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THE LEMONS PROBLEM IN CROWDFUNDING*

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ABSTRACT

Crowdfunding, an offshoot of crowdsourcing, is being touted as an alternative to traditional sources of financing for small businesses. Despite all its promise, crowdfunding is not without potential problems. To the extent feasible, these possible issues must be anticipated well in advance so that crowdfunding can fulfil its goal of democratizing access to capital.

This paper explores how asymmetrical information in the crowdfunding market can lead to a lemons problem, where high quality start-ups are driven out of the market by low quality projects. Understanding how the lemons problem can arise is critical in determining what reforms are needed to ensure that small entrepreneurs will continue to have the ability to raise money from the crowd.

Part I describes the crowdfunding process and focuses on the equity crowdfunding model. By way of example, we study two popular equity crowdfunding platforms: Grow VC and CrowdCube. Part II describes how the lemons problem is creeping up in crowdsourcing, and explains how a similar lemons problem can occur in crowdfunding. To help prevent information asymmetry, Part III proposes the use of reputation systems, friendship networks, and discussion boards to signal or give clues on the quality of a start-up. Part IV concludes.

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I. WHAT IS CROWDFUNDING?

A. OVERVIEW

Crowdfunding is the process of raising money from the crowd, usually through the use of social networks and dedicated platforms on the Internet.[1] It traces its roots to crowdsourcing, defined as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call."[2] Wikipedia, the online encyclopedia produced by the mass collaboration of Netizens from all over the world, is one of the most famous examples of how crowdsourcing works.[3]

Crowdfunding is not really a new phenomenon. The funds to build the pedestal of the Statue of Liberty were raised among Americans through crowdfunding. Donors were promised a six-inch statuette in exchange for a one-dollar donation, while a five-dollar donation merited a twelve-inch statuette.[4] What is new is quickly reaching millions of people at almost no cost through social networks, viral networking, marketing, and other features of Web 2.0.[5] Unlike traditional financing models, like bank loans and venture capital where an entrepreneur has to meet with potential backers to convince them of his project's viability, crowdfunding allows an entrepreneur to solicit amounts through the Internet from people that he has never met or may never meet.[6] Amounts raised from crowdfunding are also generally smaller than venture capital or angel investments.

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1. Paul Belleflamme, Thomas Lambert, & Armin Schwienbacher, *Crowdfunding: Tapping the Right Crowd*, J. BUS. VENTURE (forthcoming), *available at* http://ssrn.com/abstract=1578175.

2. Andy Ley & Scott Weaven, *Exploring Agency Dynamics of Crowdfunding in Start-up Capital Financing*, 17 ACAD. ENTREPRENEURSHIP J. 85, 86 (2011); Jeff Howe, *The Rise of Crowdsourcing*, WIRED, Jun. 2006, at 176, 178-79, *available at* http://www.wired.com/wired/archive/14.06/crowds_pr.html.

3. KEVIN LAWTON & DAN MAROM, THE CROWDFUNDING REVOLUTION: SOCIAL NETWORKING MEETS VENTURE FINANCING 12 (2010).

4. *Id.*

5. Joachim Hemer, *A Snapshot on Crowdfunding,* ECONSTOR 8 (Fraunhofer-Institut für System- und Innovationsforschung, Working Paper No. R2/2011, 2011), *available at* http://econstor.eu/bitstream/10419/52302/1/671522264.pdf.

6. Deborah A. Jacobs, *The Trouble with Crowdfunding,* FORBES (Apr. 17, 2013), http://www.forbes.com/sites/deborahljacobs/2013/04/17/the-trouble-with-crowdfunding/.

Aside from the ease of raising funds quickly from large groups of people, crowdfunding has non-financial benefits as well such as pre-sales feedback, customer feedback, and word-of-mouth marketing.[7] For example, members of the public would be more likely to invest in a product that they think would sell well or that they themselves would buy.

Today, crowdfunding is being used in a wide array of fields—from political fundraising to making movies to producing music.[8] One of the most famous platforms today is Kickstarter, where filmmakers, musicians, artists, and designers ask for donations from the public to fund their creative projects. The FORM1 project, which aims to create an affordable 3D printer for the masses, raised $3 million on Kickstarter.[9] Pebble, a wristwatch that connects with a smartphone wirelessly to alert the user of incoming calls and messages, was unable to get additional funds through venture capitalists and angel investors, so it turned to crowdfunding and raised over $10 million from almost 70,000 people.[10] One source estimates that the value of crowdfunding transactions will double from $2.7 billion in 2012 to $5.1 billion in 2013.[11]

B. RATIONALE FOR CROWDFUNDING

1. Lack of Access to Traditional Sources of Capital

Small and micro-businesses, especially start-ups, are not always able to access traditional sources of funding. To get a new venture off the ground, entrepreneurs typically use personal funds, plus loans and contributions from family and friends.[12] However, many entrepreneurs, "particularly those who are not in the upper and middle classes,"[13] have

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7. Dan Herman, *Crowdfunding: Catalyzing Growth, Investment and Access to Capital*, DEEP CENTRE 8 (Aug. 2013), http://deepcentre.com/wordpress/wp-content/uploads/2013/10/DEEP-Centre-August-2013-Crowdfunding-Catalyzing-growth-investment-and-access-to-capital.pdf; *see generally* EUROPEAN CROWDFUNDING NETWORK, A FRAMEWORK FOR EUROPEAN CROWDFUNDING (2012).

8. JEFF HOWE, CROWDSOURCING: WHY THE POWER OF THE CROWD IS DRIVING THE FUTURE OF BUSINESS 253 (2008).

9. *The Top 25 Crowdfunding Success Stories,* ALLEY WATCH (Mar. 14, 2013), http://www.alleywatch.com/2013/03/the-top-25-crowdfunding-success-stories/.

10. *Id.*

11. David Drake, *U.S. Leads World in Burgeoning Crowdfunding Trend,* FORBES (Apr. 12, 2013), http://www.forbes.com/sites/groupthink/2013/04/12/u-s-leads-world-in-burgeoning-crowdfunding-trend/.

12. C. Steven Bradford, *Crowdfunding and the Federal Securities Laws,* 2012 COLUM. BUS. L. REV. 1, 101 (2012).

13. *Id.*

difficulty raising enough money from these personal sources.

Bank loans are typically out of reach for start-ups who have no collateral, credit history, or track record.[14] Banks may also be reluctant to lend to small projects during recessions or periods of slow economic growth.[15] Borrowing from a bank may even stifle the growth of a start-up. Loan covenants may require that a high percentage of profits be used to pay off debts instead of being reinvested in the company, or may work to prevent the company from embarking on risky projects.[16]

Even venture capitalists may not be as receptive to start-ups. First, small businesses normally cannot scale quickly enough, or do not offer the chance for a venture capitalist to exit quickly and profitably.[17] Second, a venture capitalist invests between $2 million and $10 million in a company, well beyond the capital required by a start-up.[18] This is not entirely an arbitrary decision on the part of a venture capitalist, because he may find that the transaction costs of funding a small business do not justify the investment.[19] Third, the entrepreneurs who need funding are too many, while the venture capitalists are too few and picky.[20] The emergence of open-source tools, cloud computing, and virtual office infrastructure has made it cheaper to open an Internet company, but has also made it harder for companies to attract venture capital. Venture capital firms not only fund a project, but they usually also make introductions, assist with product launching, and guide the venture at least for the first few years.[21] Therefore, it is not surprising that venture capitalists turn down ninety-nine percent of business proposals.[22] Fourth, venture capital funding has also declined due to the economic crunch. A report prepared by PricewaterhouseCoopers reveals that seed investments in American start-ups declined by forty

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14. Edan Burkett, *A Crowdfunding Exception? Online Investment Crowdfunding and U.S. Securities Regulation*, 13 TENN. J. BUS. L. 63, 70 (2011).

