we believe the rewards model represents a new type of business model. A significant distinction between the rewards model of crowdfunding and other forms of financing relate to the types of projects that are created. From our selected campaigns, 75 percent focused on completing a specific project and the other 25 percent were for an ongoing business. The founders are also distinct in that the majority (75%) had experience related to the project, while the remaining (25%) had both project and business experience. We did not find any campaigns where the founder's main skill was business experience. Founders were a mix of teams (54%) and individuals (44%). We also noted that founders' experience in teams tended toward homogenous skills as opposed to complementary skills.

Another distinction of the rewards model is that the backer does not receive any equity or debt; thus, the backer's concern is simply the short-term completion of the project (and the resulting receipt of their reward) as opposed to the long-term outcome of the project founder or the project per se. And while the rewards model may overlap with e-commerce business models to some extent, the distinction is that the product does not exist before the purchase is made, nor is the founder of a campaign generally an existing business, so the risks taken by the backer and the associated motivation to contribute are different than what one would expect in an e-commerce situation. Beyond the reward, backers' are motivated by a desire to support the founder and their cause and to engage with the project community (Gerber et al., 2012). This was evidenced by a comment from one backer who stated, "I love it, want it, but, can't afford it...I will give you one dollar, to show my belief in your ingenious design...in hopes that I can someday buy it" (Floyd Leg, 2014).

Founders who present a quality project and use their personal networks have shown to be important factors in success (Mollick, 2014). Although scant research has been conducted on reward fulfillment, Mollick (2014) did find that most founders (over 75%) do fulfill their obligation, although the larger the funding amount, the more delayed reward fulfillment seems to be. Founders have also been found to engage in both direct and indirect reciprocity (Zvilichovsky et al., 2013). A campaign can be used to establish a relationship with potential customers and to test the market to see if a product has sufficient appeal before spending time and effort in developing a product where there is no market (Gerber et al., 2012).

A distinguishing factor of the rewards model is that, due to the nature of the exchange, campaigns can far exceed their capital goal quickly. As opposed to the other crowdfunding models, rewards campaigns end at the end of the time period, not when the dollar goal amount is reached. This can lead to campaigns far exceeding their requested capital goal. For example, a founder with an innovative idea to produce a table leg for a collapsible table had a capital goal of $18,000 but ended up with contributions of $256,273. This can prove problematic (as indicated above by Mollick, 2014) because founders are not always prepared to handle the fulfillment of a significantly larger number of rewards. Founders can address this issue by setting up rewards with limited quantities that are spread out over time. For example, the founders for a project of wireless earbuds set up an early bird tier priced at $179 that was limited to 1,000 backers. This was followed by subsequent, limited tiers for slightly higher prices and later deliveries. Other founders simply cancel the campaign when success comes early. For example, a project to create an innovative wool running shoe with a capital goal of $30,000 raised approximately $119,000 within 5 days of the launch. The founders explained their decision to stop the campaign within the first week as follows:

> *While it has been thrilling (and more than a little tempting) to imagine the potential scope of our project through the remaining 20+ days of our campaign, we have made the conscious decision to not bite off more than we can chew.* (Wool Runners, 2014)

5.5.3   Use of Technology

The websites supporting rewards-based crowdfunding provide several features to help both founders and backers communicate and to share the project with others. Links to social media outlets such as

Facebook and Twitter are prominent, and the number of times a campaign has been "liked" is visible, which encourage backers to let others know about campaigns. Founders and backers are able to communicate through a comments section where backers ask questions, receive clarification, complain, or encourage the founder. Founders post project updates that let backers know the status of a campaign (and the resulting project progress after a successful campaign has ended). Updates are also used to encourage further contributions after the funding goal is met by providing "stretch goals" and unlocking new reward levels. The rewards structure is unique to rewards-based crowdfunding, and website providers offer tools to set up various reward levels and tools after the campaign to collect names, addresses, sizes, preferences, and so on from backers in order to make the reward fulfillment as efficient as possible. The website providers also offer secure third party payment processing to collect the contributions from backers and then distribute the money to the founder. Transparency is enabled through the websites with a focus on providing information about the founder and the project itself. Many websites post a list of backers on the campaign while others allow a backer to keep their identity private. Backers tend to keep their identity private when there is greater "scrutiny" or the project is related to an "undesirable" behavior (Burtch et al., 2013b).

