

University: University of Twente

7500 AE Enschede

The Netherlands

Student: Sebastian Dehling

Student Number: s1234749 (U Twente),

Study: Business Administration (MSc.)

0334247 (TU Berlin)

Faculty: School of Management and  
Governance

Track: Innovation and Entrepreneurship

Master Thesis

## **Crowdfunding – A Multifaceted Phenomenon**

U Twente 1st Supervisor:

Dr. Michel Ehrenhard

m.l.ehrenhard@utwente.nl

TU Berlin Supervisor:

Dipl. Ing. Sebastian Pepper

sebastian.pepper@tu-berlin.de

U Twente 2nd supervisor:

Dr. Matthias de Visser

m.devisser@utwente.nl

Date: 26.11.2013

Email: Sebastian.dehling@gmail.com; Tel: +491708641961

## Table of Content

1. Introduction .....	4
2. Crowdfunding - A Multifaceted Phenomenon .....	7
2.1. Crowdfunding - In a Nutshell .....	7
2.2. Crowdfunding - A Literature Review .....	9
3. Crowdfunding – Reward-based and Equity-based Crowdfunding .....	16
3.1. Introduction to the Mechanisms .....	16
3.2. Pre-Ordering .....	18
3.3. Profit-Sharing .....	20
3.4. Comparison of the Mechanisms .....	21
3.5. Crowdfunding – Practical Examples .....	23
4. Discussion .....	28
5. Conclusion .....	33
6. References .....	34
7. Appendix .....	41

## **Abstract**

**Purpose:** This paper aims to shed light on the complexity of the crowdfunding phenomenon and its two mechanisms reward-based and equity-based crowdfunding. It addresses scholars and practitioners interested in the phenomenon from different angles.

**Design/methodology/approach:** A phenomenon-based approach, which is appropriate when investigating rather unexplored phenomena is applied. The author first reviews the emergent literature on crowdfunding to identify and report on its diverse nature. Then reward-based and equity-based crowdfunding are analyzed primarily under the economic lense of price discrimination. Finally a first discussion on the composition of the phenomena and its implications on selecting a mechanisms including recent cases is given.

**Originality/value:** The paper will add value to the crowdfunding research branch by systematizing extant knowledge of crowdfunding, which appears to be fragmented and still in a pre-theoretical stage. The analysis of the mechanism and use of recent cases will reveal the combination of different concepts in the economic and socio-psychological context of crowdfunding. The concluding discussion will synthesize the composition of the phenomena and show the limits of the model.

**Practical implications:** The outcomes of the paper might be useful for perspective entrepreneurs, who are considering designing a crowdfunding campaign most efficiently to finance their ventures or sell their product. Further scholars can design future research strategies given the different angles of the phenomenon. Additionally platform managers and financial operators intending to enter this new area may benefits as well by using the outcomes for providing the right tools for entrepreneurs.

## **1. Introduction**

Today's connectedness of people got entrepreneurs and consumers on a level where they seek collaboration more than before. They co-create products and businesses and are dependent on each other for innovation, product development etc. Through globalization individuals take on challenges with global reach and locals can participate in solving issues on the other side of the planet. For these solutions entrepreneurs form new ventures that need to be financed (Rifkin, 2010; Chui et al., 2012; Serres, 2013, Girouard, 2013).

They look at two categories of financing: equity and debt. Many new ventures (startups) however cannot access either equity nor debt finance, since they do not have a stable cash flow to ensure regular interest payments or securities but are accompanied by information asymmetries (Berger and Udell, 1998; Cosh et al., 2009). The global financial crisis additionally increases the situation by risk-averse behavior of traditional venture capital firms and kick starting opportunities for entrepreneurship (McCahery and Vermeulen, 2010). Crowdfunding is a young phenomenon defined as a method that helps entrepreneurs in generating capital to fund a project or venture from either debt or equity. According to Ordanini (2011) the concept of crowdfunding is a collective effort of various individuals, who come together to pool the funds, to support new potential projects, organizations and businesses. In the meantime it has become an alternative source of financing for startups that have this particular limited access to traditional lines of financing (Belleflamme et al., 2010; Schwienbacher and Larralde, 2010; Mollick, 2012).

Today crowdfunding activities are majorly carried out online in form of equity- and lending-based projects for financial returns or as reward- and donation-based for cause-based projects (Massolution, 2012). In fact, individuals, who network and pool funds, will come together through Internet only. Although online platforms of crowdfunding have come up very recently, they have started to revolutionize the traditional practices of gathering funds to finance an organization (Howe, 2008). Instead raising capital from small group of wealthy individuals it gathers funds from a pool of individuals across the world. Popular organizations like Startnext (startnext.de, Germany) and Kickstarter (Kickstarter.com, USA) are those relational mediators that act as facilitators between supply and demand (Hardy, 2013) by bringing entrepreneurs and customers or investors together. This new arena of funding obviously brings a lot of unknowns and complexity for

the participating players and therefore calls for clarification to execute it most efficient and make it worth the effort.

The entrepreneur who decides to raise capital via crowdfunding has several options how to conduct such a project. To ensure the most efficient outcome for entrepreneurial ventures she needs to know how to select the right model of crowdfunding for her particular project. In this paper the two dominant commercial crowdfunding mechanisms reward-based and equity-based crowdfunding are subject of the analysis. The reward-based mechanism invites individuals to pre-order/purchase the product before launching the project. Whereas the equity-based mechanism is built on profit-sharing where investors are invited to invest funds in exchange of shares of the profit. A prerequisite for the final exchange of money and either reward or equity is the successful funding of such a project. A certain limit of capital which is initially required is identified at which those models are either efficient below or above this limit. If not successful the collected money is returned to the backer.

According to Belleflamme et al. (2012) crowdfunding projects share major characteristics: pre-purchase a product, willingness to pay and community benefits. Traditional funding doesn't provide advantages of additional utility like crowdfunders do experience and therefore might be a better option for sale or fund (Hardy, 2013). The shared characteristics can however provide the biggest differences between reward-based and equity crowdfunding. One major implication arises due to the differences in community benefits. At reward-based crowdfunding community benefits are tied to consumption but in equity crowdfunding those benefits are solely derived from the act of investing itself. The entrepreneur can exploit those facts to extract more value from each individual by behavior-based price discrimination among others (Fudenberg et al., 2005). However this opportunity inhabits other risks as soon as the entrepreneur needs to raise more money and therefore needs more crowdfunders (Belleflamme et al., 2013). The implications derived in this paper are relevant to existing research as well as the practical environment of business management or community management. Therefore all aspects of crowdfunding and its context need to be understood.

The primary aim of this paper is to shed light on the complexity of the phenomenon in general and specifically on the two mentioned mechanisms. In the setup of a master thesis

the author conducts a phenomenon-based research approach. It is intended to reach appropriate understanding of the complexity and the practical implications of the phenomenon. Further the development of theory and research designs can proceed to let practitioners and scholars apply and research the crowdfunding phenomenon more effectively (von Krogh et al., 2012). According to Feller et al. (2013) for the distributed and rather informal nature of crowdfunding, a multi-focus research is what is needed to uncover and recognize the interconnected nature of the legal social, economic and technological concepts enabling the crowdfunding phenomenon. Therefore in chapter two the author first reviews the emergent literature on the phenomenon to single out significant parts that by now have attracted scholarly and public interest. In chapter three the two dominant crowdfunding mechanisms are analyzed primarily under the lens of the economic concept of price discrimination. Further the author provides recent practical examples to explain the mechanisms practical implications. This provides a first decision base for entrepreneurs to select the best mechanism for an individual crowdfunding project. Finally, the author offers a discussion on the multi-concept nature of the crowdfunding phenomenon and its impact on the two dominant mechanisms integrating recent cases and further data retrieved from the Internet.

Research Question:

**I. What are the underlying concepts of crowdfunding and how do these concepts impact the selection of either equity- or reward-based crowdfunding?**

This paper tries to answer this question and discuss the phenomenon for further research and practical application. Scholars, practitioners and policy makers will benefit each from mapping out the concepts, relationships, and impacts on practices of crowdfunding. They can define more appropriate fields for further research, easier choose the most suitable crowdfunding mechanism and for introduce benevolent policies. This paper is structured into three major chapters apart from introduction and conclusion. The following chapter provides a theoretical analysis and review on the crowdfunding phenomenon. In the third chapter the two mechanisms reward-based and equity crowdfunding are analyzed, compared including examples from practice. Finally, the fifth chapter is dedicated to critically discuss the identified and analyzed elements of crowdfunding.

## **2. Crowdfunding - A Multifaceted Phenomenon**

The author's objective in chapter two is to provide a general definition of crowdfunding and locate the phenomenon on the academic map by reviewing the emergent literature.

### **2.1. Crowdfunding - In a Nutshell**

Crowdfunding derived from the concept of crowdsourcing that was introduced by Jeff Howe and Mark Robinson in 2006 (Howe, 2008). It also draws inspirations from micro finance like the initiatives of Grameen Bank, described by Morduch (1999), but represents its own unique category of fundraising. Nearly nine hundred crowdfunding devoted Internet platforms are officially registered on Crowdsourcing.org currently. Precisely crowdsourcing is defined as a way to obtain ideas, feedback and solutions in order to develop corporate activities by a distributed network of individuals, the crowd (Howe, 2008; Kleemann et al., 2008; Gerber et al. 2012). Later in the very first published overview of crowdfunding, Lambert and Schwienbacher (2010) confirm an evolution of crowdfunding as a subset of crowdsourcing because it constitutes the same element but raises funds instead of ideas, etc. by tapping a general public. These authors define crowdfunding as “an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes”.<sup>1</sup> In other words the idea of crowdfunding is to obtain money from a large audience.

Funding by a large audience differs from traditional funding sources like angel or venture capital investment. It naturally facilitates many small investments rather than a few big ones (Belleflamme et al., 2012). Furthermore a large audience represents a wide variety of goals (Mollick, 2012). As a result the relationship between entrepreneur and crowdfunder differs considerably in context and nature of the project. However Schwienbacher and Larralde (2010) as well as Mollick (2012) concluded it to be a viable source for entrepreneurial seed capital. This is needed because entrepreneurs face the problem to attract outside capital at this stage, when lacking cash flow and dealing with information asymmetry with investors (Cosh et al., 2009).

---

<sup>1</sup> Cf: Lambert, T., Schwienbacher, A., 2010, An empirical analysis of crowdfunding, p.6.