15. Jill E. Fisch, *Can Internet Offerings Bridge the Small Business Capital Barrier?*, 2 J. SMALL & EMERGING BUS. L. 57, 60-61 (1998).

16. *Id.*

17. David Lavinsky, *Funding Fathers*, SMART BUSINESS (Aug. 26, 2010), http://www.sbnonline.com/2010/08/funding-fathers-the-birth-of-business-crowdfunding-is-providing-new-ways-to-get-money/.

18. Bradford, *supra* note 12, at 102.

19. *Id.*

20. Lavinsky, *supra* note 17; *see* Burkett, *supra* note 14, at 70.

21. DON TAPSCOTT & ANTHONY D. WILLIAMS, MACROWIKINOMICS – REBOOTING BUSINESS AND THE WORLD 50 (2010).

22. Bradford, *supra* note 12, at 103.

percent in the final quarter of 2011, and by forty-eight percent for the entire 2011,[23] although, there was some recovery in 2012.[24] Due to the recession, fewer companies are going public, and it is feared that the United States fiscal crisis could further disrupt financial markets.[25] This means that venture capitalists have no choice but to lock in their money longer than usual in their existing ventures, instead of injecting capital into new start-ups.[26] Angel investors—rich individuals with extensive entrepreneurial experience—may be more willing to invest in start-ups than venture capitalists. However, there are far fewer angel investors compared to the number of proposed projects, and they also tend to focus on larger projects (i.e., projects that are "high-growth [and] high-return"[27]). Finally, raising capital through an initial public offering is simply out of reach for most start-ups. Transaction costs and the costs of complying with securities registration requirements are formidable for small businesses.[28] Start-ups may also be unable to attract

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23. Tom Foremski, *Are VCs Abandoning Seed Funding? Report Shows Massive 48% Dive in One Year*, SILICON VALLEY WATCHER (Jan. 20, 2012), http://www.siliconvalleywatcher.com/mt/archives/2012/01/startupwatch_ar.php.

24. Martin Zwilling, *Seed and Later Investments for Startups are Booming,* FORBES (Jan. 18, 2013), http://www.forbes.com/sites/martinzwilling/2013/01/18/seed-and-later-investments-for-startups-are-booming/.

25. *US Debt Crisis Can Cause Global Financial Turmoil: IMF,* ECONOMIC TIMES (Oct. 8, 2013), http://economictimes.indiatimes.com/news/international-business/us-default-would-likely-cause-recession-or-worse-imf/articleshow/23735274.cms.

26. TAPSCOTT & WILLIAMS, *supra* note 21, at 51.

27. Bradford*, supra* note 12, at 103.

28. In the United States, the Jumpstart Our Business Startups (JOBS) Act exempts small crowdfunded offerings from federal registration requirements, subject to certain conditions. Among other requirements, crowdfunded offerings must:

- Offering Limit: Raise capital of not more than $1 million in any 12-month period;
- Sell to any one investor, within any 12-month period:
  - Up to $2,000 or 5 percent (whichever is greater) of the investor's annual income or net worth, as applicable, if the investor has annual income or net worth of less than $100,000, or
  - Up to 10% of the investor's annual income or net worth, up to a maximum of $100,000 if the investor has an annual income and net worth of more than $100,000.

Jumpstart Our Business Startups Act, Pub. L. No. 112-106 (2012). For a discussion of the JOBS Act, *see, e.g.*, Maryam K. Ansari, *Is JOBS Act Actually Good For Small Business?*, FINDLAW (Apr. 16, 2012, 8:43 AM), http://www.reuters.com/article/2012/04/16/tagblogsfindlawcom2012-freeenterprise-idUS21 1615233420120416.

Nevertheless, the JOBS Act requires a start-up to file a report with the U.S. Securities and Exchange Commission ("US SEC") prior to offering to investors, as well as annual reports and any other documents that the US SEC may require. Therefore, even with the JOBS Act, start-ups are still subject to significant reporting requirements.

Moreover, the rules approved by the US SEC in July 2013 for Title II of the JOBS Act only allow solicitation to accredited investors. Under the rules, a person is an accredited the attention of reputable underwriters who can price, sell, and organize a public offering. In addition, "the risks associated with investment in a small business, including agency costs and informational asymmetries, as well as the basic uncertainty associated with the development of unproven products or services, are likely to render the cost of passive equity investments too high."[29]

2. Reduced Transaction Costs

Before the advent of the Internet, informational inefficiency plagued small businesses. This meant that even if funding was available, it was difficult to match entrepreneurs with funders.[30] Contacting at least twenty active investors would have taken at least four months.[31] Raising small amounts of money from numerous investors in diverse locations from all over the globe would have been almost impossible.

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investor if he or she has either:

- An individual net worth or joint net worth with a spouse that exceeds $1 million at the time of the purchase, excluding the value (and any related indebtedness) of a primary residence; or
- An individual annual income that exceeded $200,000 in each of the two most recent years or a joint annual income with a spouse exceeding $300,000 for those years, and a reasonable expectation of the same income level in the current year.

Press Release, U.S. Sec. & Exch. Comm'n, Eliminating the Prohibition on General Solicitation and General Advertising in Certain Offerings (July 10, 2013) (on file with SEC), *available at* http://www.sec.gov/news/press/2013/2013-124-item1.htm.

Because of their net worth or income, these individuals are presumed to be sophisticated investors. However, the pool of accredited investors, as defined above, is small. Moreover, not all countries exempt crowdfunding from the usual registration requirements for initial public offerings. For instance, Canada has no national law similar to the JOBS Act that exempts crowdfunding from many securities registration requirements. *See, e.g.*, Christine Dobby, *A Case for Crowdfunding*, FINANCIAL POST (Apr. 18, 2012), http://business.financialpost.com/2012/04/18/a-case-for-crowdfunding/. Recently, a few provinces in Canada have approved or proposed different crowdfunding frameworks, but these cover only issuers or investors within the said provinces. John Wires, *Canadian Regulators Heading Different Directions on Equity Crowdfunding,* NATIONAL CROWDFUNDING ASSOCIATION OF CANADA (Jul. 25, 2013), http://www.ncfacanada.org/ canadian-regulators-heading-different-directions-on-equity-crowdfunding/.

29. Fisch, *supra* note 15, at 61.

30. Bradford, *supra* note 12, at 101.

31. Chance Barnett, *The Crowdfunder's Guide to General Solicitation and Title II of the JOBS Act,* FORBES (Sept. 23, 2013), http://www.forbes.com/sites/chancebarnett/2013 /09/23/the-crowdfunders-guide-to-general-solicitation-title-ii-of-the-jobs-act/2/.