5.6   Donation

5.6.1   Operational Overview

Founders using donation crowdfunding often rely on the social good that the project can provide, and backers are not given any additional incentive other than "thanks" from the founder. The capital funding goals are generally low (typically under $5,000), and the average contribution from backers is around $100.

5.6.2   Profile

Donation models of crowdfunding share aspects of other models yet are unique in that the backer does not receive anything in return for their donation other than gratitude from the founder. Donation crowdfunding has been associated with funding open access journalism, classroom teachers, and scientific research. In many instances, the projects themselves may be considered public goods and lend themselves to philanthropy. In addition to appreciation from founders, results from funded projects are then shared, which is consistent with the concept of a public good. And while some research has argued that pure altruism does not exist, the donation model of crowdfunding shows evidence of a substitution effect as seen in crowding-out behavior (Burtch et al., 2013a), which supports the existence of pure altruism.

We collected our set of campaigns from Experiment.com, which was established to help move science forward by providing funding alternatives to researchers. Founders consisted of both individuals (69%) and teams (31%), and all founders brought project experience with them. Due to the research focus of the projects, we looked for research experience as evidenced by a PhD instead of business experience as the other dimension of experience. The educational breakdown of our selected campaigns is: PhD (31%), PhD candidate/student (19%), masters' student (13%), undergraduate (19%), and professional R&D (6%). In all instances, PhD candidates/students, masters' students, and undergraduates were working under the mentoring of a researcher with a PhD. In all instances, the campaigns were for a single research project that was in the conceptual stage.

5.6.3   Use of Technology

These websites allow space for the founder to post their research project including an opening pitch, a description of the project, and a budget for funds. On a page labeled "abstract", founders can describe the context of their research, its significance, and the project's goals. A page labeled "lab notes" is used for the founder to provide updates and the results of their research. A comments section is available and was used mostly to wish the founders luck and success.

The use of social media is available but is not a prominent part of the campaign. Beyond communication tools in the form of comments, the website also facilitates secure payment transactions and distribution of the collected funds through a third party payment processing system. Transparency is enabled through the websites with a focus on providing information about the founder and the project itself.

6   Discussion

In this paper, we define a definitive set of crowdfunding models and illustrate each model based on literature and real-world examples. The above profiles demonstrate the homogenous nature of campaigns found within each model and the distinctness across models. Table 5 summarizes these findings: it categorizes the major characteristics along operational, founder, project, backer, and technology attributes. An important consideration, and in some respects what defines each crowdfunding model, is how the model is enacted through the crowdfunding website because it is the websites that define and enforce the rules in effect. We found how transparency is enabled (or not) in each crowdfunding model and how technology is used to focus the attention of backers on what attributes are salient for each model to be especially interesting.

Table 5. Profile of Crowdfunding Business Models

	Private equity	Royalty	Microfinance	Peer-to-Peer	Rewards	Donation
Operational aspects						
Exchange	Ownership	Share of proceeds	Return of principle	Return of principle plus interest	Product, memento, experience, thanks	Thanks
Risk: capital goal	High to very high	Low to medium	Very low to low	Medium (but wide variety)	Low to high	Low to medium
Risk: typical individual contribution	High to very high	Low	Very low	Relative to capital goal	Very low to high-medium	Very low
Enforced time-limit	No	No	Yes	Yes	Yes	Yes
Founder attributes						
Founder composition	Dominated by teams	Individuals and teams	Individuals and groups	Individuals	Teams and individuals	Teams and individuals
Founder experience	Project and business experience	Project experience	Project and business experience	Not typically disclosed	Project experience	Project and research experience
Project attributes						
Product/project	Product	Project	Product	Project	Projects and Products	Project
Business cycle	Growth Phase	Conceptual	Expand or support existing business	Unknown	Conceptual through prototype	Conceptual
Backer attributes						
Motivation	Investment	Philanthropic	Philanthropic	Investment	Rewards, Being part of the project	Philanthropic
Technology attributes						
Social media	Not prevalent	Social network connections	Not prominent	Not prevalent	Social network connections	Not prominent
Communication tools	Conference calls, access to financial reports	Comments, updates, blog	n/a	Not prevalent	Comments, updates	Comments, results & updates
Support tools	Screening & qualification of backers, business Valuation	Funding, distribution of royalties	n/a	Funding, extensive search criteria, data downloads for backers	Funding, rewards fulfillment	Funding
Transparency	Limits access, founders choose backers	Transparency of founder details	Transparency of intermediary details	Transparency of loan risk, past loan performance	Transparency of project and founder	Transparency of project and founder