<sup>2</sup> See: Results retrieved from the mentioned databases. Keyword search “crowdfunding” on August 19<sup>th</sup>, 2013.

<sup>3</sup> Cf: Gerber, E., Hui, J., Kuo, P., 2012, Crowdfunding: Why People are Motivated to Participate, p.2.

In some countries the open call via the Internet has legal limitations when it comes to number of single investors at the equity purchase form of crowdfunding (Lambert and Schwienbacher, 2010; Griffin, 2012). It remains to be seen to what extent crowdfunding will substitute traditional sources of funding (Belleflamme et al., 2012). On the other hand the Internet plays a crucial role for entrepreneurs to be able to easily reach networks of investors/consumers (Brabham, 2008; Kleemann et al. 2008) to fund their small ventures, projects that are otherwise unlikely to get funded (Gerber et al., 2012). Lambert and Schwienbacher (2010) also highlight the importance of the Internet as a channel for efficient communication and networking. Despite the Internet being an essential ingredient crowdfunding practices differ from open-source practices (Brabham, 2008; Fershtman and Gandal, 2011). Crowdfunding favors the entrepreneur to have the right to exploit the resource built by the project. Open-source projects however, assign the resource to the entire community that can then exploit it on an individual basis (Belleflamme et al., 2012). It becomes even clearer in the case of crowdfunding since capital cannot be shared because it is not a public good in the economic sense that assumes non-rivalry and non-excludability (Samuelson, 1954) unlike software code. Under these conditions, a public good is a good that can be used by many consumers at the same time, without duplicating costs (Schwienbacher & Larralde, 2010)

Generally crowdfunding activities take place on intermediary online platforms where entrepreneurs and crowdfunders exchange a particular value for money. These platforms use social networks in particular through the Internet (Twitter, Facebook, LinkedIn) to orchestrate their projects. Many of these platforms are specialized to certain kinds of projects and inhere two eminent roles of users (Hardy, 2013). Entrepreneurs can create a profile on such a crowdfunding platform to introduce the team, project goal, how the capital will be used and a project plan (Gerber et al., 2012). Projects can range from a new online TV channel or documentary movie, to constructing an aquaponic urban farm or seeking a cost efficient diagnostic tool for a disease. For example, the platform SellaBand focuses exclusively on music-album funding, but the unifying goal is to give crowdfunders access to a new product or good ready to market.



The crowdfunder who contributes in terms of money but also feedback or further participation (E. g. voting rights) holds another main role. Most crowdfunding platforms apply the pay-what-you-want model (Hardy, 2013), but allow the entrepreneur to set a minimum contribution and have customized rewarding schemes. There are some projects that see the crowdfunder rather as a patron who expects no compensation except the feeling of doing good. The majority of projects let crowdfunders become early customers, by having access to the funded projects at an earlier date, better price, or with some other special benefit (Mollick, 2012). Crowdfunders also base their decision to participate on the underlying appeal of the project (Agrawal et al., 2010) or on the predicted success of early-attracted investments (Burtch et al., 2011). One can say that crowdfunders respond to signals about the quality of the project (Mollick, 2012).

Crowdfunding takes the form of equity purchase, loan, donation or pre-ordering of the product to be produced. The compensation is usually just given if the project reached a former defined threshold. In this paper the author focuses on the two most dominating forms of crowdfunding nowadays according to Belleflamme et al. (2013). However other inquiries show a different view where donation-based crowdfunding is ahead of equity-based crowdfunding. Whereas the latter shows a growth rate of more than 100% and potentially high financial impact (Massolution, 2012). The analysis the two mechanisms will provide profound insights to elaborate further on pre-ordering of products and profit-sharing. The following section provides literature review to identify the nature and underlying concepts of crowdfunding.

## **2.2. Crowdfunding - A Literature Review**

Given the fact that the term crowdfunding was coined less than seven years ago it is a relatively new phenomenon. Academic literature on crowdfunding in particular is still in its infancy although it gained more attention over the last two years. It was also triggered by the success of popular crowdfunding platforms and a tendency to limited access of traditional sources of funding for entrepreneurs. A literature search on Google Scholar showed a steep increase of publications especially in the last 2 years (Fig. 2-1, Appendix). The total number of publications is big but the Google Scholar search includes many

sources next to the big publishers who provide peer reviewed articles. Those Databases like EBSCO (32), Scopus (30) Thomson Reuters Web of Science (19) showed a different range compared to Google Scholar but a similar rising curve.<sup>2</sup>

The differences in results of total publications and distinguished academic work show a significant need for action in the academic area. The current trend combined with the recently signed the JOB Act by Barack Obama (Landler, 2012) crowdfunding can be assumed to become even more popular and diverse. Gerber et al. (2012) goes even further saying, “Crowdfunding has the potential to fundamentally impact how we function economically and socially by facilitating the realization of new and innovative products and services”.<sup>3</sup> Therefore it will be useful to integrate crowdfunding and its two dominating models into the existing literature to define its role in theory and discuss its resulting practical implications. The author draws mostly concepts and theories from research in parts of economics (behavioral economics, microeconomics, entrepreneurial finance) and social-psychology (motivation, drivers, behavior) to describe, analyze and discuss the context of crowdfunding.

Entrepreneurial finance draws its principles from entrepreneurship and finance it is “...the application and adaptation of financial tools, techniques, and principles to the planning, funding, operations, and valuation of an entrepreneurial venture”<sup>4</sup>, and crowdfunding is one tool in the early stage of an entrepreneurial venture. This stage refers to ventures with little operating history that are in their development- startup- or survival life cycle stages (Leach, Melicher, 2009). From a financial perspective bootstrapping (Bhidé, 1992; Winborg and Landstrom, 2001; Ebben and Johnson, 2006) is a related branch of research. Entrepreneurs apply bootstrapping techniques to mitigate their financial constraints by reducing cash flow needed and use entrepreneur’s personal assets (Leach, Melicher, 2009). Both tools use alternative ways of financing apart from traditional finance (e.g., bank loan, angel capital and venture capital).

---

<sup>2</sup> See: Results retrieved from the mentioned databases. Keyword search “crowdfunding” on August 19<sup>th</sup>, 2013.

<sup>3</sup> Cf: Gerber, E., Hui, J., Kuo, P., 2012, Crowdfunding: Why People are Motivated to Participate, p.2.

<sup>4</sup> Cf: Leach, J. C., Melicher, R.W., 2009, Entrepreneurial Finance, 4th Edition, South Western, p.19

Cosh et al. (2009) analyzed a broad range of alternative methods for startup financing but in this context suggestions cited evidence that social networking methods (crowdfunding platforms among others) could provide a solution for seed capital gaps resulting from market failure (Shane and Cable 2002; Shane and Stuart 2002; Zhang and Wong 2008). Rao and Giorgi (2006) argued that, “collective vehicles through which people mobilize supporters for collective action are also essential for social movements”.<sup>5</sup> Crowdfunding platforms are the result of a social movement that arose in reaction to the mentioned funding gap and the emergence of Web 2.0 technologies that are enabling new forms of social networking (Adams and Ramos 2010). A third pillar involved in the rise of crowdfunding is the people. People’s motivation differs from those of traditional investors. Tom Serres (Rally.org) spoke about a cultural shift and the “cause economy”<sup>6</sup>, continued by Dave Girouard (former Google Enterprises president) and Jessica Jackley (founder of micro-finance platform Kiva) talking about that people share the notion to participate and be involved in the creation of something new. Concluding they said, “it’s more about cause than cash”<sup>7</sup>, which is one of the disruptive measures in crowdfunding. Also scholars confirm that intrinsic motivation and immaterial rewards trumps cash as dominant motivator to participate (Hemer, 2011, Harms, 2007). In combination the first two causes it brings together both parties and builds the overall cause for the rise of crowdfunding.

The phenomenon as such contains a range of general (dis-) incentives why entrepreneurs and crowdfunders engage, lately identified by Agrawal et al. (2013). Entrepreneurs see the opportunity to lower their cost of capital and gain additional information but simultaneously have to disclose their project. If the project is sensible to disclosure and therefore the cost of capital may include a volatile risk factor entrepreneurs rather turn down an attempt to crowdfund their project. The same is true when the benefits of lower cost are outdone by the traditional benefits of an investor (E.g. high knowledge of the industry). Crowdfunders on the other hand are drawn to crowdfunding to access investment

---

<sup>5</sup> Cf: Rao, H., Giorgi, S., 2006, Code Breaking: How Entrepreneurs Exploit Cultural Logics to Generate Institutional Change, p. 284.

<sup>6</sup> Cf: Tom Serres in Colao, J. J., 2013. The Inside Story of the Largest, Crowdfunding Series A Round of All Time. <http://www.forbes.com/sites/jjcolao/2013/02/13/8m-in-two-weeks-the-inside-story-of-the-largest-crowdfunded-series-a-round-of-all-time/>

<sup>7</sup> Cf: David Girouard, Jessica Jackley, 2013, The Next Big Thing in Crowdfunding? Kickstarting *People*. <http://www.wired.com/opinion/2013/04/the-next-big-thing-in-crowdfunding-kickstarting-people/>

opportunities and new products early on. They are keen to support an idea, product or service and join an exclusive community. The body of the crowdfunding platform gives them likewise a basic security by formalization of contracts which could be off in a family and friends informal setting, although there is still the risk of project failure, creator incompetence or at worst fraud.

As said and given by the local nature of social networks (Hampton and Wellman 2002) entrepreneurs usually start with family and friends to jumpstart their projects apart from own resources in the early stages (Agrawal et al., 2011, Cumming and Johan 2009). Nevertheless Agrawal et al. (2011) showed that the distance does not play a significant role if the entrepreneur uses online crowdfunding platforms to raise capital from distant investors. Despite varying distances, capital disproportionately flows to the same regions as traditional sources of finance (Agrawal, Catalini, and Goldfarb, 2013). They conclude that crowdfunding platforms eliminate most distance-related economic frictions normally associated with financing early stage projects. Mollick (2013) shows that geography is rather associated with the type of the project and its achievability. He conducted a study to measure different determinants of success and the risk of the entrepreneur not delivering the offer made after collecting the funds. He found that project's quality and personal networks strongly correlate with a project's probability of success. Further he found that entrepreneurs mostly deliver their product/service but rather later than promised like the popular example of Pebble (Gannes, 2013). The risk increases linked to the funds accumulated. If projects get unexpectedly overfunded the entrepreneur has to adjust plans for roll-out etc. In general crowdfunders are subject to an unusually high degree of risk caused by information asymmetries (Fig. 2-2, appendix). Equity crowdfunding has a significant higher degree of risk than reward-based crowdfunding because projects raise more capital on average (Crowdfunding Industry Report, 2012) and got the additional problem of the entrepreneur's ability to build a company. Here the most critical differences between equity and non-equity crowdfunding will also emerge (Agrawal, Catalini and Goldfarb, 2013).