However, the development of Web 2.0, a Web-as-participation-platform, has facilitated access to networks of investors or consumers from around the world[32] and reduced the transaction costs associated with start-up funding.[33] Through Web 2.0, an entrepreneur can "in real time and with no incremental cost . . . [sell] to literally millions of potential investors . . . [who have] access to nearly unlimited information in selecting among potential investments."[34]

As Yannis Bakos explains, a market has three main functions: "matching buyers and sellers; facilitating the exchange of information, goods, services, and payments associated with market transactions; and providing an institutional infrastructure such as a legal and regulatory framework that enables the efficient functioning of the market."[35] Crowdfunding platforms leverage the Internet "to perform these functions with increased effectiveness and reduced transaction costs, resulting in more efficient, 'friction-free' markets."[36]

In addition, crowdfunding disintermediates traditional financing channels.[37] For instance, banks pool funds of their depositors and then lend these funds to entrepreneurs. In crowdfunding, entrepreneurs go straight to the would-be depositors to request funds, and avoid the transactions costs associated with using banks.

3. Diversity of Investments

In addition to enabling start-ups to raise funds from non-traditional sources, "crowdfunding provides a new outlet for the capital of ardent consumer-investors on the Internet."[38] Crowdfunders may choose to fund projects, which conventional financiers may find "too risky, unpredictable, [or] just plain bizarre,"[39] or perhaps, too poorly presented.[40] "These crowdfunded ventures may be more welfare-enhancing or more successful in their relevant product or service markets than businesses and projects funded through standard venture capital financings."[41] Thus, crowdfunding targets small businesses,

32. Belleflamme, Lambert, & Schwienbacher, *supra* note 1.

33. Bradford, *supra* note 12, at 5.

34. Stuart R. Cohn & Gregory C. Yadley, *Capital Offense: The SEC's Continuing Failure to Address Small Business Financing Concerns*, 4 N.Y.U. J. L. & BUS. 1, 6 (2007).

35. Yannis Bakos, *The Emerging Role of Electronic Marketplaces on the Internet*, COMMUNICATIONS OF THE ACM, Aug. 1998, at 35.

36. *Id.*

37. Herman, *supra* note 7.

38. Joan MacLeod Heminway & Shelden Ryan Hoffman, *Proceed at Your Peril: Crowdfunding and the Securities Act of 1933,* 78 TENN. L. REV. 879, 931-32 (2011).

39. Burkett, *supra* note 14, at 70.

40. Hemer, *supra* note 5, at 2.

41. Heminway & Hoffman, *supra* note 38, at 932.

which are typically underserved or not served at all by traditional financing sources.[42]

On a typical crowdfunding website, an entrepreneur describes his proposed product and business plan, and lists what people can receive in exchange for their contributions.[43] Investors choose projects that appeal to them, decide how much they wish to chip in, and send in the chosen amount. The crowdfunding portal usually receives the initial contributions from, and releases the promised proceeds back to, the investors on behalf of the entrepreneur.[44]

C. THE EQUITY MODEL OF CROWDFUNDING

Crowdfunding models can be classified based on what investors stand to gain: (1) the donation model;[45] (2) the reward model;[46] (3) the pre-purchase model;[47] (4) the lending model;[48] and (5) the equity model.

We focus on the equity model in this paper.[49] Under this model, investors are promised a share of the profits or equity in the business.[50] The equity crowdfunding model is currently less popular in the United States than elsewhere, due to concerns regarding the securities laws.[51]

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42. Admittedly, venture capitalists and angel investors may provide more than just financing. For instance, they may dispense valuable advice and monitor the performance of these start-ups. However, as argued by C. Steven Bradford in his article, *Crowdfunding and the Federal Securities Laws,* crowdfunding is not a substitute for venture capital or angel investing because it is aimed at entrepreneurs who would not have been served by venture capitalists and angel investors in the first place. *See* Bradford, *supra* note 12, at 104.

43. *See id.* at 1, 10.

44. *See id.*

45. Under this model, funders receive nothing in exchange for their contributions.

46. Under this model, investors are offered rewards, but such rewards do not take the form of a stake in the business or a share in the earnings. Acknowledgment or recognition of the investor on the website is one example of a reward. Kickstarter is a famous example, where funders of a movie or film might be invited to the initial screening.

47. Funders receive the product being made, or to be made, by the start-up, in exchange for their contributions.

48. Investors loan funds, in exchange for repayment of the principal, with or without interest. This model is also called peer-to-peer lending, or social lending. *See* TAPSCOTT & WILLIAMS, supra note 21, at 54-56.

49. For a more detailed discussion of the four other kinds, see Bradford, *supra* note 12 at 1, 14-27.

50. *See id.* at 1, 10.

51. *Id.*

It is perhaps no accident that famous equity-based crowdfunding platforms like Grow VC and CrowdCube are based outside the United States. Although with the passage of the Jumpstart Our Business Startups (JOBS) Act, the equity crowdfunding model may increase in popularity in the United States.[52]

1. Grow VC

Grow VC, a Hong Kong-based platform, was launched in February 2010.[53] There are no membership fees and the network is open to anyone. Funders can make micro-investments into their chosen start-ups starting from twenty dollars a month, or make larger direct investments from their personal capital.[54]

The Grow VC website displays descriptions of project proponents and their business plans, the history of each start-up, and funds raised to date by each venture, together with members' feedback and replies.[55] Only if the target amount for a pitch is reached will the proponent actually receive the funds.[56]

Grow VC provides a standard term sheet for micro-investments, which is the starting point for negotiating the terms and conditions of direct investments.[57] Micro-investors are rewarded based on criteria such as timing of selection[58] (i.e., those who invested earlier may reap higher returns). For direct investments, the return on investment is distributed to investors according to their agreement with the start-up.[59] Thus, under Grow VC's business models, members are trained to identify and choose projects that will eventually succeed.[60] According to a report released by Grow VC, startups can raise up to $1,000,000 on

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52. The US SEC has not yet issued rules for Title III of the JOBS Act, which governs crowdfunding. Until such final rules are issued (estimated to be in 2014), crowdfunding is not permitted in the United States. *See* Barnett, *supra* note 31.

53. *See* Burkett, *supra* note 14, at 75-78.

54. *For Investors*, GROW VC, http://www.growvc.com/main/tour/for-investors/ (last visited Jan. 30, 2014).

55. *Id.*

56. *Id.*

57. *How do I negotiate terms and conditions?,* GROW VC, http://www.growvc.com/help/2010/06/09/how-do-i-negotiate-terms-and-conditions/ (last visited Jan. 30, 2014).

58. *How does ROI work for investments?*, GROW VC, http://www.growvc.com/help/2011/03/22/how-does-roi-work-for-investments/ (last visited Jan. 30, 2014).

59. *How does ROI work for investments?,* GROW VC, http://www.growvc.com/help/2011/03/22/how-does-roi-work-for-investments/ (last visited Jan. 30, 2014).

60. *See* Burkett, *supra* note 14, at 75-78.

their platform from over 12,000 registered users.[61] If a startup is successful, it will pay GrowVC transaction management fees, which is two and one-half percent of the raised capital.[62] For micro-investors, GrowVC gets commissions only on the returns (i.e., only if the startup generates returns).[63] There are no commissions on direct investments.[64]

2. CrowdCube

CrowdCube is another crowdfunding portal, based in the United Kingdom.[65] Since it was established in February 2011, CrowdCube has funded sixty-four pitches, with an average amount invested of £2,700 (approximately U.S. $4,300).[66] It has 43,224 members who have invested a total of £18,948,529 (approximately U.S. $30,000,000).[67]

On the CrowdCube website, entrepreneurs pitch their business ideas online. CrowdCube provides a discussion forum for each business pitch. On these discussion boards, the entrepreneur can answer questions, and members can discuss the project amongst themselves.[68] Funders can contribute as low as £10 (approximately U.S. $16).[69] The pitches that each member has invested in are displayed in the member's public profile, but the amount invested in each pitch is not displayed.[70] Investors are given shares or equity in the business and possibly rewards, such as discounts on future purchases of the product.[71] The majority of shares issued are B shares, or non-voting shares.[72]

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61. GROW VC, http://www.growvc.com/main/media/ (last visited Jan. 30, 2014).