Our findings show that one model is not necessarily better than another model; indeed, success and failures can be found to be distributed across all of the operational crowdfunding models. While little

research to date has addressed these issues, what is important is for a founder to choose the crowdfunding model that fits the specific project. Using the attribute characteristics from Table 5 provides insight into how fit may be identified as the following two examples illustrate. Founders with a project that has the ability to generate income over time, where rewards are not evident, are suitable to use royalty crowdfunding. Alternately, founders whose idea is an event or experience with limited income potential are more suited to a "reward" or "donation" model.

Past literature has measured project success as the funding goal being met. However, this may prove to be too simplistic of a view and does not consider the events after the campaign ends. Other measures of success might include whether the product or project actually came to fruition, whether the backers received what was promised, and the degree of backer satisfaction. For example, in the case of a private equity crowdfunding, one measure of success is whether the company was sold in the expected timeline and whether backers received the expected return on their investment. As addressed in the rewards model profile above, when campaigns raise far more than the original goal, they may be deemed "successful" initially or in the short run. However, in some of these cases, founders need to produce a larger number of rewards/products than originally anticipated, and this can result in delays and delivery failures (Mollick, 2014), which brings into question an initial designation of success.

Moreover, a definition of failure is also elusive. Founders who fail to raise the required funds may have gained exposure, helpful knowledge, and contacts that turn out to be necessary antecedents for future success. For example, in August 2014, Ryan Grepper's campaign for the "coolest cooler" toppled the Pebble Watch as the highest funded Kickstarter campaign by raising over $13 million dollars (Coolest Cooler, 2014). However, this was not Grepper's first attempt at the innovative cooler: he previously "failed" with a campaign that raised just over $100,000 of a $125,000 goal (Coolest, 2013). While deemed "unsuccessful", clearly Grepper learned much from the first attempt, built contacts, and exceeded the funding goal by 26,570% in a second attempt.

A unique feature of crowdfunding is the ability for a campaign to evolve over time. Web 2.0 applications ushered in the dynamic internet, built on social media, and websites that "do things". Some crowdfunding models take advantage of this ability, especially when founders respond to the evolving needs and desires of browsers and backers. For example, in rewards crowdfunding, campaigns develop over time as meaning is created through interactions between the founder and the backer (Beaulieu & Sarker, 2013). This interaction can be a positive boost to a campaign by creating a sense of a community that backers want to join and be a part of through their contributions. However, this interaction can also become problematic, especially when backers bring up issues with the project that are not adequately addressed by the founder. The evolving conversation both in the crowdfunding website and through social media can greatly influence the amount of capital raised depending on whether a sense of community is established.

Beyond the evolving nature of a campaign, practices in a specific crowdfunding model can also evolve. While crowdfunding websites themselves provide a level of stability to the models based on the rules and structures enforced, this is not to say that models are necessarily static. How rules and structure are instantiated and which features are used and how is determined by human agency and can and do change over time. For example, in the peer-to-peer model of crowdfunding, originally, founders were more apt to post their personal stories and describe their uses of the raised funds. However, over time, this feature became used less and less as practices evolved whereby data relating to the founder's credit rating has become the main criteria for deciding funding. In response, peer-to-peer websites such as Prosper.com now offer an API and access to historical loan data allowing backers to spot trends and make decisions regarding future contributions.