The underlying theory of signaling is concerned with reducing these asymmetries (Spence, 1973 and Spence, 2002) by describing the behavior of two parties in doing so (Connelly et al., 2011). Crowdfunders have very little chances to intervene and protect their small

investments. Therefore trust building is an essential ingredient for any successful crowdfunding initiative (Lambert and Schwienbacher, 2010). According to Agrawal et al. (2013) the concept of reputation signaling in reward-based crowdfunding could be starting point and therefore a powerful antidote to the overall information asymmetry. Evidence was found that signaling is as well an important influence on investors. Further signals are rules and regulation, crowd due diligence, and provision point mechanism are also deployed in a reward-based context but may even work in the equity setting.

In equity crowdfunding presenting financial projections and roadmaps can signal the likelihood of success to potential investors. A complementary and highly qualified management team can further enhance the chance of attracting investors and increase the speed of capital-raising (Ahlers and Cumming, 2012). With increasing accumulated capital a sense of quality is signaled that may lead to herding behavior and as a result increase the probability of overall project success (Agrawal, Catalini, and Goldfarb, 2011; Zhang and Liu, 2012; Burtch, Ghose, and Wattal, 2011; Freedman and Jin, 2011). Whether in reward- or equity-based crowdfunding entrepreneurs and crowdfunders build strategic ties by signaling and consequently engaging as a mean to raise capital or build innovative content (see, e.g., Hallen and Eisenhardt, 2012, Agrawal, Catalini, and Goldfarb, 2013).

From economic environment and signaling theory the corollary is the theory of donation that is subject to the motivations for why people give. Wojciechowski (2009) offers insights that social networks/crowdfunding can become a valid model for collecting donations and Belleflamme et al. (2013) continues explaining under which conditions. When donators feel they might become consumers and extra utilities are high, they may decide to donate for the sake of the overall project success. Ghatak and Mueller (2009) contrast these findings claiming access to donation needs not-for-profit organizations. This is consistent with Lambert and Schwienbacher (2010) finding not-for-profit projects are more likely to achieve their target level of capital in crowdfunding. Finally, Read (2013) explains the theory behind the individual project factors that make non-profits more successful than their counterparts. Among others the focus on quality rather than the desire for profit (Glaeser and Shleifer, 2001) or the extra motivations (altruism + warm glow effect) associated with donating (Konow, 2006) are factors of success. These extra motivations might be even more influenced by rewards that let crowdfunders have an

additional value but can be issued at zero cost (Varian, 2013) like a gold supporter badge or access to the executive forum.

At SellaBand on the other hand, Ward & Ramachandran (2010) even found a possible information overload and a need for aggregation. Kappuswamy & Bayus (2013) measure this supposedly overload and how it relates to contributions. They find that if it seems there is enough going on (updates, fans, blog post, investments) and the target will be reached anyway it might slow down in the middle of the process because of a bystander effect. The contribution is then again strong towards the end of the project. This “bathtub” shaped distribution of crowdfunders is well known in reward-based projects (de Witt 2012; Mod 2010; Steinberg 2012). With equity crowdfunding an increasing pattern in contributions is found and rather associated with herding behavior (e.g., Zhang and Liu 2012) whereas with donation-based crowdfunding the contributions get less towards the end (Burtch, et al. 2013).

According to self-determination theory Gerber et al. (2012) categorizes the motivations of entrepreneurs and crowdfunders under the drivers of autonomy, competence and relatedness. They uncovered controlling and learning as motivations for entrepreneurs whereas collecting rewards, supporting causes and people motivates crowdfunders. Previous findings on entrepreneur’s motivation to participate in crowdfunding (Schwienbacher & Larralde, 2010, Lambert & Schwienbacher 2010) were confirmed and also illustrated in figure 2-3 (see appendix). Platforms that manage to give the entrepreneurs opportunities to direct crowdfunders with particular motivations will attract both parties which answers the challenge of a two sided market (Eisenmann et al., 2006). Platforms provide information about the customer, provide touch points that entrepreneurs can use to design their campaign and give them the ability to commit to their pricing plans (Armstrong, 2006). All these aspects are pricing related and build an inviting framework for entrepreneurs to use price discrimination, meaning that the same product is offered at different prices.

Before coming to behavioral economics Kappel (2009) started to distinguish between ex post facto, when a product is offered and ex ante crowdfunding, when financial support is given beforehand to achieve a certain goal for example Obama’s election campaign 2008. Dana (2001) breaks ground for this distinction and shows that by means of price

discrimination. When there are two states of demands the entrepreneurs can achieve some of the same benefits by adjusting the pricing strategy in response to demand. Building on this Belleflamme et al. (2012) concludes a product is available at two stages (ex ante, ex post facto) but differs in price. They show that the entrepreneur might have to limit her profit ex ante in order to raise enough funds. Discounting the price ex ante could help to let previous non-consumers become consumers and therefore confirms price discrimination as a strategic tool in crowdfunding. Nocke et al. (2011) provided a similar theory where advance-purchase discounts serve as a pure price discrimination tool. His model is based on asymmetric information, that let's consumers with a lower uncertainty awareness purchase the product before its' true value is public.

Matthew Benson, a partner at Ernst&Young Germany, calls price discrimination, “one of the most brilliant aspects of crowdfunding”<sup>8</sup>, because the entrepreneur can make a more specialized offer by introducing different tiers of participation. Crowdfunders might value products or equity offers differently but with installing different tiers they can contribute to their own level of willingness to pay and personal budget. The personal budget of a potential crowdfunder and the amount of money to dispose without consequences for future consumption is called the income effect and got quite attention in economic literature. This effect might strongly influence the willingness to pay along with the incentives the entrepreneur offer to the crowdfunder. In crowdfunding willingness to pay is modeled by value increasing along with the offered price not by demand for quantity (Hardy, 2013). Hardy (2013) built a model including each crowdfunder's income effect when determining his contribution to the project. Craig Mod (2010) explains that people with low budgets but keen interest to see the project happen may contribute highly or modestly interested but wealthy people may join the low tier instead of not participating at all. In this particular case people who got already the first version of the book were able to participate on a budget level to stay in they loop. Concluding, different tiers increase the project's funding anyway but enable the equally important factor in building a community of supporters through the fundraising process (Mod, 2010; Fig. 2-4, appendix).

Crowdfunding platforms are in many ways a compilation of mechanisms previously

---

<sup>8</sup> CF: Benson, M., 2013. Kickstarter Capitalism. <http://matthewbenson.wordpress.com/2013/01/12/kickstarter-capitalism/#more-2642>

described in the economic literature and models of sale. Hardy (2013) provides insight for price discrimination within the pay-what-you-want model of platforms (e.g. Kickstarter) by measuring the income effect of crowdfunders and the entrepreneurs's strategy answered in a project's different rewards for backers. Crowdfunders pick a reward according to their individual situation and therefore finally pay what they want. Pigou (1932) distinguished three degrees of price discrimination. First a monopoly seller is able to charge a maximum price to each buyer, at which price this buyer will be willing to buy the product. Second a buyer gains discounts when he acquires a larger quantity of a good. Third, a seller charges different price to different buyers addressing their individual level of willingness to pay and wealth. At most platforms entrepreneurs offer the second and partly the third degree of price discrimination. The first degree of price discrimination might occur when a crowdfunder increases his contribution as long as he perceives that the benefits rise quicker than the costs (Png, 2002). In the next chapter reward-based and equity crowdfunding are analyzed under the lens of price discrimination.

### **3. Crowdfunding – Reward-based and Equity-based Crowdfunding**

#### **3.1. Introduction to the Mechanisms**

In this chapter, the author focuses on describing and analyzing the two crowdfunding mechanisms reward-based (pre-ordering) - and equity (profit-sharing) crowdfunding. This analysis is mainly under the economic lense of price discrimination applied by Belleflamme, Lambert and Schwienbacher (2012) in "Tapping the right Crowd". Second the author gives a selection of different up to date examples to better understand the phenomenon and break ground for discussion how entrepreneurs can use different concepts and strategies to raise funds more efficiently.

**Situation:** An entrepreneur is planning to launch a new product, service or idea. She is planning to raise the capital needed via crowdfunding.

Based on the differences between the relative performance and community benefits that the entrepreneur receives the analysis shows that entrepreneurs go ahead with pre-ordering



(reward-based) as the best form of crowdfunding if they want to gather a small amount of initial capital. On the other hand, entrepreneurs tend to a profit-sharing (equity) model if they want to gather larger amounts of capital as initial investment (Belleflamme et al., 2012). Further the huge difference between community-based benefits in the two forms of crowdfunding leads to an additional utility for the crowdfunder. Thus, to have the best chances for project success and a maximum of efficiency, a clear comparison between the community benefits is prerequisite of selecting a suitable model.

When an entrepreneur selects pre-ordering the community benefits originate directly from the experience of consumption. Belleflamme et al. (2012) assumes that by those benefits consumers perceive a higher quality of the project and related to their taste increase their overall utility. So if a user likes the project anyway she will even more enjoy the experience of the benefits included. If the entrepreneur goes for profit-sharing the main benefits are of financial origin instead of consumption. Crowdfunders enjoy the feeling of belonging to an exclusive community that made the project happen. Regardless if one becomes a consumer or not, the increase in additional utility for the investor is anyway given just by the act of investing.

These examples say that community benefits of crowdfunders are heterogeneous with respect to their individual taste parameter under pre-ordering, but homogeneous under profit-sharing when individuals are not necessarily a consumer. The implication would be that entrepreneurs could on average easier satisfy crowdfunders expectations on additional utility with profit-sharing than with pre-ordering. So it is easier to go for profit-sharing if rather a big amount of capital, which requires more crowdfunders on average, is needed. Belleflamme et al. (2012) conclude that when the entrepreneur tries to gather rather small amounts she tends to be more efficient choosing pre-ordering over profit sharing. It has the possibility to generate higher net profits due to optimal price discrimination. Here namely between the crowdfunding campaign (ex ante) and the retail market (ex post facto). Though the entrepreneur can accumulate more capital through profit-sharing but the net profit would be lower because investors will take their share of profits in form of equity or revenue. In the following the two selected models of crowdfunding, pre-ordering and

profit-sharing are analyzed showing the their ins and outs under the economic lense of price discrimination.