62. *Closing Process Fees,* GROW VC, http://www.growvc.com/help/2011/04/03/should-i-pay-some-additional-costs/ (last visited Jan. 30, 2014).

63. *What Commission Does Grow VC take?*, GROW VC, http://www.growvc.com/help/2010/08/04/what-commission-does-grow-vc-take/ (last visited Jan. 30, 2014).

64. *Id.*

65. It is currently limited to investors with a UK residential address and bank account. *FAQ*, CROWDCUBE, http://www.CrowdCube.com/pg/CrowdCube-faq-20 (last visited Jan. 30, 2014).

66. *CrowdCube Infographic*, CROWDCUBE, http://www.CrowdCube.com/infographic (last visited Jan. 30, 2014).

67. *Id.*

68. *FAQ, supra* note 65.

69. *Id.*

70. *Id.*

71. *Id.*

72. *Id.*

Each project is given up to sixty days to reach its target investment or fundraising goal.[73] If there are not enough contributions to reach the entrepreneur's target amount, all investments are returned to the investors.[74] For each successful pitch, CrowdCube deducts a success fee of five percent of the target amount,[75] and charges legal fees of £1750 (approximately U.S. $2,800).[76] There are no fees if a pitch is not successful.[77]

II. THE LEMONS PROBLEM IN CROWDFUNDING

A. THE LEMONS PROBLEM IN GENERAL

The lemons problem, articulated by Nobel Prize winner George Akerlof, is a familiar issue in markets with asymmetric information, that is, markets in which sellers know the quality of the goods they are offering, but buyers do not.[78] Buyers are aware that some of the goods in the market are of good quality, while the rest are of bad quality ("lemons").[79] However, if buyers cannot observe quality, they cannot distinguish between good and bad quality products. Thus, buyers will not be willing to pay a high price for a good, simply because they do not know if that item is indeed of high quality. In short, buyers are prepared to pay only a price "which reflects the average quality of all units on the market."[80] This price rewards the sellers of low quality goods, but is unacceptable to sellers of high quality goods. The latter, unable to secure the correct price for their goods, will not participate in the market.[81] As more high quality sellers exit the market, the expected average price goes down. In the end, high quality units are driven from the market, and only the "lemons" are left.[82]

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73. *Id.*
74. *Id.*
75. *Id.*
76. *Id.*
77. *Id.*
78. George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488, 488 (1970).
79. John E. Kwoka, Jr., *The Federal Trade Commission and the Professions: A Quarter Century of Accomplishment and Some New Challenges*, 72 ANTITRUST L. J. 997, 1001 (2005).
80. *Id.*
81. Cynthia G. McDonald & V. Carlos Slawson, *Reputation in an Internet Auction Market*, 40 ECON. INQUIRY 633, 634 (2002).
82. *See* Kwoka, Jr., *supra* note 79, at 1001-02.

It is even possible that no market will exist in the long run. As explained by Akerlof:

> (I)n a more continuous case with different grades of goods, even worse pathologies can exist. For it is quite possible to have the bad driving out the not-so-bad driving out the medium driving out the not-so-good driving out the good in such a sequence of events that no market exists at all.[83]

An alternative (but no less pessimistic) scenario is painted by economics professor Kwoka, Jr: in markets where quality is endogenous (i.e., under the control of the provider), sellers who would have sold high quality goods may lower the quality of their products "to avoid being driven out of the market entirely."[84]

B. THE LEMONS PROBLEM IN CROWDSOURCING OF LABOR

Panos Ipeirotis, an associate professor at New York University, has suggested that there could be a lemons problem in crowdsourcing, specifically, in Amazon's Mechanical Turk ("AMT") platform.[85] The AMT platform works as follows:

> Amazon's Mechanical Turk platform ('AMT') exemplifies the cognitive piecework model of crowdsourcing. Firms register on AMT to access an immense pool of workers (called 'Providers'), estimated at 200,000 in total. The firms (called 'Requesters') post "Human Intelligence Tasks" (or 'HITs'), which typically involve basic computing and language skills, such as tagging photos according to their content, rewriting sections of prose, transcribing audio, choosing representative screenshots from a short video clip, responding to survey questions, translating text, or performing internet research. Anywhere from 20,000 to 100,000 HITs are available at one time, and Requesters post 20,000 to 40,000 new HITs every day.[86]

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83. *See* Akerlof, *supra* note 78, at 490.

84. Kwoka, Jr., *supra* note 79, at 1001-02.

85. Panos Ipeirotis, *Mechanical Turk, Low Wages, and the Market for Lemons*, A COMPUTER SCIENTIST IN A BUSINESS SCHOOL (July 27, 2010), http://www.behind-the-enemy-lines.com/2010/07/mechanical-turk-low-wages-and-market.html; *see also* Karen Fort, Gilles Adda, & K. Bretonnel Cohen, *Amazon Mechanical Turk: Gold Mine or Coal Mine?*, 37 COMPUTATIONAL LINGUISTICS 413, 418 (2011).

86. Alek Felstiner, *Working the Crowd: Employment and Labor Law in the Crowdsourcing Industry*, 32 BERKELEY J. EMP. & LAB. L. 143, 148 (2011).

According to Ipeirotis, wages at AMTs are very low, and in fact, wages of one dollar or lower are prevalent.[87] He explains that, as in the real world, when a new employee starts work, the employer usually tests the incoming employee to ensure the quality of his work.[88] Both high and low quality workers receive a low salary during this testing period.[89] Ideally, in time, the high quality workers are able to prove their worth, and their salaries are adjusted upwards.

Similarly, in AMTs, Requesters are unable to distinguish between low and high quality Providers before the Providers work on a task.[90] Thus, Requesters pay everyone as if they are low quality workers (i.e., with low wages).[91] The result is that good Providers are "doomed to receive the same level of compensation"[92] as the bad Providers, and are "drowning in the anonymity of the crowd."[93]

To be fair, Requesters can require Providers to pass certain qualification tests before they can work on HITs, limit Providers to those within a certain location, or require that they must have completed a minimum number of HITs.[94] In addition, a Provider is paid only when his work is approved by a Requester.[95] However, verifying the quality of work performed by a Provider takes time and entails expenses.[96] These costs could very well approximate the cost of the Requester performing the task itself, which negates the very advantage of crowdsourcing: providing work at lower costs.[97]

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87. Panos Ipeirotis, *Does Lack of Reputation Help the Crowdsourcing Industry?,* A COMPUTER SCIENTIST IN A BUSINESS SCHOOL (Nov. 15, 2011), http://www.behind-the-enemy-lines.com/2011/11/does-lack-of-reputation-help.html.

88. *Id.*

89. *Id.*

90. *Id.*; Ipeirotis, *supra* note 85; *see also* Fort, Adda, & Cohen, *supra* note 85, at 418.

91. Ipeirotis, *supra* note 85; *see also* Fort, Adda & Cohen, *supra* note 85, at 418; Ipeirotis, *supra* note 87.

92. Ipeirotis, *supra* note 87.

93. *Id.*

94. *How It Works*, AMAZON MECHANICAL TURK, https://requester.mturk.com/tour/how_it_works (last visited Feb. 7, 2014).