In this section, we show the distinctiveness of each crowdfunding model. Table 5 overviews the models and can be used to compare the models to understand the differences inherent in each one. We address the concept of success and failure of a crowdfunding campaign and illustrate that one factor of success is using a crowdfunding model that fits the proposed project. In addition, we reflect on the dynamic nature of crowdfunding, both during a campaign and at a macro level, to illustrate how models evolve over time.

7   Research Agenda

Crowdfunding is at a nascent stage with no established investigative framework across the multiple disciplines where research is beginning to emerge from. We take a multidisciplinary view and acknowledge the many interrelated dimensions of crowdfunding. Guided by our two structural elements (stakeholders and crowdfunding model), we show in Table 6 the current state of the empirical literature.

We categorize each reviewed paper based on which stakeholder perspective is represented and the crowdfunding model addressed. We determined the crowdfunding model(s) attributed to each paper based on our classification scheme in Section 4. In addition, Table 6 displays the general topic of each paper. Papers may appear more than once if they address multiple models, multiple topics, or multiple stakeholder perspectives.

Table 6. Current Literature within Research Framework

Perspective	Models					
	Private equity	Royalty	Microfinance	Peer-to-peer	Rewards	Donation
Backer		Campaign success (17), contribution behavior (1)	Campaign success (2), contribution behavior (7)	Contribution behavior (18)	Contribution behavior (10) (11), privacy (8)	Contribution behavior (6)
Founder	Campaign success (4), viability (12)			Campaign success (13)	Campaign success (9) (10) (11), contribution behavior (10)	
Website providers	Design (9) (16), viability (12)	Design (16), viability (5)			Viability (5)	
Industry	VC financing (3)		Impact (15)			
Papers Legend: (1) Agrawal et al. (2011), (2) Allison et al. (2014), (3) Bains et al. (2014), (4) Belleflamme et al. (2014), (5) Braet et al. (2013), (6) Burtch et al. (2013a), (7) Burtch et al. (2014), (8) Burtch et al. (2013b), (9) Cumming & Johan (2013), (10) Gerber et al. (2012), (11) Kuppuswamy & Bayus (2013), (12) Ley & Weaven (2011), (13) Lin et al. (2013), (14) Mollick (2014), (15) Mutengezanwa et al. (2011), (16) Ordanini et al. (2011), (17) Ward & Ramachandran (2010), (18) Zhang & Liu (2012), (19) Zvilichovsky et al. (2013).						

Table 6 shows that considerable gaps exist in the literature. We see very little research in the donation model and little research at an industry level. While the microfinance area has experienced considerably more research than shown here, our literature review was limited to empirical papers in which the authors refer specifically to crowdfunding via their title, abstract, or keywords and does not necessarily represent the larger realm of research in this area.

An additional area of concern is that, almost exclusively, current research focuses on the crowdfunding phenomenon during the phase when campaigns are taking place. However, crowdfunding, as a process entails decisions and actions that occur before and after the campaign, and current research has yet to address these topics at any level of detail. Thus, we propose a research agenda that takes into consideration not only processing during a crowdfunding campaign but also ex ante and ex poste decisions and actions. Figure 4 presents this broad perspective and shows the process from the founders', backers', and website providers' perspectives. Future research can use this as a guide while being cognizant of how the approach and findings may vary across crowdfunding models.

	Ex-Ante	During Campaign			Ex-Post	
		Discovery	Communication	Contribution	Reward Fulfillment	Communication
Founder	CF vs Traditional Select Model Choose Website Produce campaign	Social Media Blogs Search	Providing Updates Responding to Comments		Reward Fulfillment	
Backer		Discover Campaign	Vetting Process	Monetary Social Media	Receive Reward	Comment on reward
Website Providers	Vetting Founders Support tools for posting projects	Search Criteria	Communication Tools	Pledge tracking	Support tools for facilitating funding, and reward fulfillment	Communication Tools

Figure 4. A Broad Framework for Crowdfunding Research

First, there are many decisions faced by a founder ex ante to embarking on a crowdfunding campaign. Decision theory has identified several steps to this process including identifying the need, evaluating

alternatives, making a selection, and implementing the decision. All of these process must occur prior to the launch of a campaign. Founders must first decide whether to use crowdfunding or a more traditional means. Next, the founder must decide what type of crowdfunding model to use and which crowdfunding website is most appropriate. The crowdfunding website providers also play an ex ante role because the support tools they provide, the rules they enforce, and the payment fees they charge influence founder's choice. Website providers also scrutinize and vet founders who post projects because it is in their best interest to prevent fraud and abuse. However, very little research has addressed these questions and there are still many unknown mechanisms at work.