### **3.2. Pre-Ordering**

In this section the initial position is that an entrepreneur offers a product/service via pre-ordering to cover the required capital to start production and deliver it to crowdfunders. Here the two periods according to Kappel (2008) come into play. As said before, people have different drivers, motivations and abilities to participate. To effectively trigger potential crowdfunders (willing to pre-order/back the campaign) the entrepreneurs can make use of different tools to increase their initial affection to the project by offering enhanced experiences. Belleflamme et al. (2012) as well conclude that crowdfunding's special feature is price discrimination by the circumstance of individual crowdfunder behavior.

The goal is to raise the set required capital and so the entrepreneur sets a price for the potential pre-ordering crowdfunder. To raise enough capital it needs a certain amount of these potential crowdfunders paying that price during the campaign. The most platforms say that either the entrepreneur raises the set amount of capital or gets nothing. Then the money goes back mainly to prevent misuse (e.g. Agrawal et al., 2013). If the project is successful the entrepreneur enters the retail period. All consumers who perhaps even observed the campaign but didn't pre-order can order just again under different conditions. First they know that the project is happening due to the successful campaign and second, also the entrepreneur knows now that her project is happening and can set an adopted retail price. Although the quality of the product stays the same some entrepreneurs set a lower retail price to attract former indifferent potential consumers. Otherwise entrepreneurs decide to set a higher retail price if the campaign was a huge success and the product/service is expected to be still in high demand. This way they reward crowdfunders for their commitment to back the project and allow themselves a higher profit margin.

During the campaign indifferent consumers between pre-ordering and not, are identified by their willingness to pay and their assumption of the potential retail price. For setting the

optimal price and consequently optimal profits during the campaign the entrepreneur is constraint by the necessity to reach the set amount of capital and therefore attract sufficient crowdfunders by the price and additional utility. Compared to a unified price for the campaign and retail market the overall profits under a special pre-ordering price may increase and even lead to a bigger market in retail by turning non-customers into customers via price discrimination.

A further interesting case to compare is the situation where the entrepreneur would be in the position to know and set the price for retail already during the campaign. It could be beneficial for the entrepreneur's campaign if the retail price is close to equal or higher than in the campaign. Indifferent consumers wouldn't miss the community benefits. Otherwise if entrepreneur would be pre-announced the retail price to be much lower than indifferent people would wait and just committed consumers might decide for the extra community benefits at a higher price.

It can also happen that the entrepreneur realizes that her optimal price will not lead to an overall project success and as a result decides to set the price not equal to optimal profits but to the success of the campaign. However this will require even more backers indicating that there is a natural threshold of required capital in a pre-ordering campaign. Likewise the number of crowdfunders is linear to the amount of capital thereby supporting the threshold theory. Later in this paper the author will introduce several cases to support or weaken arguments made here. Also with an increasing amount of required capital the profits under pre-ordering go below profits of traditional financing at a unified price. Pre-ordering is beneficial as long as the entrepreneur can increase profits by behavior-based price discrimination when offering consumer benefits and is not constraint by a large amount of capital and its distorting implications. Looking at the profits under these conditions one can say that profits decrease with increasing capital to fund or a decreasing level of community benefits. Entrepreneurs can extract fewer profits from the consumer surplus and the capital constraint becomes more serious. In the next chapter the profit sharing model is described and analyzed. Practical cases follow later in this paper.

### **3.3. Profit-Sharing**

The second model of crowdfunding an entrepreneur can select here is profit-sharing. In this model crowdfunders give money in exchange for a share of the profits, mostly equity. In this mechanism crowdfunders are rather investors and their decision to participate is not coercively attached to consumption. An investor might invest money because she sees a good chance for high returns and believes in the business model while she would not buy the product itself (E.g. an innovative beard trimmer). The other way around an investor would like to consume the product but personally doesn't see it as a profitable investment. Still there are community benefits to gain some extra utility, but in the profit-sharing model those are detached from consumption in the first place. At this point they purely enjoy benefits from their investment decision (E.g. feel pivotal to the project) and thereby increase their extra utility.

In the profit-sharing model it is clear from the beginning that the consumers market will just be open after a successful crowdfunding campaign. Since the community benefits are detached from consumption here the entrepreneur faces a uniform-pricing problem and cannot maximize it by price discrimination to extract more consumer surplus. Potential consumers just buy it then afterwards if their mix of willingness and ability to pay covers the price set for the product or service.

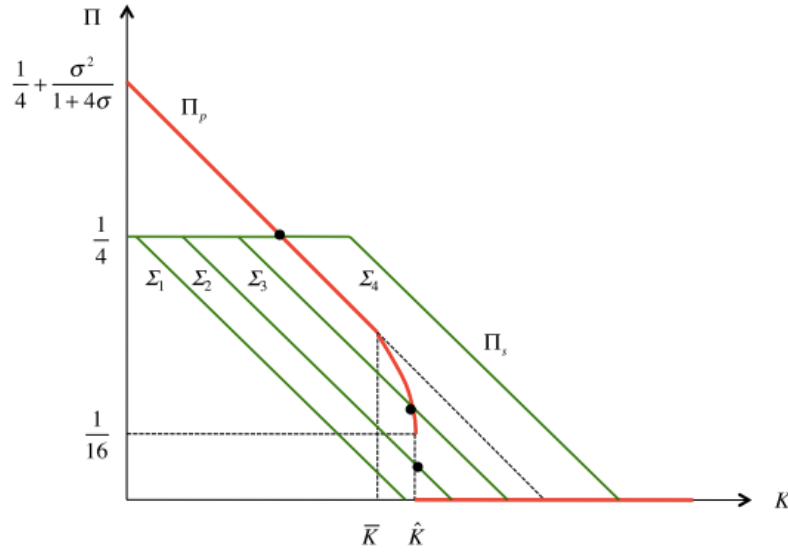
During the crowdfunding campaign the context is different and community benefits can be gained through investing. To identify the potential investor among the consumers backing the crowdfunding campaign with her investment several factors need to be considered. The heterogeneous utility from consuming the product later is still a factor during the campaign because an individual can be an investor and consumer at the same time but investing itself shows a homogeneous benefit among investors. Next to these benefits the equation of profits to be made and capital to be invested must be positive adding potential community benefits. It includes the limited shares issued by the entrepreneur, the number of backers and the cost per backer related to the capital required in total. If these factors play out positive and are supported by the individual community benefits, she becomes an investor. It constitutes the commitment situation of the consumer when she sees herself pivotal and

needs to invest making the project happen before finally be a consumer (Belleflamme, et al., 2012)

As an entrepreneur exactly this situation is willingly induced that every potential investor feels pivotal. By offering a restricted amount of shares every investor's participation is pivotal to raise the required capital and therefore the situation enables the self-selection of investors with the highest willingness to pay. The entrepreneur has the alternative to choose among different setups and manage her crowdfunding strategy. Making the investment profitable will attract a larger base of investors but also reduce the entrepreneur's profits. If the investment as such is not profitable it will just attract investors who will be future consumer and therefore feel pivotal to make the project happen and ensuring the highest profits for the entrepreneur. The different possible situations of the profit sharing model indicate that with an increasing amount of capital to be gathered profits for the entrepreneur are decreasing and otherwise increase with potential community benefit to be gained. Interesting between traditional funding and the profit sharing model is that the entrepreneur is able to gain higher profits while making the consumer surplus pay via community benefits, depending on their cost. As came across the parameters have different impacts on the mechanisms. The next part will compare the ins and outs of both models.

### **3.4. Comparison of the Mechanisms**

The entrepreneur selects her preferred mechanism depending on the different parameters given. The first point of view for the entrepreneur is her profit to be gained. Community benefits have a positive impact on profits in both their respective models because they enable a consumer surplus that can be partially exploited. With those benefits the profit increases and invites the conclusion that the model that trumps the other in the relative value of community benefits is the preferred one in each particular case. But just considering community benefits is an insufficient indicator since the model of choice is also influenced by the amount of capital that needs to be raised. At pre-ordering it was explained that above a certain threshold it is not possible to finance the required capital leaving the entrepreneur to a constraint of limited amounts of capital that can be financed under pre-ordering.



**Figure 3-1: Function: Profits of pre-ordering and profit-sharing by amount of capital**

In the figure above (Fig. 3-1, appendix) it is mapped when each model is preferable. Increasing values of community benefits under profit-sharing ( $\Sigma$ ) are shown in a profit function of the profit-sharing model ( $\Pi_s$ ). The authors mapped the profit function of pre-ordering ( $\Pi_p$ ) under the community benefits like profit-sharing but with the additional value of consumption. It can be said that if  $\Pi_p$  compared with  $\Pi_s$  under  $\Sigma_1$  then the entrepreneur prefers pre-ordering over profit-sharing for any value of  $K$ . In any other case there is a certain threshold at which the entrepreneur prefers pre-ordering for  $K$  below the threshold and prefers profit-sharing for  $K$  beyond the threshold. See this threshold denoted for the three left cases of  $\Sigma$ , each denoted by the black dots in fig. 3-1. In the beginning both models have no constraints when the entrepreneur asks for a rather low amount of capital. Indeed more positive is that the pre-ordering model here allows for price discrimination and generates higher profits for the entrepreneur because more consumers actually buy the product whereas under profit sharing the entrepreneur enjoys not to distribute any profits under such low  $K$  but lacks residual profits. But this just holds as long as  $K$  is not too large and the preferable model is pre-ordering. With an increasing capital requirement it becomes clear that profits-sharing starts dominating pre-ordering as model of choice for the entrepreneur and similar do the respective community benefits.

### 3.5. Crowdfunding – Practical Examples

Crowdfunding projects, as said before, come in wide variety of context, forms etc. but nevertheless they share common parameters in general. In the following practical examples are given integrating theory and practice of reward-based and equity crowdfunding.