95. *Id.*

96. Panagiotis G. Ipeirotis, Foster Provost, & Jing Wang, *Quality Management on Amazon Mechanical Turk*, *Proceedings of the ACM SIGKDD Workshop on Human Computation,* 1 (2010), *available at* http://www.misrc.umn.edu/workshops/2012/fall/Ipeirotis.pdf.

97. *Id.*

C. THE LEMONS PROBLEM IN CROWDFUNDING

A lemons problem similar to that in crowdsourcing may arise in crowdfunding. There are high quality entrepreneurs and low quality entrepreneurs. A fraudulent entrepreneur could lure funders to invest in his project, and subsequently disappear with the funds, never to be heard from again. An entrepreneur may also exaggerate the projected returns on his project, and other promoters may be led to similarly puff up their prospects to attract investors.[98] The result would be "a crowdfunding market full of unrealistic, and likely fraudulent, sales pitches."[99] Founders may also unfairly extract value from the business by paying themselves inordinately high salaries or charging personal expenses to company funds.[100]

Whether an entrepreneur or a project is good or bad constitutes information that is largely hidden from funders. A start-up takes some time before it can generate revenue. Thus, a funder not only has to contribute money before he can participate in a venture, he may have to wait for years before he can determine if he will get a return on his investment. In a worst-case scenario, the investment may turn out to be a total hoax and he may be unable to track down the entrepreneur, who may well be located in a different jurisdiction.[101]

To be fair, dishonest and unscrupulous entrepreneurs have existed in the offline world, even before the advent of Web 2.0. However, because crowdfunding is done through the Internet, investors are more likely to be in a jurisdiction different from that of the entrepreneur. This makes it more difficult to obtain redress against swindlers.[102] Also, because funds can be raised more quickly through the Internet, a fraudster may have already absconded with the money before the government authorities can be alerted. Moreover, "electronic markets introduce additional inefficiencies, as participants can change their names, such as with a different free e-mail service, thereby shedding

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98. Burkett, *supra* note 14, at 97.

99. *Id.* at 97-98.

100. Daniel Isenberg, *The Road to Crowdfunding Hell*, HARVARD BUSINESS REVIEW BLOG NETWORK (Apr. 23, 2012), http://blogs.hbr.org/cs/2012/04/the_road_to_crowd funding_hell.html.

101. Toshio Yamagishi et al., *Solving the Lemons Problem with Reputation*, ETRUST: FORMING RELATIONSHIPS IN THE ONLINE WORLD 73 (Karen S. Cook et al. eds. 2009) (citations omitted).

102. Fisch, *supra* note 15, at 81.

negative reputation and associated repercussions."[103] Thus, "[c]ompanies with small capitalizations present disproportionate risks of . . . fraud"[104] because the "low cost and wide distribution"[105] of business pitches over the Internet may magnify the risks of fraud. Thus, online investors face greater uncertainty than investors in offline brick and mortar businesses. "The high level of information asymmetry"[106] in crowdfunding "creates a situation ripe for fraud, embezzlement, and the lemons problem."[107] Hence, in the crowdfunding market, investors may be unable to tell which start-ups are fraudulent, and will therefore reduce the amount they are willing to invest.[108] Honest and high quality entrepreneurs may exit the market, which further reduces the price that investors are willing to invest.[109]

Even without fraud or dishonesty on the part of both entrepreneurs and investors, the lemons problem may still arise. Entrepreneurs inevitably have more information on the workings and the prospects of their projects. At the start of a project, "[v]irtually all of the important decisions bearing on the company's success remain to be made, and most of the significant uncertainties concerning the outcome of the company's efforts remain unresolved."[110] Once the venture is up and running, "uncertainty concerning future performance is magnified."[111] Certainly, the project plan posted on the crowdfunding platform cannot be too accurate, as such a business plan is little more than an educated guess.[112] There may be uncertainties as to whether the proposed product will perform as expected or whether it will be received by its target market as hoped. Any available information at the time of investment is soft information (i.e., "not easily observable by an investor and difficult for an entrepreneur to communicate credibly"[113]). "In short, the entrepreneur holds all the cards. Investors have little information about what is to come and little control over what the entrepreneur does."[114]

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103. McDonald & Slawson, *supra* note 81, at 634.

104. Fisch, *supra* note 15, at 58.

105. *Id.*

106. Yamagishi et al., *supra* note 101, at 73.

107. *Id.*

108. Stephen J. Choi, *Gatekeepers and the Internet: Rethinking the Regulation of Small Business Capital Formation*, 2 J. SMALL & EMERGING BUS. L. 27, 38 (1998).

109. *Id.* at 38-39.

110. Ronald J. Gilson, *Engineering a Venture Capital Market: Lessons from the American Experience*, 55 STAN. L. REV. 1067, 1076–77 (2003).

111. *Id.* at 1076.

112. Abraham J. B. Cable, *Fending for Themselves: Why Securities Regulations Should Encourage Angel Groups*, 13 U. PA. J. BUS. L. 107, 121-22 (2010).

113. *Id.* at 122.

114. Bradford, *supra* note 12, at 107.

In fact, even if the entrepreneur wanted to disclose as much information as possible, it may not always be wise for him to be too specific or too detailed in his project pitch. Because he will post his project pitch on the crowdfunding website, his business plan is accessible to the world. Contrast this with the situation in traditional financing, where the entrepreneur presents his idea to a limited group of banks, venture capitalists and/or angel investors.[115] Also, in traditional financing, the entrepreneur can normally ask all potential investors (who are usually few) to sign non-disclosure agreements. It would be impractical for an entrepreneur on a crowdfunding platform to ask every person viewing his pitch to sign a non-disclosure agreement,[116] and unrealistic to assume that he can monitor and determine if another entrepreneur has stolen his idea. Thus, the risk of somebody else stealing his idea may be aggravated in crowdfunding.

Assuming that the entrepreneur could safely disclose all information to potential funders, the average investor on the crowdfunding platform may not be able to fully comprehend all information. After all, "investors are not specialists and thus have access to less information about the industry, past performance of the entrepreneur, and many other pieces of value-relevant information."[117] The fact that start-up businesses are smaller and have little or no track record makes it harder for funders to independently verify the information offered by the entrepreneurs.[118]

Thus, due to information asymmetry (whether or not caused by fraud or dishonesty), funders cannot easily tell good investments from bad, so they will "discount all the opportunities or price them all as mediocre."[119] High quality start-ups would be reluctant to accept discounted prices, and over time, may desert the crowdfunding market.[120]

The lemons problem may be intensified by the fact that there are hardly any barriers to entering the crowdfunding platform market. Absence of substantial barriers to entry may lead to "a flood of projects of

115. Armin Schwienbacher & Benjamin Larralde, *Crowdfunding of Small Entrepreneurial Ventures*, HANDBOOK OF ENTREPRENEURIAL FINANCE (manuscript at 10) (on file with author) (forthcoming).

