The Role of Crowdfunding in Promoting Entrepreneurship

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01/21/2012

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ABSTRACT

Crowdfunding is a collaborative initiative, usually via internet, where people network to collectively raise funds in order to invest in and support projects delivered by other people or organizations.

Tools such as crowdfunding are born and thrive in a grassroots environment, with a strong potential to positively disrupt the entrepreneurial generation setting and grow to a position of significant relevance in society, namely at a time when alternatives to traditional forms of finance are welcome and the technology to deliver them is abundant.

Entrepreneurship is the act of transforming ideas and projects into economic products or services. Entrepreneurship related to starting new businesses is better known as start-up ventures. Entrepreneurs face a series of challenges, from idea conception and business plan design, to obtaining finance, promoting new products and services, generating revenues and profits and generally growing and sustaining a business for the long-run. These challenges can be overwhelming, namely in the start-up phase of a new venture, leaving several ideas on paper without them having a chance to "grow legs and walk".

This paper and its analysis offer important insights about the contribution of crowdfunding to facilitate the attainment of critical factors for successful entrepreneurship. With extensive use of real practical examples, leveraging previous analytical studies of other crowdfunding implications and reviewing expert literature, by interviewing entrepreneurs, crowdfunding platform owners and by benefitting from hands on experience of working in such an organization, we intend to clarify the impact of crowdfunding in what we considered to be 7 key entrepreneurial requirements detailed further in the introduction section and later in the body of the paper.

The findings have implications for entrepreneurs, naturally, and for business generation theory, extending current entrepreneurial guidelines with innovative tools and methodologies capable of sustaining successful ventures in a newly highlighted cooperative world. We live in innovative times where the channels for the transfer of funds and resources suffer disruptive changes with the potential to significantly improve the ability to generate new initiatives for the well-being of entrepreneurs and all related communities.

KEYWORDS: Crowdfunding, Entrepreneurship, Innovation, Consumer Roles

1. Introduction

"Access to finance is essential to enhance the competitiveness and growth potential of small and medium enterprises," said European Commission Vice President Antonio Tajani, responsible for industry and entrepreneurship, in December 2011. "In the context of the current crisis, marked by a fall in lending to the real economy, it is increasingly difficult for such companies to access loans."

Entrepreneurs today find a liquidity gap to obtain their much needed finance. Bank loans have significantly decreased in number and volume and had their acceptance criteria and collateral requirements have considerably increased. Venture capital and business angels typically finance larger amounts and require sound proof of significant multiplication of investment with high returns evidenced in the first 3 years of a venture. Alternatively, seed and pre-seed entrepreneurs, at the launch of their companies, look for financial support from family and friends who believe in the entrepreneurs without having to witness clear evidence of a potential exponential revenue growth in the first years. However, plenty of business opportunities fail to obtain the necessary funds due to their inability to show enough value to the investors but also a great majority due to the inability to find investors and bring them on board their initiative.