In 2012 entrepreneur Eric Migicovsky, founder of Pebble Technology, started a crowdfunding campaign on Kickstarter to raise funds for entering production for his smart watch project Pebble.<sup>9</sup> The Pebble is an infinitely customizable smart watch that connects to your mobile phone and can run mobile apps according to. The funding goal was 100.000 US Dollar, which was needed to get production tooling, large component order and global Bluetooth certification. After thirty-seven days the project ended and collected over 10million Dollar backed by about 68.000 crowdfunders. The monetary reward scheme for crowdfunders of this project included the watch at a price range of 99\$ to 125\$ for a single item. It was simultaneously announced to retail for 150 US Dollar. The price discrimination Migicovsky signaled was financially very attractive to become a crowdfunder. He did this because the project constituted a product innovation and had no reliable signal of sufficient demand at that time. Further the funding goal was relatively ambitious to finance via reward-based crowdfunding. The information asymmetry led to an inefficient campaign on financial terms despite the project's huge success. This example opposes the argumentation based on Belleflamme et al. (2012) where project's under pre-ordering mechanism rather offer the product at a premium and retail it at a discounted price (Lucky Packet Project). The Pebble project had further appealing signals to tab a wider range of audience. The project also allowed interested individuals to participate in a non-monetary reward scheme by donating 1 US Dollar or more for getting exclusive Pebble updates on technology developments, availability and more. Finally 2.615 people went for this option and backers posted about 15.000 comments. It signaled back that people want to participate in such innovative project even if they cannot commit to pre-purchase by whatsoever reasons. Additionally Migicovsky signaled to let Pebble be an open source platform addressing developers to make the project successful if they are looking to launch their apps on the smart watch.

---

<sup>9</sup> See: [www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android](http://www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android)

Another project with similar attention but smaller in final volume is Stoersender.tv<sup>10</sup>. It is an independent crossover project across cabaret, journalism, satire, and campaigns including actions of civil disobedience. The founders asked for 125.000 Euro using the Berlin based crowdfunding platform Startnext to produce an independent TV magazine. The money was intended to produce a total of twenty episodes of thirty minutes length throughout the year. The project did surpass the goal and raised over 150.000 Euro from about 3000 individual crowdfunders in thirty days. The program itself was meant to be free for the general public afterwards, leaving it with just one period of market, the campaign. Different tiers of compensation were offered signaling to different levels of willingness to pay and personal budget. The stoersender.tv project asked for example to donate 20 Euro to get 3 month exclusive pre-access to their newest content. The perk itself was not that attractive on financial terms. More appealing was certainly the opportunity to be one of the backers who made the program available free of charge for the general public. Here the price discrimination was applied the other way around. The difference is that Stoersender.tv signaled to pre-order for a positive cause and Pebble did rather signal to the financial rationale. There was also an additional participatory signal allowing crowdfunders to have a say in the program.

In the Vagabund project a similar participation opportunity was signaled.<sup>11</sup> Craft beer enthusiasts could buy a membership for a new community based brewpub. In the course of this membership crowdfunders were compensated with regular beer deliveries of new brews throughout the year. The financial offering was rather weak if one compares the offered delivery to beer prices per volume. But as mentioned crowdfunders gained the right of participation. They were granted a say in which beers are brewed as the time of their membership. The project did raise 18.500 Euro from crowdfunders and asked for 15.000 Euro. Stoersender.tv and Vagabund can both be considered efficient projects betting on the giving-for-a-cause motivation and offering perks of participation. To be fair, a new technology product like Pebble is accompanied by more risk and needed to balance the risk on the cost of less efficiency.

---

<sup>10</sup> See: [www.startnext.de/stoersender](http://www.startnext.de/stoersender)

<sup>11</sup> See: [www.startnext.de/vagabund](http://www.startnext.de/vagabund)



These two cases highlight the success of technology/entertainment and beer campaigns indicating financial-, cause-, and participation based motivations. Some other successful examples of reward-based crowdfunding from other industries on Startnext were: Karma Chakhs<sup>12</sup> in fair fashion and foodsharing.de<sup>13</sup> in food, both addressing the motivation for cause mainly. The hardware project iCrane<sup>14</sup> was overfunded by more than 900% offering an innovative product for a financial bargain compared to the announced retail price. On Kickstarter a very successful project was the Ouya<sup>15</sup> game console with over 900% funding. It raised more than 8.5 million US Dollar. This project announced to have the same price in the campaign and retail later but scored crowdfunders like iCrane did. The strong signal here was fairness. It was explained that Ouya will be an open source game console and crowdfunders were asked and integrated for feedback to make it their console. Further developers saw the potential of creating their own games for Ouya. It can be assumed that the target customers were attracted by this transparent and open approach. At least it balanced the financial unattractiveness and led to an enormous success.

On Startnext entrepreneurs can also apply with projects applying the profit-sharing process. A compelling example is Fairnopoly<sup>16</sup>. They founders led a crowdfunding campaign to start an e-commerce cooperative especially dedicated to fair trade and transparency. Crowdfunders could purchase shares in the business and thereby join the cooperative. Fairnopoly raised equity capital from 854 investors who purchased 5 shares for 250 Euro on average. Nevertheless in a cooperative every single investor got one vote although they bought more shares. In financial means it will still pay out according to share volume due to the profit sharing agreement closed with every investment. But Fairnopoly reduced the investor base by signaling that profits will mostly be re-invested. This signal weakened the financial appeal and let investors feel pivotal to make the project happened if they were already hooked by Fairnopoly's vision. It could also be expected that these investors comply with the proposed guidelines and probably would be a good fit considering their future voting right in the cooperative. As a result they were attracted to join this special

---

<sup>12</sup> See: [www.startnext.de/karma-chakhs](http://www.startnext.de/karma-chakhs)

<sup>13</sup> See: [www.startnext.de/foodsharing](http://www.startnext.de/foodsharing)

<sup>14</sup> See: [www.startnext.de/icrane](http://www.startnext.de/icrane)

<sup>15</sup> See: [www.kickstarter.com/projects/ouya/ouya-a-new-kind-of-video-game-console?ref=live](http://www.kickstarter.com/projects/ouya/ouya-a-new-kind-of-video-game-console?ref=live)

<sup>16</sup> See: [www.startnext.de/fairnopoly](http://www.startnext.de/fairnopoly)

community. Like Belleflamme et al. (2012) already reckons, the online community experience between investors allowed crowdfunders to enjoy additional rewards beside purely financial return from their investment.

More popular projects are managed on the equity-based crowdfunding platform Seedmatch (seedmatch.de, Germany. When they started two years ago they offered investors to invest via a participation agreement in a financial construct that bundled all investors in one entity that bought shares in startups Belleflamme et al. (2012). Unfortunately this construct was limited to a total investment of 100.000 Euro. Under these circumstances startups attracted 80-160 investors on average. One of the last startups under this construct was betandsleep.com that just filed for bankruptcy in august 2013 (Carstens, 2013) Their problem was to get a follow up investment that was needed to pursue the business model. This can be seen as a problem of equity crowdfunding. Traditional sources of finance hesitate to invest in project that already did a founding round via crowdfunding. It is assumed that traditional investors fear the risk of a packed investor's table. Since November 2012 the investment on Seedmatch is done via a subordinated profit-participation loan. It allows for higher investments and therefore gives startups the opportunity to ask for what they need in capital right away postponing potential follow up investments (Carstens, 2013)

The first startup to benefit from the new construct innovation was Protonet<sup>17</sup>, a cloud service provider who offers a special server-box to use at home. The common funding threshold to successfully complete a project is 50.000 Euros on Seedmatch. After one hour the self-set maximum of shares to be issued was reached at 200.000 Euros. Projects like Protonet signaling quality on terms like, finance, managing team or technology are quite similar on Seedmatch. To launch a profit-sharing crowdfunding campaign on Seedmatch certain measures must be met. Seedmatch applies due diligence and has a strict selection to be able to signal valid quality measures to potential investors. Often startups already have launched their product/service on a small scale and did generate first revenues. This is a good measure for proof of concept and signals quality. Nevertheless it is still very early to invest and high risks are accompanied with investments at that stage. Besides getting return

---

<sup>17</sup> See: [www.seedmatch.de/startups/Protonet/uebersicht](http://www.seedmatch.de/startups/Protonet/uebersicht)

on investment, investors can exclusively interact with entrepreneurs to get the latest news on developments etc. that let them feel like belonging to an exclusive community. As a result an entrepreneur needs to actively manage this community and develop it to ensure continuous community benefits to keep access. Investors might be willing to invest in a next round of financing if traditional sources are still hesitant.

One of the rather rare profit-sharing (no equity issued) projects on Startnext (ein-Fach.de) went a step further in investor engagement. The founders let individuals decide where to put their locker system containing twenty single boxes within the city.<sup>18</sup> Potential investors could propose a location where they think to get the best return on investment. Consumers probably proposed a location where they would use the service the most. Then the crowd could vote for their favorite locations. At this point individuals become even marketers for their location to ensure it gets selected and might be financed afterwards. All signals bet on participation in the first instance. The startup didn't offer equity but agreed to have investors buy a time limited (2 years) share in their locker system and for that time get the 100% profit of sales made from the very box they invested in. The profit payout though was constraint to a maximum limit that replaced the two-year agreement when reached. Further the threshold to have a project funded was rather low but many projects at different locations were available to reach maximum diffusion. Nevertheless the huge give away and diffusion supports that crowdfunding is not just about funding but also about information. Entrepreneurs use crowdfunding campaigns to test, promote and market their products, in gaining a better knowledge of their consumers' tastes (Belleflamme et al., 2010; Gerber et.al. 2012). In the following chapter the information provided in chapter two and chapter three are discussed.

---

<sup>18</sup> See: <http://einfach.startnext.de/>

#### 4. Discussion

In this section, the author discusses the literature research, practical examples and the analysis of the pre-ordering and profit-sharing mechanisms, in order to reflect on the big picture and selected implications.

The birth of the phenomenon crowdfunding as we know it is obviously due to a conjunction of different fundamental shifts and accompanied by temporary triggers. The concept of crowdfunding as such can take the body of capitalism as well as altruism using modern technologies to apply its particular marketing strategies. It also raises social questions about financing entrepreneurial ventures. The current era of connectedness due to today's technology (web 2.0) led to people's rise in empathy, self-determination and consciousness about global problems. Likewise technology formed a carrier to develop a geographically independent social movement (Agrawal et al. 2011, Gerber et al., 2012, Adams and Ramos, 2010, Rifkin, 2010, Rao and Giorgi, 2006). The carrier technology lets people experience faster and simpler solutions to problems and addresses their "desire for convenience".<sup>19</sup> Further factors as well supported the birth of crowdfunding. For sure the lack in specific legal structures did hinder the phenomenon in some ways (profit-sharing). Finally, due to the financial crisis and strapped budgets entrepreneurs needed to take things in their hands and raise money independently. Crowdfunding was born.