116. Hemer, *supra* note 5, at 28.

117. Schwienbacher & Larralde, *supra* note 115.

118. Choi, *supra* note 108, at 38.

119. Cable, *supra* note 112, at 122.

120. Paul Resnick et al., *Reputation Systems*, COMMUNICATIONS OF THE ACM, Dec. 2000, at 45, 47.

all kinds of quality [that will overtake] . . . the site."[121] If a potential investor has to spend much time and effort to study each project and form opinions on: (i) whether the entrepreneur is giving a complete and accurate description of the project; (ii) whether the product or service will be well-received by its target market; and (iii) whether his return on that project will be high enough to entice him to invest, it degrades user experience and discourages him from participating in future fundraising.[122]

Furthermore, peer effects may worsen the lemons problem. Investors may be unusually responsive to decisions of other investors, that is, they contribute more when a project successfully fundraises, and are swayed into investing into the most popular projects.[123] This is not surprising, because crowdfunding may be classified as an experience good,[124] meaning that funders can confirm the quality of an investment only after they invest and after sufficient time has elapsed for the venture to turn in a profit. Thus, crowdfunders look at related projects and at the actions of other crowdfunders in deciding whether to invest.[125] If a potential funder hears of another investor being the victim of a scam or losing his money in a crowdfunding venture, he will more likely shy away from crowdfunding altogether.[126] In fact, even mere perceptions of dishonesty in the market may decrease investor confidence and cause potential funders to stay away.[127]

121. Bakor Al-Tayar, Exploring the Characteristics and Use of Online Profile Based Crowdfunding 57 (Dec. 22, 2011) (unpublished manuscript) (on file with author), *available at* http://www.crowdsourcing.org/document/exploring-the-characteristics-and-use-of-online-profile-based-crowdfunding/10297.

122. *Id.*

123. Chris Ward & Vandana Ramachandran, *Crowdfunding the Next Hit: Microfunding Online Experience Goods* 4, *available at* http://people.cs.umass.edu/~wallach/workshops/nips2010css/papers/ward.pdf (last visited Mar. 11, 2014).

124. Phillip Nelson, *Information and Consumer Behavior,* 78 J. POL. ECON. 311, 311 (1970); Belleflamme, Lambert, & Schwienbacher, *supra* note 1.

125. Ward & Ramachandran, *supra* note 123.

126. In early August 2012, the Massachusetts Securities Division charged a Lowell, Massachusetts man for collecting $153,396 from twenty people who were led to believe that they were investing in a gaming site. This led the Secretary of the Commonwealth, who brought the case, to warn the US SEC of the pitfalls of relying on the wisdom of the crowds. Beth Pinsker Gladstone, *Crowdfunding Scams Top Investor Threat: Regulators,* REUTERS (Aug. 21, 2012), http://www.reuters.com/article/2012/08/21/us-investing-scams-threats-idUSBRE87K17W20120821. Although it is not clear if news of this crowdfunding scam has deterred investors, the warning by the Secretary of the Commonwealth is one example of how one scam can prompt the government to be wary of crowdfunding in general. *Id.*

127. Heminway & Hoffman, *supra* note 38, at 936.

III. PROPOSED SOLUTIONS TO THE LEMON PROBLEM

A. REPUTATION AS A SIGNALLING DEVICE

According to economist Michael Spence, the lemons problem identified by Akerlof can be mitigated by "signalling."[128] For instance, in a job market, employers who normally could not distinguish between high and low quality workers can look at an employee's education as a signal of quality.[129] Thus, education as a signal can mitigate the information asymmetry in the job market.[130]

A reputation or ratings system can similarly mitigate the information asymmetry in the crowdfunding market by reducing uncertainty on the part of investors and thus, allow a market for quality goods.[131] Signals regarding the quality of a start-up can be transmitted to investors via a reputation or ratings system, similar to the ratings system on Internet auction markets like eBay and marketplaces like Amazon.com.

Reputation systems mimic "how reputation is built in the real world; by collecting information on the past behavior of a seller (or buyer) and making this information available to future transaction partners."[132] In the world of Web 2.0, the costs of tallying, displaying, and distributing this information is almost, if not, zero, and this information can be transmitted to millions of people around the world almost instantaneously.[133] For instance, a study of eBay auctions confirms the value of reputation systems in online markets:

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128. Mingfeng Lin, Siva Viswanathan, & N. R. Prabhala, Judging Borrowers by the Company They Keep: Friendship Networks and Information Asymmetry in Online Peer-to-Peer Lending (July 1, 2011) (unpublished manuscript) (on file with Western Finance Association), *available at* http://ssrn.com/abstract=1355679; Michael Spence, *Job Market Signaling*, 87 Q. J. ECON. 355, 355 (1973).

129. *Id.*

130. *Id.*

131. McDonald & Slawson, *supra* note 81, at 634; Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981); Douglas W. Diamond, *Reputation Acquisition in Debt Markets*, 97 J. POL. ECON. 828 (1989); Carl Shapiro, *Premiums for High Quality Products as returns to Reputations*, 98 Q. J. ECON. 659 (1983).

132. Al-Tayar, *supra* note 121, at 67.

133. *Id.* at 57.

> Higher reputation sellers experience higher auction prices, ceteris paribus. Our findings suggest that repeat players are rewarded for building reputation. Consistent with the belief that the high-reputation seller's value of future transactions outweighs the value of taking advantage of the buyer in the current transaction, buyers are willing to pay more to a higher-reputation seller.[134]

As applied to crowdfunding, entrepreneurs with good ratings from community members can command higher prices[135] or solicit more contributions, because a significant proportion of investors may be willing to pay a premium for dealing with such well-regarded entrepreneurs.[136]

In fact, the mere act of agreeing to be rated (when ratings are optional) may help convey high quality, even before ratings are available.[137] Other ways of signalling quality are using "one's real name, rather than a pseudonym, and . . . [indicating] on a Web site that one also has a physical store with its attendant overhead costs."[138]

A few crowdfunding platforms have in fact begun to use reputation or ratings systems. For instance, Grow VC allows investors to view the ratings of entrepreneurs. Users can express a positive opinion on a start-up (which increases the reputation of that start-up), or express a negative opinion (which decreases the reputation of that start-up). Users can further evaluate a start-up, by rating the start-up from one to five (five being the highest) on criteria such as "How ingenious and competitive is the . . . [proposed product or service]?" At the evaluator's option, the results of the evaluation can be anonymized from the public, or from the public and the start-up. However, there appears to be no similar rating or reputation system on CrowdCube.

Ratings take on even more importance considering that most crowdfunding platforms do not guarantee the performance of their listed start-ups. While Grow VC performs a preliminary review of any proposed business plan, it makes an express disclaimer:

> GROW VC does not evaluate or endorse any of the opportunities submitted by the Entrepreneurs nor does it make any recommendations regarding the appropriateness of particular opportunities for any Funder. GROW VC makes no independent investigations to verify the factual information submitted to the Funder and GROW VC makes no representations or warranties with respect to the information

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134. McDonald & Slawson, *supra* note 81, at 634.

135. As used in this paper, higher prices can be in the form of giving less equity to an investor in exchange for the same amount of contribution. For instance, instead of giving two common shares in the enterprise in exchange for every $100 contributed, the investor will be given only one common share.

136. Resnick, *supra* note 120.

137. *Id.*

138. *Id.*

> provided by the Entrepreneurs. As a result, Funders must conduct their own investigation of the merits and risks of each opportunity, and negotiate the terms of their investment in any such opportunity. All Funders are strongly encouraged to seek legal and other professional counsel prior to making such investments.[139]

CrowdCube also performs an initial review of each entrepreneur, but issues the same disclaimer to funders:

> Whilst CrowdCube does vet businesses before they are listed on CrowdCube, investors should call upon their own judgement, knowledge and research along with that of the Crowd (other Investors within CrowdCube) to decide whether the Entrepreneur is worthy of their investment.[140]

Thus, when a crowdfunding platform does not screen, or performs only a cursory study of start-ups, the power of the crowd to distinguish between good and bad investments can be harnessed.[141]

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139. GROW VC, *supra* note 54.