Once a campaign is underway, backers enter the ecosystem and again have unique decisions to make. We segment this process into three areas: discovery, communication, and contribution. While some research has addressed these processes, there remain many open questions.

From a discovery perspective, founders must market their campaign, and backers must find the campaign. This process of discovering campaigns is under-researched and we might expect that it will vary greatly between crowdfunding models. As we see from the peer-to-peer model, the search criteria involves factors of founder risk, while private equity involves an aura of exclusiveness and limited access. Social media has an impact on the discovery process, but, to date, we do not understand how this mechanism works; however, we suspect that it varies across models due to its prominence (or lack thereof) for different models.

The second segment is communication, during which the website providers enable this communication. However, we know little of this process. Drawing on media richness theory (Daft & Lengel, 1986), we might expect the need for a rich communication media. Yet, how does this occur in a crowdfunding campaign? We see almost no communication during a microfinance or peer-to-peer campaign, yet a rewards campaign may have hundreds (or more) of comments between founders and backers. It is through the communication process that the backer vets the founder and project. This vetting process may establish legitimacy, trust, identity, but, again, scant research has explored this process. Crowdfunding campaigns are not static but dynamic and evolve over time. Questions that have not been adequately addressed include: "how are comments used?", "what is the role of updates during a campaign?", "can changing rewards or setting stretch goals increase the momentum of contributions?", and "how do these developments over time impact the success or failure of the funding?".

The third segment, contribution, has received some attention in the research stream in that contribution behavior and crowdfunding success have been addressed. However, there remain many open issues and other areas to explore. For example, a topic that has not been addressed is when a backer does not contribute monetarily but rather socially by sharing the project on social media. Research questions that help understand the factors influencing contribution (monetarily and socially) can be enhanced and the factors expanded considerably.

Ex post considerations have been largely unaddressed in the literature. Assuming a successful campaign, there are two main actions that occur next: the first being funding and the resulting reward fulfillment, and the second being continued communication with the backers. Other than private equity, the crowdfunding websites plays a major role (albeit through third party payment processors) in facilitating the collection of funds from backers and subsequent distribution to founders. How do models vary in this regard and how can the website providers add value by making this an efficient process is a possible research question to address. We know from reading comments after campaigns have ended that reward fulfillment can be an arduous task, especially when campaigns are over-funded (Mollick, 2014). Research could provide some valuable insights into this process: for instance design research may address how to provide tools to support the fulfillment process while keeping backers updated as to the progress.

8 Contributions and Conclusion

In this paper, we provide a broad view of the crowdfunding phenomenon and its participants' roles. Through a review of current literature, we demonstrate a current lack of a cohesive understanding in the literature, especially regarding different operational models of crowdfunding. We derived six unique models of crowdfunding and provide an in-depth profile of each model. Finally, based on the roles and processes invoked, we show how current research correlates to our derived crowdfunding models and propose a broader research agenda that addresses not only processes that occur during a crowdfunding campaign, but also the ex ante and ex post processes.

First, we contribute to the literature by identifying operational crowdfunding models. Given the emerging nature of the crowdfunding phenomenon and its multi-disciplinary aspects, it is understandable that there are different terms and ways of conceptualizing crowdfunding. However, for future research to be most effective, research needs to have a common foundation of knowledge. This is instrumental for three reasons. First, without a common nomenclature, it is difficult to share findings between studies due to a lack of clarity and precision. Second, without a clear distinction between crowdfunding models, it is unclear whether findings are generalizable across the phenomenon or apply only in a given model. Third, as we demonstrate, each model, while sharing the common goal of raising money from a crowd over the Internet, is quite distinct. We highlight these differences by examining attributes that define each specific model. We discuss the concept of success and failure across all crowdfunding models and we note the different ways these concepts can be defined. And, finally, we highlight the dynamic nature of certain crowdfunding models and discuss the impact on campaigns over time. Through this discussion, we show that research that fails to consider the essence and distinctiveness of each model may miss valuable insights afforded by a particular model.