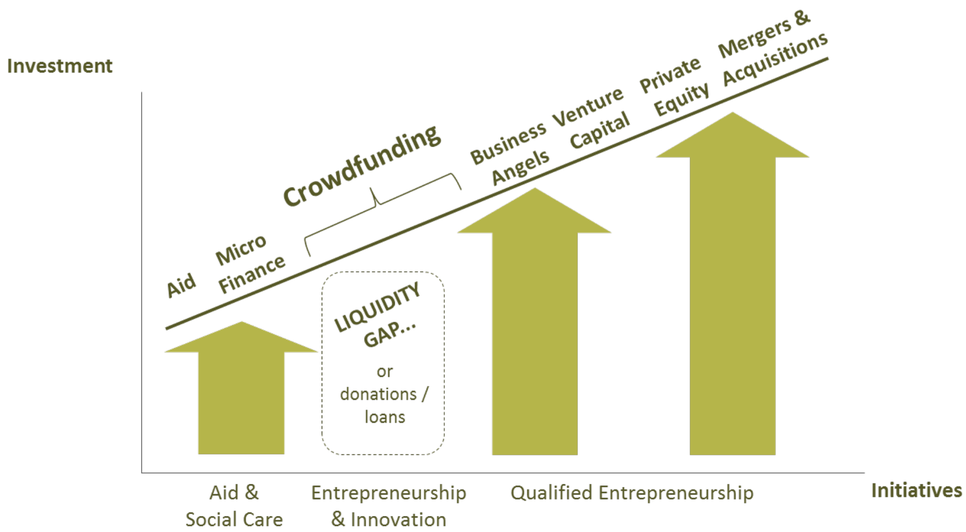

Figure 1: The Liquidity Gap in Financial Investments for Entrepreneurs

source: PPL Crowdfunding Portugal

At a time when alternatives to traditional forms of finance are inexistent and economies around the world stall, entrepreneurs require to find solutions to obtain funding. Conversely, many investors still hold plenty of liquidity, but struggle to find innovative projects and investment opportunities to apply their finances into. In this scenario, crowdfunding has a strong potential to positively disrupt the entrepreneurial generation setting and grow to a position of significant relevance in society.

Crowfunding consists in resorting to the crowd to find many small investors to become involved financially with a project, rather than trying to find a few large investors. It usually involves financial investments executed online, through the use of social networking, where sponsors, investors or donators fund initiatives or entities (with or without profit seeking objectives). There are currently three models of crowdfunding, all of them based on the solicitation of financial investments online with the goal of funding a project, idea or an entrepreneurial venture. This solicitation is made to the maximum number of potential investors possible, through extensive use of online collaboration and communication tools, applying one of three models.

The first and most common method today is reward-based crowdfunding. These are philanthropic donations and sponsorships with no financial return on investment where the investors or contributors are rewarded with creative prizes (usually related to the outcome of the project) and have the opportunity to get involved with the project and support the entrepreneurs.

A second method is the peer-to-peer loan. These are loans from several individuals to another or to an entrepreneurial team looking to fund a project or venture. These loans can involve a financial return on investment with a pre-agreed interest rate amongst the parties involved or simply consider the return of the money lent, with no interest rate charged. The opportunity lies with entrepreneurs that can find it difficult to obtain attractive prices for such a loan from a financial institution, if they manage to obtain one at all, and investors that also find it difficult to obtain a decent return on a savings or investment account if all they have are low volume savings to apply. The repayment of the loan can take several shapes, from a direct bank transfer to royalty fees or rates on the revenues of an enterprise until so long as the loan and interest have been paid off.

Lastly there is the equity based crowdfunding model where the project owners are entrepreneurs who are willing to offer a participation in the equity of their firm in exchange for the funds invested by the crowd.

In all three methods, we witness a democratization of finance through the disintermediation of the financial institution that either charged an unreasonably high price for finance or didn't concede a loan unless it dealt with an exceptionally qualified candidate (that would probably not require a loan in the first place). This consists of the utilization of communication and collaboration channels that enable (remove barriers to) the transfer of capital, wealth, resources and promotion and consequently offer disruptive changes to the way entrepreneurs are able to obtain funds for their ventures.

In Holland, the equity based crowdfunding company Symbid[1] has just recently been awarded the Shell Live Wire Award 2011[2] for the strongest potential contribution to entrepreneurship.

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[1] http://www.symbid.com/

[2] http://symbid.com/press/20-symbid-wins-audience-award-shell-livewire-award-2011

The analysis for this study, the research involved and the results obtained and described in this paper intend to consider and answer the following research questions:

Key Research Question: what role can crowdfunding play in fostering entrepreneurship?

Key related research questions: what impact and in what context does this role affect entrepreneurship? How significant is that impact?

Crowdfunding is a vehicle that may be especially apt to promote and boost entrepreneurship and innovation. It can play a critical role, as a resource integrator and a network orchestrator, to fill the liquidity gap and provide an economy with fuel to its entrepreneurial engine.