140. CROWDCUBE, *supra* note 66.

141. Some crowdfunding platforms take a more active part in screening project pitches. For instance, the Swiss site Investiere, which claims that it is a hybrid model with a more traditional venture capital approach, performs the following four-stage vetting:

Step 1: Screening: Pre-selection of projects based on defined criteria: industry, team, capital need, stage, domicile.

Step 2: Curation: by network of industry experts who analyze market potential of the product, realistic business approach, and team capabilities and network.

Step 3: Structured due diligence with additional emphasis on team and further third-party opinions. Meetings and interviews are usually arranged between the experts of Investiere and the project proponents.

Step 4: Deal set-up: Elaboration and refinement of company profile and investment proposal, plus a short video production to introduce the team and product. *See Our Selection Process*, INVESTIERE, https://www.investiere.ch/content/our-selection-process (last visited Mar. 11, 2014). Despite all these screenings, all investors are required to agree to the following terms and conditions prior to registration on the website:

> 3.2. Investors take all investment decisions in reliance on her or his own judgment and VERVE does not advice on the merits or sustainability of any transaction. Any investment idea is given without any representations, warranty or guarantee as to the accuracy or completeness of such information.
>
> 3.3. Investors understand that investments involve significant risks and the value of any investment may in- or decrease. No assurance can be given that the investment objective of any investment proposal will be achieved or that substantial losses will not be suffered. ANY INVESTMENT FACILITATED THROUGH THE WEBSITE MAY LOSE SOME OR ALL OF ITS VALUE AT ANY POINT.

Terms of Use, INVESTIERE, https://www.investiere.ch/legal (last visited Mar. 11, 2014).

To be sure, reputation systems are not without their share of problems. Paul Resnick et al. enumerated three challenges in Internet reputation systems:

- eliciting feedback (e.g., there is little incentive for participants to provide feedback);
- distributing feedback (e.g., it is difficult, if not impossible, to transfer user ratings from one website to another); and
- aggregating and displaying feedback (e.g., ratings do not factor in the reputations of the people giving feedback).[142]

However, these challenges are not insurmountable.[143] For instance, feedback from more active members could be given more weight, as opposed to opinions of new or less active members. Thus, members will have incentives to evaluate other members, because the more active they are in the crowdfunding platform, the more weight will be given to their ratings, and the better their reputation will be.

Another common problem with reputation systems is that some people can freely change their user and profile names, or easily switch to another crowdfunding platform. This allows them to erase the effect of any prior negative feedback given to them in a crowdfunding platform. However, this issue may be managed by using a positive reputation system.

Peter Kollock, a social psychologist, explains the two kinds of reputation systems, a positive system and a negative system, as follows:

> A positive system evaluates traders only in the positive direction. A new entrant receives a neutral reputation of zero, the lowest possible level given that all evaluations are positive. A negative reputation system, by contrast, evaluates only in the negative direction . . . (T)raders who have acquired a negative reputation have an incentive to change their identity and re-enter the market with a fresh reputation score of zero. Under such a system, therefore, reputation does not accumulate. On the other hand, traders under the positive system have incentives to maintain their reputation because a positive reputation is a valuable asset . . . (T)he freedom to change identities does not affect the effectiveness of the positive system given that traders voluntarily keep their brand name once they have acquired a good reputation.[144]

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142. Resnick, *supra* note 120, at 47-48.

143. *Id.* at 47.

144. Peter Kollock, *The Production of Trust in Online Markets*, *in* 16 ADVANCES IN GROUP PROCESSES 99-123 (E. J. Lawler, M. Macy, S. Thye, & H. A. Walker eds. 1999); Yamagishi et al., *supra* note 101, at 73, 76.

To understand why positive reputation is useful in online trading, we need to realize that there are two functions of reputation: exclusion and inclusion. The power of negative reputations is based on the principle of exclusion. Negative reputations exclude dishonest traders from the market. The power of positive reputations, in contrast, is based on the principle of inclusion. Positive reputations are not effective for excluding dishonest traders from the market. However, positive reputations are useful in attracting potential trading partners.[145]

By relying more on positive reputation and less on negative reputation (which can be easily escaped on the Internet by simply changing one's username), funders can more easily avoid unscrupulous entrepreneurs masquerading under a new username and choose truthful entrepreneurs with positive reputations.

B. SOCIAL NETWORKS AS A SIGNALLING DEVICE

A study by Mingfeng Lin, Siva Viswanathan, and N. R. Prabhala of peer-to-peer ("P2P") lending found that friendship networks matter because of the social stigma of default, i.e., the disutility suffered by borrowers when friends learn about their default.[146] "If social stigma costs matter, borrowers who perceive themselves as being likely to default should avoid forming friendships. This makes friendships a credible signal of default . . . "[147] In other words, a borrower who defaults will experience some disutility if his friends learn about it, so he will avoid making friends if he thinks that he will default.

Moreover, in P2P lending, it is not only the fact of having friends that matter, but the quality of such friends. As discussed by Mingfeng Lin, Siva Viswanathan, and N. R. Prabhala, friendship is demonstrated on the website, www.Prosper.com, the largest P2P lending market. Information about friends of borrowers is displayed prominently in the potential borrower's listing and friends of borrowers are classified into five levels.

Level 1 is the weakest kind of friendship. To form a friendship, the inviting member fills out the friend's email address and a short message. Prosper.com sends the invitee an email message that contains a

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145. Kollock, *supra* note 144; Yamagishi et al., *supra* note 103, at 73, 76, 103.

146. Lin , Viswanathan, & Prabhala, *supra* note 128, at 2; Jennifer Crocker, Brenda Major, & Claude Steele, *Social Stigma*, *in* THE HANDBOOK OF SOCIAL PSYCHOLOGY 504-53 (1998).

147. Lin, Viswanathan, & Prabhala, *supra* note 128, at 2.

link to join Prosper. The recipient can click on the link to join Prosper.com and establish a friendship. Thus, the presence of a friendship tie on Prosper.com suggests at the very least, that the two individuals have each other's email address, which constitutes offline, non-public information about each other.[148] Level 2 friends are those who have given enough information to qualify as lenders (e.g., credit history and income) or as borrowers (e.g., verification of identity and credit history).[149] Level 3 friends are those who have actually lent to other borrowers prior to the current listing.[150] Level 4 friends are those who have bid on the borrower's listing.[151] Level 5 friends, the strongest kind of friends, are those who have bid on the specific borrower's listing and have actually made money.[152]

Mingfeng Lin, Siva Viswanathan, and N. R. Prabhala found that higher, stronger levels of friendship serve as more credible signals,[153] and that having real lender-friends bid on a listing, increase the chances of a successful funding.[154] Thus, the stronger and more verifiable a borrower's social capital is, the more likely is his loan to be funded, viz.:

> The evidence is more consistent with a prism effect in which borrowers' attributes are reflected in the nature of the company they keep, i.e., serve as a source of soft information about borrower quality. In other words, the positive social capital communicated by friends who bid rather than the direct effect of the money loaned by friends appears to be the major reason why friendship[s] reduce defaults.[155]

In crowdfunding, friendship networks and social capital could also be used as signals of quality and trustworthiness. The support of family and friends provides the "first signal as to the credibility of the project to other backers and investors by being the first to back a project."[156] Having a large number of supporters and having these numbers visible to the public indicate that the project already has a core group of backers, who can be "easily mobilised as multiplicators and sales agents within their personal (social) networks."[157]

148. *Id.* at 11.
149. *Id.* at 3, 12.
150. *Id.* at 12.
151. *Id.*
152. *Id.*
153. *Id.* at 2.
154. *Id.* at 18.
155. *Id.* at 20.
156. Al-Tayar, *supra* note 121, at 57.
157. Hemer, *supra* note 5, at 28.