Concluding one can assume the phenomenon is there to stay and grow importance due to its anchorage of- and in fundamental shifts. Temporary accelerators like limited availability of traditional funds and initial success and media coverage might be seen to give crowdfunding the time to develop its potential for changing society and business practices (Gerber et al., 2012). The crowdfunding process consists of a variety of interconnected concepts and has three different stakeholders, the entrepreneur, the platform and the crowdfunder. The platform is rather neglected in this paper so it is in the current research. This is unfavorable and needs more attention. The platform as a two-sided market defines the framework for stakeholders participating in a project regardless on which side. It builds the touch point for consumers to experience crowdfunding and may build the lever to

---

<sup>19</sup> Cf: Williams, E. in Ryan Tate, 2013. Twitter Founder Reveals Secret Formula for Getting Rich Online <http://www.wired.com/business/2013/09/ev-williams-xoxo/>

reduce information asymmetry influencing the success of a project (Eisenmann, 2006, 2011, Belleflamme et al., 2012). Considering the sheer amount of platforms out there by now and the continuing trend of growth (Massolution, 2012) research is very much needed for understanding platform's role and impact.

Reflecting on the mentioned concepts one can recognize a framework of behavioral finance. Crowdfunding at its core is about the social, emotional and rational effects on economic decisions and the behavior on the bottom of it (e.g. contract theory). Signaling serves as the umbrella concept under these theories when it comes to the exchange of information between individuals and decision making via a platform.<sup>20</sup> A signal provides information the other party for example can use either to buy or not, or increase the price or not. Both considered mechanism of crowdfunding partly apply different signals but ultimately each recognizes the importance of signals. Though the credibility of the source of this information should be given a second thought considering the risk and uncertainty about the product service or business model at that stage. In the pre-purchase mechanism signaling theory becomes important if one considers the example of the Pebble watch. The founders saw their product rather as a niche product but through crowdfunding they had enormous success so that planning needed to be adjusted. Even though it didn't go to well to ship the watches on time the signal of demand allowed the entrepreneurs to adjust their output in the pre-production phase. In the profit-sharing mechanism signaling is important in the first place to get initial information but new information is not expected to be such likely as in reward-based crowdfunding. Consequently it stays more risky on both sides. Investors, considering the average crowdfunding investor, could overlook a promising startup and vice versa be fooled. Therefore one can see a pre-selection of projects by quality measures of the platform.

Next to the mostly rational signals there are those triggering the social (participation) and emotional (cause driven) side of entrepreneurs and investors. Since the word, people live by narrative. Storytelling (dialogue) regardless of the form that changed over the years is the tool of communication by that individuals seek for affection, sociability and create relationships (Rifkin, 2010). Since the technological revolution and a dawning transformation towards an empathic society crowdfunding is another milestone on this

---

<sup>20</sup> See: Vance, S., spinnakr blog, 16th of July 2013, <http://spinnakr.com/blog/ideas/2013/07/crowdfunding-success-a-closer-look-at-economic-models/>

path. As we learned earlier that cause trumps cash and people are tremendously motivated for intrinsic reasons crowdfunding finds itself as the socio-cultural context facilitating self-determination theory. Crowdfunding serves as a vehicle to be pro-active and engaged answering the needs of individuals for competence, autonomy and relatedness (Ryan and Deci, 2000). Reward-based crowdfunding is mostly occupied by participation for cause and performs best if appealing to the crowdfunders belief and passion whereas profit sharing addresses more rational motivations performing best for example in digital goods, scoring the highest results (Crowdfunding Industry Report, 2012). Nevertheless if the entrepreneur restricts the issued shares potential investors might get additionally motivated by feeling pivotal to the project, which is a good tactic to hack the investor's rationale code. These emotional or rationale decisions can accelerate or slow up a project when an indifferent individual decides if the product or investment is more or less worth than a "nice to have".<sup>21</sup>

Speaking of crowdfunders rationale or emotional appeal price psychology, another concept of behavioral finance, affiliates to this discussion where the entrepreneur applies the concept by price discrimination. In reward-based projects the price is by rationale matters probably to high but the emotional appeal of additional utility covers the gap. So the price one pays is not the purchasing price it is the price plus the experience, as one will. In profit-sharing projects this is just possible if investors consider being consumers later on or make the project happen beyond financial considerations but other cause. The Fairnopoly project is such a case that offered shares including voting rights but set the business framework straight to cooperation where profits are reinvested in the company without a payout.

Furthermore if the required amount of capital is large than it might be a burden to charge a high price when many crowdfunders are needed to complete the sum called. The Pebble project was against entrepreneur's odds overly successful and retailed later at a 30% higher price. Did the entrepreneurs just exploit the former success at the retail level or did they rather intend to launch with a lower price to attract enough individuals? Anyway in relation to the requested capital they raised far too much for too less. As a result price discrimination can determine the efficiency of an entrepreneurs project. Efficiency driven

---

<sup>21</sup> Cf. Matthew Benson, Kickstarter Capitalism. <http://matthewbenson.wordpress.com/2013/01/12/kickstarter-capitalism/#more-2642>, 12 January 2013.

but not on a financial level was the project einFach with a barely break-even project setup. But they intended to test market acceptance and get maximal possible diffusion of their infrastructure product. Considering that the chances of a second attempt for the same campaign are rather unrealistic entrepreneurs want to make sure they run their campaign as efficient as possible.

To finish the discussion the critical points of the two mechanisms and the underlying theory are highlighted and discussed. The paper of Belleflamme et al. (2012), which was the basis of analysis on the mechanisms in this paper, seems to be based on the pre-Kickstarter era and therefore to simply explain crowdfunding dynamics that did undergo a rapid development in the last three years in full. Although it is yet appropriate explaining that the crowdfunder might pay as long as its extra utility increases with the amount spent or even beyond when feeling pivotal. On the other hand it doesn't consider the fact of different budgets each consumer can spend without consequences and therefore the heterogeneity constituted by the willingness to pay. The personal utility level is determined on an individual level of willingness and ability. The model at hand missed the fact that Kickstarter and others operate by offering larger quantities or extras via various tiers available to crowdfunders whose utility isn't maxed out by the basic contribution. This applies to the second degree of price discrimination according to Pigou (1932).

This paper deals with the circumstance of demand uncertainty (see above) as well as individual uncertainty. The individual uncertainty is resolved over time during the project when exogenous factors like herding behavior positively influence the future valuation of the product for the indifferent crowdfunder. Further the entrepreneur is able to price discriminate during the project and set different price after for example an early success trend or new information of simultaneous development that reduces uncertainty. The Pebble project serves as a perfect case here as well as they increased the price by time. This works vice versa as well when the recent prominent fail Ubuntu Edge mobile phone lowered the price to react on low participation (Ubuntu, 2013; Souppouris, 2013). However here pre-purchasing discounts are considered whereas the analyzed model assumes discounts for the regular consumer. Further the particular situation when the indifferent individual decides to buy or not at a distinct point in the campaign needs more attention

since a campaign can succeed or fail by herding- or bystander behavior. The decision dilemma of the entrepreneur how to apply premiums or discounts is solved individually by project facts and trends. The decision when to select pre-purchasing over profit-sharing and the other way around is given a first indication with proper cases by this model. Still the entrepreneur as individual and her sort of product are pivotal and optimal decisions are less rational than promoted as usually. The author proposes to decide more intuitively when selecting a mechanism. It doesn't have to be about the discussed factor. Perhaps the mechanisms shouldn't compete. Reward-based crowdfunding is rather applied in earlier stages than profit sharing. Also the required capital is lower in most cases. Finally it could make sense to apply both method but just one after another and sideline traditional investor during the whole seed- and startup stage. Concluding, the human side of crowdfunding needs to be integrated more intuitively but the paper at hand can be seen as the start of theorizing a phenomenon and its implications on infancy level.



## 5. Conclusion

This paper reports on crowdfunding as a multifaceted concept. The paper aimed to shed light on the diverse nature of crowdfunding to better understand its complexity. It further tried to analyze the two dominant mechanisms and discuss the overall composition, managerial implications and future considerations. The research question presented turned out to be suitable to this particular setup of a master thesis since it could be answered. The author asked what are the underlying concepts of crowdfunding and how do they influence the selection of the two mechanisms that were analyzed in this paper. The single concepts were identified and presented as were current practical examples. Furthermore the mechanisms and their ins and outs were described and analyzed to break down the process and detect the implications of the single concepts. The threshold dilemma is a perfect trade off for further investigation as is the discount or premium decision. One can conclude from the influence of the community benefits on profit and success that the entrepreneur is asked to identify the right crowd that values those extras. As a result community building is an important but a scholarly and practically neglected part in the area of crowdfunding. As said the human part of crowdfunding is of high impact to the success since it is a signaling process at its core. The complex composition of the additional utility that the crowdfunder can gain and the motivation of the entrepreneur are influencing the rational model based on efficiency. A successful call for a more intuitive approach is given as well. The example of einFach, when the main goal is not to raise as much capital as possible but to get information on customers and markets leads to a new horizon when envisioning crowdfunding as a bigger concept than purely raising funds but perhaps of co-creation and exchange of extended value.