In this paper we first introduce the concept of crowdfunding and its potential relation to entrepreneurship as well as the structure of the paper and its content. On section 2 we describe the research methodology utilized to reach the relevant conclusions. The main analysis of the critical factors that affect entrepreneurship and where crowdfunding has a significant role are explored in section 3. Namely, in section 3.1, we consider crowdfunding's impact on the early validation of a business model and on gradually scaling of the operation. In section 3.2 we document a reflection over the relevance of pre-sales and pre-ordering and how these benefits can be harnessed with this methodology. Another relevant consideration is elaborated on regarding the relevance of incremental rounds of funding and the implications regarding equity dilution and control over the enterprise in section 3.3. The user role within an entrepreneurial venture and the academic perspectives over it has evolved through time. With such models of finance, a new role is developed, that of the consumer / financier and it appears earlier in the "supply chain" of launching an enterprise. This study also delves into these implications in section 3.4. Another very relevant factor of entrepreneurial success is the ability to innovate and convert innovation into revenues. Crowdfunding enables this new role and this paper analyses how and what potential it has in section 3.5. Start-ups also require investment in marketing and promotion, but typically this is an area that is frequently de-prioritized due to financial constraints. Again, this tool offers new opportunities in this field that this paper explores and gives evidence of in section 3.6. Finally, the pricing strategy and the ability to determine, as soon into the venture as possible, the shape of the demand curve facing the entrepreneur can be a differentiating factor of success that is enabled and promoted through crowdfunding. In the last factor analysis, this paper investigates how this relation can be significant and how such relevant information can be obtained during a crowdfunding campaign, reported in section 3.7.

In chapter 4 a concluding discussion with final remarks is documented with details on several implications of the findings and insights into the possibilities that can be explored with the future of crowdfunding in section 4.1. In section 4.2 the limitations of this study are stated with recommendations for further research.

In conclusion, the acknowledgements and a list of all the references utilized are documented.

2. Research Methodology

In this thesis we empirically analyse a set of crowdfunding platforms, including reward-based crowdfunding, equity-based crowdfunding and peer-to-peer lending. The data for our analysis was collected via both an extensive review of the academic literature and several interviews with CEO's of equity-based crowdfunding platforms and start-ups, namely:

CEO's of equity-based crowdfunding platforms

- Darren Westlake – Crowdcube[3]
- Korstiaan Zandvliet – Symbid[4]

Interviews and conversations with start-ups and entrepreneurs:

- Paulo Silva Pereira, Yoann Nesme, Pedro Domingos and Pedro Oliveira – PPL Crowdfunding Portugal (Orange Bird LDA)
- Limor Shweitzer – Brandmymail
- Mariano Kostelec – Uniplaces
- Miguel Santo Amaro – Travelabunch
- Pedro Colaço – Guestcentric
- Daniel Sullivan – Appswell
- João Pedro Malheiros – Masterblock
- Filipe Santos – Professor of Entrepreneurship at The Lisbon MBA and INSEAD
- Paulo Rosado – Professor of Entrepreneurship at The Lisbon MBA and CEO of Outystems

Another relevant input to the analysis and research done has been the hands on experience of managing a reward-based crowdfunding platform since August 2011, PPL Crowdfunding Portugal. PPL is unique for the regional flavour it brings, for the qualities and values of the team behind it and for the differentiating marketplace innovation it is working on and developing. It potentiates a truly engaged community looking to exchange funds and skills, resulting in innovative and creative projects. This is accomplished with local action but global thinking, where PPL networks with the strongest references in the field and works with partners and other European and North American platforms to collectively push the envelope in this new area and promote a strongly positive and impactful democratization of finance.

[3] www.crowdcube.com

[4] www.symbid.com

3. On the Impact of Crowdfunding on Entrepreneurship

3.1. Early model validation from small scale operation onwards

Fail early, fail often, fail cheaply has become common wisdom and general knowledge amongst entrepreneurs. This concept is critical in promoting start-up success and is taught extensively in the best management schools worldwide. Failure is the best recipe for success, is what it says.

Filipe Santos[5] once analogised with the image of a tennis player. Early stage entrepreneurs are like tennis players, they see the ball being hit and position themselves on the court taking large strides to reach a target area. As they interpret the ball's speed and spin effect, they will re-adjust their position, taking small steps and shuffling their feet to find the optimal hitting stance. As the ball hits the ground in front of them, the tennis player will do a final body and arm adjustment to ensure he will hit the ball strategically, at strength and with accuracy. If the hit is not perfect, he will have a chance to reply on the opponent's next strike. If he loses the point, he will have the next point to battle, provided he hasn't lost the match. Such is the "game" of the entrepreneur. He will need to take large strides and position his idea to take his product or service to the market. As he moves steadily to design, pitch, finance and launch his project, the entrepreneur will then need re-adjustments, frequent and cheap, along the way, to fine-tune his offer and ensure he will place it and promote it in the most strategic manner possible. These adjustments are critical to the survival of the entrepreneurship and they are required to be understood and executed as early on in the process and with as little cost as possible. They are also required to occur as often as possible until the final set is played. Then, if the entrepreneur fails in his endeavour, he will have gathered valuable experience nevertheless and he will be in a favourable position to launch his next venture, more confident, with added skills and knowledge and with enough energy, will and cash to launch his next "offensive".