In addition, studies have confirmed that family and friends have lower information asymmetries, that is, they have more information about the quality of an entrepreneur, than traditional sources of capital.[158] Thus, an entrepreneur without a track record can raise capital more easily from family and friends who have known him for a long time.[159] The fact that family and friends have invested into a venture conveys to third parties that people who actually know the entrepreneur believe that he is trustworthy and that they can get a return on their investment.

Friendship networks can be seen, to some degree, in current crowdfunding platforms. In CrowdCube, users can view the names and profile of members who have invested in a start-up. If members who are highly regarded in the community have invested in a start-up, this can encourage other members to invest as well.

In Grow VC, users can see the followers of a start-up. However, followers do not necessarily invest in the start-up, nor do investors necessarily follow the start-up. Startups can, but are not required to, share their Grow VC profiles on their Facebook, Twitter, or LinkedIn profiles.[160] Also, Grow VC does not require them to share or link their Facebook, Twitter, or LinkedIn profiles to their Grow VC profiles.

It is suggested that relationships of entrepreneurs amongst themselves (e.g., which entrepreneurs are friends with which entrepreneurs), and entrepreneurs' relationships with other members of a crowdfunding platform (e.g., the number and identity of investors in a specific project) be disclosed to other users of the platform, to serve as signalling devices of an entrepreneur's trustworthiness.

C. DISCUSSION BOARDS

Complementing the signals from reputation and friendship networks could be web forums where users can post "problems with proposed ventures, to coax concessions from entrepreneurs prior to

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158. Ajay Agrawal, Christian Catalini, & Avi Goldfarb, Friends, Family, and the Flat World: The Geography of Crowdfunding 3, (Aug. 3, 2011) (unpublished manuscript), *available* at http://www.rotman.utoronto.ca/~agoldfarb/crowdfunding.pdf; citing DOUGLAS J. CUMMING & S. A. JOHAN, VENTURE CAPITAL AND PRIVATE EQUITY CONTRACTING: AN INTERNATIONAL PERSPECTIVE (2009).

159. *Id.*

160. Markus Lampinen, *Press Release: Social Investor Relationship Management tools*, GROW VC (Dec. 7, 2011, 2:00 PM), http://www.growvc.com/blog/2011/12/press-release-social-investor-relationship-management-tools/.

investing, and to monitor investments after they invest."[161] Comments on a particular entrepreneur, especially feedback on his performance in prior transactions, form part of his record, which can be accessed by any user.[162] Moreover, if entrepreneurs are able to command higher prices or receive more contributions because of positive comments, then the existence of discussion boards themselves provides a "positive incentive . . . for good performance."[163]

Such discussion boards have been found to be effective on peer-to-peer lending sites, where users have warned the community of fraudulent borrowers.[164] One project for an action video game on Kickstarter was exposed as fraudulent by members of the Kickstarter community only two days after the fundraising campaign began.[165] In crowdfunding, portals like CrowdCube and Grow VC have very active discussion boards, with some members even pointing out that the financial projections of some proposals were flawed.[166]

However, electronic bulletin boards are also susceptible to spammers or advertisers, and to misleading or inaccurate comments by users.[167] As with reputation systems, these problems can be managed. For instance, spammers, advertisers, or fraudulent users could be banned by the forum administrator or kicked out of the crowdfunding platform.

Another issue with discussion boards is that an early investor may have an incentive to exaggerate the positive attributes of a project to encourage other members to invest in that project. However, according to the rules of crowdfunding portals like Grow VC and CrowdCube, if the target amount for a pitch is not achieved (i.e., there are not enough pledges for a pitch), no money is taken from any investor. Therefore, an early investor who strongly wishes a pitch to succeed may post exaggerated positive comments about that pitch to entice others to invest, and thereby cause the target amount to be reached. However, if the project fails (i.e., if the project is not really viable, as he claimed), that early investor will lose his own investment. Therefore, an early investor would have little incentive to give a positive review unless he sincerely

161. Bradford, *supra* note 12, at 113.

162. Daniel Houser & John Wooders, *Reputation in Auctions: Theory and Evidence from eBay*, 15 J. ECON. AND MGT. STRATEGY 353, 354 (2006).

163. *Id.*

164. Bradford, *supra* note 12, at 113.

165. Agrawal, Catalini, & Goldfarb, *supra* note 158, at 28.

166. *See e.g.*, *Seriously Bad Practice and Bad Investments*, CROWDCUBE (Apr. 19, 2012, 5:06 PM), http://forum.CrowdCube.com/viewtopic.php?f=8&t=687. ("[Two] recently fully funded pitches . . . both had serious errors in their financial projections and both projected completely fabricated profits as a result.").

167. Bradford, *supra* note 12, at 135.

thought that the project would succeed.

IV. CONCLUSION

As predicted by Kevin Lawton and Dan Marom, authors of *The Crowdfunding Revolution: Social Networking Meets Venture Financing*, in the same way that social networking has changed how we allocate time, crowdfunding will change how we allocate capital.[168] The conventional ways of capital allocation by a few institutions is being challenged by "a new model of funding which has the potential to tap an almost unfathomable collective intelligence."[169] If thoughtfully managed, crowdfunding could become an alternative or a complementary source of financing to early-stage start-ups.[170]

However, in order for the crowdfunding market to work, it is vital that information asymmetry be reduced as much as possible to avoid the lemons problem. Signals conveyed via reputation systems and friendship networks, as well as comments posted on discussion boards, can reveal vital facts about entrepreneurs and their proposed projects, provide more security and peace of mind to potential funders, and allow investors to harness the wisdom of the crowds.[171] After all, the crowd's trust is the foundation on which crowdfunding platforms are built.[172] Without this confidence, the crowd will simply stay away and invest their money elsewhere.

RECOMMENDATIONS

This study is intended to raise issues that may arise from information asymmetry in crowdfunding, and perhaps inspire others to propose more solutions. Further studies may establish whether the crowdfunding provisions and implementing rules in the JOBS Act are sufficient to deal with the information asymmetry problem in the United States crowdfunding market. Studies of the legal systems of other countries could also be conducted to determine if existing securities

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168. LAWTON & MAROM, *supra* note 3, at 1.
169. *Id.* at 2.
170. Hemer, *supra* note 5, at 3.
171. Bradford, *supra* note 12, at 134.
172. Susanna Kim Ripken, *The Dangers and Drawbacks of the Disclosure Antidote: Toward a More Substantive Approach to Securities Regulation*, 58 BAYLOR L. REV. 139, 194 (2006).

laws are sufficient to address the problems of information asymmetry. In the future, if crowdfunding becomes more widespread, empirical studies could be done on whether the quality of crowdfunded projects has increased, remained the same, or deteriorated over time. These studies might also consider the effect of existing reputation systems and friendship networks on the ability of a start-up to raise funds over the Internet.