Second, we contribute to the literature by clearly identifying the technology features associated with each model. We clarify the role of technology as a provider of structure, an enforcer of rules and regulations, and a support tool. For each model, we examine how technology enables and constrains communication in a campaign and the sharing of campaigns through social media. Web 2.0 applications have been heralded as bringing increased transparency to the marketplace, but we show, for certain models, how technology is used to control information such that less transparency results. Technology, as the backbone and driver of the crowdfunding phenomenon, will portend future directions of this rapidly growing phenomenon.

Third, we contribute to the literature by placing the current research into a framework and provide a broader research agenda. As new phenomenon unfolds, it is important to provide intermittent "check points" where knowledge is examined, consolidated, and perhaps reorganized based on new insights. We believe our paper provides such a review and will help move research forward in a more cohesive and comprehensive manner and with a better understanding for future research possibilities.

Crowdfunding is an exciting phenomenon that offers a new, innovative method for founders to connect with others to share ideas and jointly turn ideas into reality. Crowdfunding "circumvents traditional sources and decision makers and gatekeepers, a sort of grassroots redistribution of wealth" (Steinberg, 2012 p. 15). As the entrepreneurial economy continues to emerge, structures such as venture capital and debt funding become restructured as these older routines and ways of doing business do not support the entrepreneurial economy, which is demanding a higher number of innovative ideas to be financed but at much lower costs. Whereas in the managed economy, many innovative ideas had no funding outlets, crowdfunding is restructuring the capital markets and allowing lower barriers and increased access to funding.

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Appendix

We searched the EBSCO database at the end of 2013 and again in March 2104 to retrieve all papers relating to crowdfunding. We retrieved papers with the terms "crowdfun*", "crowd fun*", and "crowd-fun*" in either the title, abstract, subject terms, or author-supplied keywords. This resulted in 688 documents. Because of the newness of the phenomenon, we also looked at literature from several open access working paper websites when those manuscripts were cited multiple times from peer-reviewed papers (1 paper). And finally, we searched and included papers from the AIS Electronic Library (AISeL) and the International Conference on Information Systems (ICIS) (4 papers). This brought the total number of papers for consideration to 693. From the EBSCO set of papers, EBSCO classified 70 as academic peer-reviewed papers. We reviewed these 70 papers and removed those that were not research focused, not on topic, or that only mentioned crowdfunding incidentally. This resulted in 30 papers of an academic nature, and brought the set of papers under consideration to 35 (30 from EBSCO search, 1 working paper, and 4 ICIS papers). Of the 35 papers, we found 19 papers that were of an empirical nature. Table A1 categorizes the papers we found from this comprehensive search.

Table A1. Classification of Crowdfunding Literature

Paper classification	Number of papers
Scholarly (peer reviewed)	
Academic	
Empirical*	16
Non-empirical	12
Non-academic	26
Not on topic	14
Working papers*	1
ICIS papers (2 empirical*)	4
Book review	4
Government document	2
News	42
Periodical	562
Report	3
Unclassified	7
TOTAL	**693**
*Empirical papers included in synthesized review	

Crowdfunding is a global phenomenon with the earliest crowdfunding websites forming in the UK and the United States. Table A2 shows whether each papers focused on a specific country, a set of countries, or was not specific to a country.

Table A2. Global Reach of Literature

Global Reach	Count
Specific Country	6
Multiple Countries	3
Not Specific	10

The breadth of literature remains focused in the business disciplines, with the highest number of publications in the entrepreneurship/management area followed by information systems (Table A3).

Table A3. Disciplines Represented in the Literature

Discipline	Count
Biotech	1
Design	1
Economics	1
Entrepreneurship/management	6
Finance	2
Information systems	4
Marketing	2
Media	1
Operations	1

Table A4 shows the variation of data sources.

Table A4. Classification of Crowdfunding Literature

Type of Data	Count
Secondary data	13
Survey	3
Business modeling	1
Interviews	3
Coded campaign	1

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