## 6. References

- [1] Adams, C., Ramos, Isabel. (2010). The Past, Present and Future of Social Networking and Outsourcing: Impact on Theory and Practice. *UK Academy for Information Systems Conference Proceedings 2010*. Paper 3. <http://aisel.aisnet.org/ukais2010/3>
- [2] Agrawal, A., Catalini, C., & Goldfarb, A. (2010). Entrepreneurial Finance and the Flat-World Hypothesis : Evidence from Crowd-Funding Entrepreneurs in the Arts. *NET Institute*. Working Paper #10-08. [www.netinst.org](http://www.netinst.org)
- [3] Agrawal, A., Catalini, C., Goldfarb, A. (2011). The geography of crowdfunding. *Nber Working Paper Series*. Working Paper 16820. <http://www.nber.org/papers/w16820>
- [4] Agrawal, AK, Catalini, C., Goldfarb, A. (2013). Some Simple Economics of Crowdfunding. *Nber Working Paper Series*. Working Paper 19133 <http://www.nber.org/papers/w19133>
- [5] Ahlers, G., Cumming, D. (2012). Signaling in Equity Crowdfunding. *SSRN Working Paper*, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2161587](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2161587).
- [6] Armstrong, M. (2007). Recent Developments in the Economics of Price Discrimination. In Blundell, R., Newey, W. and Persson, T. (eds.), *Advances in Economics and Econometrics 3: Theory and Applications (Ninth World Congress)*. Cambridge: Cambridge University Press
- [7] Belleflamme, P., Lambert, T. (2010). Crowdfunding : An Industrial Organization Perspective. *Paper for workshop: Digital Business Models: Understanding Strategies', held in Paris on June 25-26, 2010*.
- [8] Belleflamme, P., Lambert, T., Schwienbacher, A. (2012). Crowdfunding : Tapping the Right Crowd. *SSRN Working Paper*. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1578175](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1578175)
- [9] Belleflamme, P., Lambert, T., Schwienbacher, A. (2013). Individual crowdfunding practices. *Working Paper*. <http://www.tandfonline.com/doi/abs/10.1080/13691066.2013.785151>
- [10] Benson, M., (2013). Kickstarter Capitalism. <http://matthewbenson.wordpress.com/2013/01/12/kickstarter-capitalism/#more-2642>

- [11] Berger, A. N., Udell, G. F. (1995). Relationship Lending and Lines of Credit in Small Firm Finance. *The Journal of Business*. 68(3), 351–381.
- [12] Bhidé, A. (1992). Bootstrap finance: the art of start-ups. *Harvard Business Review*.  
<http://www.ncbi.nlm.nih.gov/pubmed/10122688>
- [13] Brabham, D. C. (2008). Crowdsourcing as a Model for Problem Solving: An Introduction and Cases. *Convergence: The International Journal of Research into New Media Technologies*, 14(1), 75–90.
- [14] Burtch, G. (2011). Herding Behavior as a Network Externality.  
<http://aisel.aisnet.org/icis2011/proceedings/humanbehavior/28/>
- [15] Burtch, G., Ghose, A., Wattal, S. (2013). An Empirical Examination of the Antecedents and Consequences of Contribution Patterns in Crowd-Funded Markets. *Information Systems Research*, 7047, 1–21.
- [16] Carstens, J., (2013). Seedmatch feiert 2. Geburtstag (german).  
<http://blog.seedmatch.de/2013/08/01/seedmatch-feiert-2-geburtstag-feiern-sie-mit-und-wahlen-sie-das-startup-des-jahres/>
- [17] Chui, M., Manyika, J., Bughin, J., Dobbs, R., Roxburgh, C., Sarrazin, H., Sands, G., Westergren, M. (2012). The Social Economy: Unlocking Value and Productivity through Social Technologies. *McKinsey Global Institute*.
- [18] Connelly, B. L., Certo, S. T., Ireland, R. D., Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, 37(1), 39–67.
- [19] Cosh, A., Cumming, D., & Hughes, A. (2009). Outside Entrepreneurial Capital. *The Economic Journal*, 119 (1970), 1494–1533.
- [20] Dana, James, D., Jr. 1 (2001). Monopoly Price Dispersion under Demands of Uncertainty. *International Economic Review*, 42(3), 649–670.
- [21] Ebben, J., & Johnson, A. (2006). Bootstrapping in small firms : An empirical analysis of change over time. *Journal of Business Venturing*, 21, 851–865.
- [22] einFach, (2013). <http://einfach.startnext.de/>
- [23] Eisenmann, T. R. (2006). Internet Companies' Growth Strategies: Determinants of Investment Intensity and Long-Term Performance. *Strategic Management Journal*, 27, 12, 1183–1204.

- [24] Eisenmann, T., Parker, G., & Alstyne, M. Van. (2006). Strategies for Two-Sided Markets. *Harvard Business Review*.  
<https://wiki.aalto.fi/download/attachments/38374131/van+Alstyne+HBR+Two-sided+markets.pdf>
- [25] Fairnopoly, (2013). <http://www.startnext.de/fairnopoly>
- [26] Feller, J., Gleasure, R., Treacy, S. (2013). From the Wisdom to the Wealth of Crowds : A Metatriangulation of Crowdfunding. TOTO Working Paper 2013.01 v2. TOTO Research Project: <http://www.ucc.ie/en/toto/>
- [27] Fershtman, C., & Gandal, N. (2011). A Brief Survey of the Economics of Open Source Software. *SSRN Working Paper*.  
[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1865584](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1865584)
- [28] Freedman, S., & Jin, G. (2011). Learning by Doing with Asymmetric Information: evidence from Prosper. com. <http://www.nber.org/papers/w16855>
- [29] Foodsharing, (2012). <http://www.startnext.de/foodsharing>
- [30] Fudenberg, D., Villas-Boas, J. M. (2005). Behavior-Based Price Discrimination and Customer Recognition. *Handbook on Economics and Information Systems*. Elsevier.
- [31] Gannes, L., (2013). Now Fully Kickstarted, Pebble raises \$15M in Venture Capital from CRV. *AllthingsD*. <http://allthingsd.com/20130516/now-fully-kickstartered-pebble-raises-15m-in-venture-capital-from-crv/>
- [32] Gerber, E., Hui, J., Kuo, P. (2012). Crowdfunding: Why People are Motivated to Post and Fund Projects on Crowdfunding Platforms. [http://www.juliehui.org/wp-content/uploads/2013/04/CSCW\\_Crowdfunding\\_Final.pdf](http://www.juliehui.org/wp-content/uploads/2013/04/CSCW_Crowdfunding_Final.pdf)
- [33] Ghatak, M., & Mueller, H. (2009). Thanks for Nothing ? Not-for-Profits , Labor Donations , and Motivated Agents. Retrieved from  
<http://www.iae.csic.es/investigadorsMaterial/a10191095318archivoPdf9437.pdf>
- [34] Girouard, D., Jacley, J., (2013), The Next Big Thing in Crowdfunding? Kickstarting People. <http://www.wired.com/opinion/2013/04/the-next-big-thing-in-crowdfunding-kickstarting-people/>
- [35] Glaeser, E. L., & Shleifer, A. (2001). Not-for-profit entrepreneurs. *Journal of Public Economics*, 81(1), 99–115.

- [36] Griffin, Z. J. (2012). Crowdfunding: Fleecing the American Masses. *SSRN Accepted Paper Series*. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2030001](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2030001)
- [37] Hallen, B. L., Eisenhardt, K. M. (2012). Catalyzing Strategies and Efficient Tie Formation: How Entrepreneurial Firms Obtain Investment Ties. *Academy of Management Journal*, 55(1), 35–70.
- [38] Hardy, W. (2013). How to perfectly discriminate in a crowd? A Theoretical Model of Crowdfunding. [http://www.wne.uw.edu.pl/inf/wyd/WP/WNE\\_WP101.pdf](http://www.wne.uw.edu.pl/inf/wyd/WP/WNE_WP101.pdf)
- [39] Harms, M. (2007). What Drives Motivation to Participate Financially in a Crowdfunding Community? <http://www.grin.com/en/e-book/181293/what-drives-motivation-to-participate-financially-in-a-crowdfunding-community>
- [40] Hemer, J. (2011). A snapshot on crowdfunding. *Working papers firms and region*, No. R2/2011. <http://www.econstor.eu/handle/10419/52302>
- [41] Howe, J. (2008). Crowdsourcing, Why the Power of the Crowd is Driving the Future of Business. Random House of Canada.
- [42] Hui, J., Gerber, E., & Greenberg, M. (2012). Easy Money ? The Demands of Crowdfunding Work. [http://egerber.mech.northwestern.edu/wp-content/uploads/2012/11/Easy-Money-\\_The-Demands-of-CrowdfundingWork-\\_2012.pdf](http://egerber.mech.northwestern.edu/wp-content/uploads/2012/11/Easy-Money-_The-Demands-of-CrowdfundingWork-_2012.pdf)
- [43] iCrane, (2012). <http://www.startnext.de/icrane>
- [44] Kappel, T. (2008). Ex Ante Crowdfunding and the Recording Industry: A Model for the U.S. 29 Loy. L.A. Ent. L. Rev. 375 (2009). Available at: <http://digitalcommons.lmu.edu/elr/vol29/iss3/3>
- [45] Karma Chakhs, (2013). <http://www.startnext.de/karma-chakhs>
- [46] Kleemann, F., Voß, G. G., (2008). Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing. *Science, Technology and Innovation Studies*, 4(1), 5-26.
- [47] Kuppuswamy, V., Bayus, B. (2013). Crowdfunding Creative Ideas: the Dynamics of Projects Backers in Kickstarter. [http://business.illinois.edu/ba/seminars/2013/Spring/bayus\\_paper.pdf](http://business.illinois.edu/ba/seminars/2013/Spring/bayus_paper.pdf)
- [48] Lambert, T., Schwienbacher, A. (2010). An Empirical Analysis of Crowdfunding. *SSRN Working Paper*. <http://ssrn.com/abstract=1578175> on 04/15/2011.

- [49] Landler, M., (2012). Obama Signs Bill to Promote Start-Up Investments. *The New York Times*. [http://www.nytimes.com/2012/04/06/us/politics/obama-signs-bill-to-ease-investing-in-start-ups.html?\\_r=0](http://www.nytimes.com/2012/04/06/us/politics/obama-signs-bill-to-ease-investing-in-start-ups.html?_r=0)
- [50] Leach, J. C., Melicher, R.W., (2009), *Entrepreneurial Finance*, 4th Edition, South Western.
- [51] Massolution. (2012). Crowdfunding Industry Report. [www.crowdsourcing.org](http://www.crowdsourcing.org)
- [52] McCahery, J. a., Vermeulen, E. P. M. (2010). Venture capital beyond the financial crisis: how corporate venturing boosts new entrepreneurial clusters (and assists governments in their innovation efforts). *Capital Markets Law Journal*, 5(4), 471–500.
- [53] Mod, C., (2010). Kickstartup: Successful fundraising with Kickstarter.com & (re)making Art Space Tokyo. <http://craigmod.com/journal/kickstartup/>
- [54] Mollick, E. (2012). The Dynamics of Crowdfunding. *SSRN Working Paper*. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2088298](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2088298)
- [55] Morduch, J. (1999). The Microfinance Promise. *Journal of Economic Literature*. 37(4), 1569–1614.
- [56] Nocke, V., Peitz, M., & Rosar, F. (2011). Advance-purchase discounts as a price discrimination device. *Journal of Economic Theory*, 146(1), 141–162.
- [57] Ordanini, A.; Miceli, L.; Pizzetti, M.; Parasuraman, A. (2011). Crowd-funding: Transforming customers into investors through innovative service platforms. *Journal of Service Management*, 22(4), 443 – 470.
- [58] Ouya, (2012). <http://www.kickstarter.com/projects/ouya/ouya-a-new-kind-of-video-game-console?ref=live>
- [59] Pebble, (2012). [www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android](http://www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android)
- [60] Pigou, A., (1932). *The Economics of Welfare*. McMillan&Co., London.
- [61] Png, I., (2002). *Managerial Economics*. Blackwell Publishers
- [62] Protonet, (2013). [www.seedmatch.de/startups/Protonet/uebersicht](http://www.seedmatch.de/startups/Protonet/uebersicht)
- [63] Rao, H., & Giorgi, S. (2006). Code Breaking: How Entrepreneurs Exploit Cultural Logics to Generate Institutional Change. *Research in Organizational Behavior*, 27(06), 269–304.