This analogy is in line with the recent concepts of Lean Start-up models that look to enable entrepreneurs to do the most with the least possible and to delay significant investment rounds and founder dilution to as late in the process as possible. This way they intend to enable frequent iterations of their business model, product design and overall strategy with low-cost techniques and early on in the enterprise lifetime.

Agrawal et al. (2011) argued that friends and family are critical to generate early investment to launch an initiative and that this early investment is an important signal of entrepreneurial commitment. This signal can and should be used by entrepreneurs, along with other

[5] Filipe Santos is professor of entrepreneurship at The Lisbon MBA International (Catolica | Nova | MIT) and INSEAD

milestones of success achieved to solicit further funds at a later stage, by accessing sources of capital at any distance.

These authors analyse in particular the music industry where they reveal important changes in the field over the past decades. Revenues have significantly been reduced due to new forms of music consumption and sharing such as online sharing, streaming and piracy. Costs, they argue, have also been reduced. Production and distribution are considerably lower in cost due to the development of sophisticated yet cheap software and digital distribution. But however low they may be, costs still exist and financing challenges are the most common amongst artists in the music industry. Furthermore, they rely on the subjective will of the producer or editor to appreciate their work, who may then value it and opt for investing in it to commercialize and, if successful, reap most of the value generated with the sales himself. "In the vertically integrated industry set-up, large record companies provided both financing and a full suite of services (e.g., producer, studio, cover design, distribution, auxiliary musicians) in exchange for ownership of or equity in the artists' intellectual property" (Agrawal et al. 2011).

Crowdfunding has opened up a new playing field in the music industry. Music lovers and consumers now play an important role of not only purchasing the music they desire and so provide revenues to the artist, but they are also involved much earlier in the process and help determine what music is liked, what style, what artist should be promoted and when all this is determined, they help finance the publication of that work so later they and others can consume the artistic product. With crowdfunding platforms such as Sellaband[6] (this example is analysed further in this paper) artists are able to test very early the market appetite for their style, which music in an album gathers the most fans, which music type and which approach (image, promotion, concert or garage play, etc) best fits their audience. They can do this early in the process and are able to adjust to maximize success, finding the right balance between expressing their genuine artistic soul and the commercially valued outcome that will sustain their career and allow them to continue working on their passion. "As the major labels decline in importance, artists have fewer options to relieve cash constraints by borrowing against, or selling equity in, their intellectual property. Crowdfunding helps overcome that constraint by creating a market for the most salient asset available to aspiring new artists - their ideas, vision, and future intellectual property - thereby facilitating financing from distant strangers. Thus, crowdfunding may help reduce an important market failure" (Agrawal et al. 2011).

The music industry is a proven example of crowdfunding applied successfully to enable early, cheap and frequent failure, thus leading many more artists to success, who would have been unknown today had it not been for the likes of Sellaband.

The band Nearfield, from Portugal, was successful in raising $50 000 in Sellaband, from 742 "believers", being the most visited artist on Sellaband with 235 639 profile views (actually 235 640 now)[7]. This band was unknown in Portugal and unsuccessful in launching its work on the market (winning the interest of a record label). With their crowdfunding experience, they were able to directly test the market for the appetite for their work, to incorporate their fan's feedback into their music and produce tracks that gained immediate success as was their pre-

[6] https://www.sellaband.com/
[7] https://world.sellaband.com/en/projects/nearfield

tested expectation. Their track "Dance of War"[8] in a vocal dub version was one of the successful later releases.

These bands are now able to walk back into a record label house and negotiate a larger, long-term agreement, so scaling up their entrepreneurial initiative through the argument that, in the case of Nearfield, close to 1000 supporters have influenced their style, have supported them in producing their work and have financed their initiative until that moment. The band approaches the label with a proven track-record and an existing and consistent generation of revenues, thus showcasing a relevant opportunity for investment more to the liking of the biased producer "taste" for music.