- [64] Read, A. (2013). *Crowdfunding: An Empirical and Theoretical Model of Non-Profit Support*. [http://soundideas.pugetsound.edu/economics\\_theses/91/](http://soundideas.pugetsound.edu/economics_theses/91/)
- [65] Rifkin, J. (2010). *The Empathic Civilization, The Race to Global Consciousness in a World in Crisis*. Polity Press.
- [66] Rubinton, B. J. (2011). Crowdfunding : Disintermediated Investment Banking. *Wired Magazine*.
- [67] Ryan, R. M., Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55 (1), 68–78.
- [68] Samuelson, Paul, A. (1954). The Pure Theory of Public Expenditure. *The Review of Economics and Statistics*, 36 (4)., 387-389.
- [69] Schwienbacher, A, & Larralde, B. (2010). Crowdfunding of Small Entrepreneurial Ventures. *SSRN Working Paper Series*.  
[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1699183](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1699183)
- [70] Serres, T. in Colao, J. J., (2013). The Inside Story of the Largest, Crowdfunding Series A Round of All Time. <http://www.forbes.com/sites/jjcolao/2013/02/13/8m-in-two-weeks-the-inside-story-of-the-largest-crowdfunded-series-a-round-of-all-time/>
- [71] Shane, S., Cable, D. (2002). Network ties, reputation, and the financing of new ventures. *Management Science*.  
<http://mansci.journal.informs.org/content/48/3/364.short>
- [72] Souppouris, A., (2013). Ubuntu Edge crowdfunding campaign adds lower price points as pledges slow. *The Verge*.  
<http://www.theverge.com/2013/7/24/4552182/ubuntu-edge-price-drop-crowdfunding-campaign>
- [73] Steinberg, S.M., DeMaria, R., Kimmich, J., (2012). The Crowdfunding Bible: How to Raise Money for Any Startup, Video Game Or Project. *Read.Me*.  
<http://www.booksabouttechnology.com/>
- [74] Stoersender.tv, (2013). <http://www.startnext.de/stoersender>
- [75] Ubuntu Edge, (2013). <http://www.indiegogo.com/projects/ubuntu-edge>
- [76] Vagabund, (2013). <http://www.startnext.de/vagabund>

- [77] Vance, S., (2013). Crowdfunding Success – A closer Look at Economic Models. *Spinnakr Blog*. <http://spinnakr.com/blog/ideas/2013/07/crowdfunding-success-a-closer-look-at-economic-models/>
- [78] Varian, H. R. (2013). Public goods and private gifts. <http://people.ischool.berkeley.edu/~hal/Papers/2013/kick.pdf>
- [79] Von Krogh, G., Rossi-Lamastra, C., & Haefliger, S. (2012). Phenomenon-based Research in Management and Organization Science: When is it Rigorous and Does it Matter? *Long Range Planning*, 45(4), 277–298.
- [80] Ward, C., & Ramachandran, V. (2010). Crowdfunding the next hit: Microfunding online experience goods. <http://www.cs.umass.edu/~wallach/workshops/nips2010css/papers/ward.pdf>
- [81] Williams, E. in Ryan Tate, (2013). Twitter Founder Reveals Secret Formula for Getting Rich Online. <http://www.wired.com/business/2013/09/ev-williams-xoxo/>
- [82] Winborg, J., & Landstrom, H. (2000). Financial Bootstrapping in Small Businesses: Examining Small Business Managers' Resource Acquisition. *Journal of Business Venturing*, 9026(99), 235–254.
- [83] Wojciechowski, A. (2009). Models of Charity Donations and Project Funding in Social Networks. *On the Move to Meaningful Internet Systems : OTM 2009 Workshops, Lecture Notes in Computer Science*, 5872, 454–463.
- [84] Zhang, Y. (2012). An Empirical Study into the Field of Crowdfunding. *Student Paper*. <http://lup.lub.lu.se/student-papers/record/3049774/file/3049777.pdf>



## 7. Appendix

Figure 2-1: Development of Crowdfunding Literature

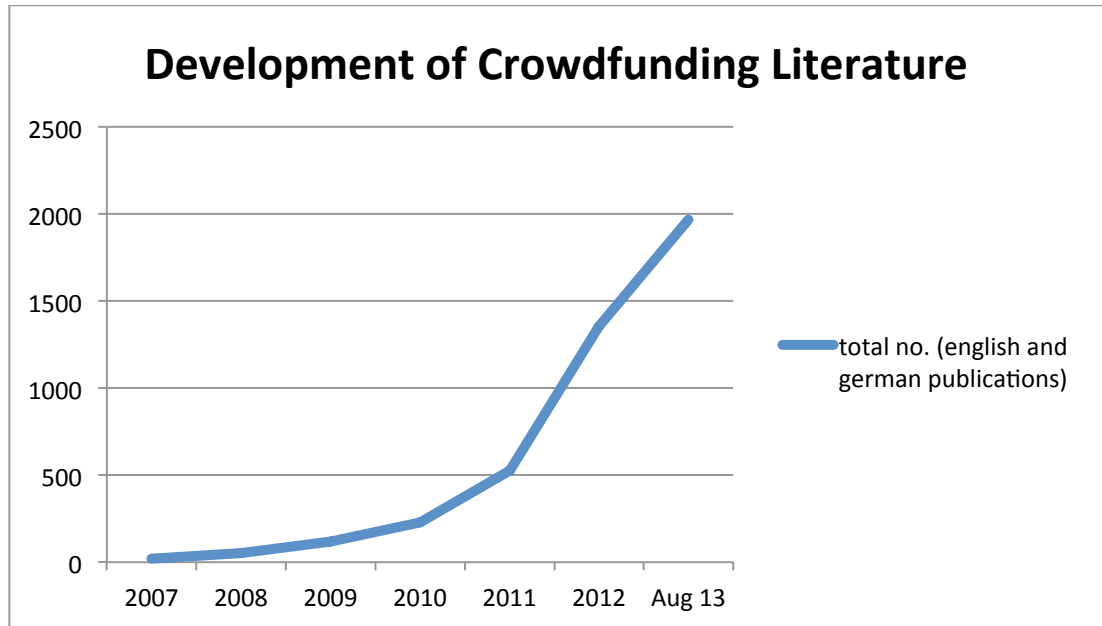


Figure 2-2: Complexity and Uncertainty of Crowdfunding Business Models

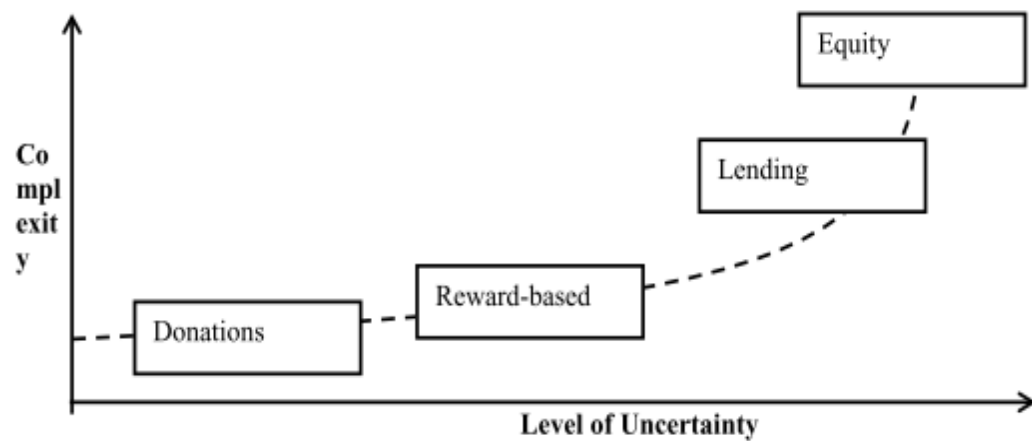


Figure 2-3: Categorization of crowdfunding creator and funder motivations according to self-determination theory.

	<b>Autonomy</b>	<b>Competence</b>	<b>Relatedness</b>
<b>Entrepreneur</b>	<ul style="list-style-type: none"> <li>- Raise Funds</li> <li>- Learn</li> <li>- Control</li> </ul>	<ul style="list-style-type: none"> <li>- Approval</li> <li>- Learn</li> </ul>	<ul style="list-style-type: none"> <li>- Expand Awareness</li> <li>- Connect</li> </ul>
<b>Crowdfunder</b>	<ul style="list-style-type: none"> <li>- Support Causes</li> </ul>	<ul style="list-style-type: none"> <li>- Collect</li> </ul>	<ul style="list-style-type: none"> <li>- Collect</li> <li>- Support Causes</li> <li>- Help Others</li> <li>- Community</li> </ul>

Figure 3-4: Art Space Tokyo Kickstarter Project

TIER AMOUNT	PLEDGES	TOTAL \$	TOTAL %	DESCRIPTION
\$25	28	\$700	3%	Art Space Tokyo PDF
\$65	155	\$10,075	42%	Above + physical book
\$100	64	\$6,400	27%	Above + name in book as backer
\$250	11	\$2,750	12%	Above + signed book + limited edition <i>tenugui</i>
\$850	4	\$3,400	14%	Above + original Nobumasa Takahashi artwork
\$2,500	0	\$0	0%	Above + day tour of Tokyo
<b>Totals:</b>	<b>262</b>	<b>\$23,325.00</b>		

## Statutory Declaration

I declare that I have authored this thesis independently, that I have not used other than the declared sources / resources, and that I have explicitly marked all material which has been quoted either literally or by content from the used sources.

26.11.2013

Date

S. Dehling

Sebastian Dehling