"It is this convergence – of new players, on a new playing field, developing new processes for horizontal collaboration – that I believe is the most important force shaping global economics and politics in the early 21st century" Thomas L. Friedman

When launching a new product, crowdfunding provides a reliable method of testing concepts and ideas before committing relevant funds upfront, thus reducing the financial and ultimately the operational risk associated with a new venture, allowing for more confident entrepreneurs and a higher success rate of new businesses raised with these tools. In turn, this method also increases the likelihood of success in the long-run.

With this method, entrepreneurs can understand the ability to scale and its growth rate when launching a new product. Windowfarms[9] is a social business aiming to support amateur urban farmers that grow their own food. They executed a successful crowdfunding campaign in the famous Kickstarter crowdfunding platform[10].

In this campaign, the entrepreneurs innovated even within an innovative method of fundraising and set a target financing amount of $50 000 to produce a new hydroponic system (method to grow plants with no use of soil, only resorting to water and nutrient rich concoctions) made in China. The financial and fundraising innovation came in the form of a concurrent secondary financing target, more ambitious, of $200 000. This target would enable the system to be produced in the US without having to outsource to a cheaper labour nation the production whilst keeping the assembly within borders. Shivany Ganguly, the Chief Operations Officer of Windowfarms reveals they wanted to manufacture in the United States all the time, but reducing cost of the operation had a higher priority. The only way they could bring the production into the country would be if the end consumer so wished and was willing, or better yet, committed upfront to a higher volume of sales in order to cover the higher cost to have the same product produced in their country. Shivany further argued that this would help them reduce the environmental impact with a leaner supply chain whilst promoting labour locally and investment in the region.

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[8] https://world.sellaband.com/en/projects/nearfield/songs/66658-d-o-w-vocal-dub-cd-edit-popface

[9] http://www.windowfarms.org/

[10] http://www.kickstarter.com/projects/windowfarms/learn-to-grow-and-share-with-new-windowfarms

On the 7th of December of 2011, Windowfarms closed their crowdfunding campaign in Kickstarter. They had gathered investment from 1 577 backers to the total of $257 307, thus keeping in the United States the manufacturing process of their product, promoting local labour and having partnered with their consumers/investors to shape the supply chain and entire operational model of their entrepreneurship. This model test, design and strategic decision with the participation of the investors was done prior to any sunk cost of effective investment executed.

3.2. Pre-sales and Pre-order

Li and Fuqiang (2010) in their paper on pre-order strategy conclude that “a highly sought-after product during the pre-order season provides a positive signal about the product value”.

Further to that conclusion, the “crowd” suggests that “Consumers could potentially benefit from the pre-order economy because their preferences could be met much more accurately and they could gain direct input into the invention and design of the products they buy. Since manufacturers would no longer need to try to persuade people to buy what had already been made, advertising would supposedly decline in a preorder system. This might mean consumers would be satisfied with a lower level of total consumption, which is good for the environment. Finally, companies could benefit from a dramatic reduction in the risk of doing business, since they would know their product lines would always sell out.” in Wikipedia[11]

The crowdfunding mechanism, through its commitment of funds prior to any project launch or production, is a proven method of executing pre-sales and pre-ordering with a guaranteed commitment from the investor/consumer. In section 3.5, innovation and entrepreneurship promotion in crowdfunding, an example is given in which a Portuguese entrepreneur plans to utilize this pre-sales capability to test his product and enable him to achieve a minimum efficient scale of operation, prior to launching or committing any funds to the cause. This investor had only imagined he would one day pursue the execution of such a project and considered the risk too high and the commitment too expensive to eventually set his plan in motion. Consequently, without the appearance of crowdfunding, he would not plan to begin a new entrepreneurial venture as he now does.

Yang Chu and Zhang (2010) conclude that “When the margin is large, the seller should adopt a mass pre-order strategy by withholding information and ordering a large pre-order discount; when the margin is small, the seller should adopt a niche pre-order strategy by releasing a great deal of information and ordering a small pre-order discount; and when the margin is in between, the optimal strategy depends on the amount of information consumers initially possess”.

In 2010, Jean-Marc Giacalone, an entrepreneur from Milton Keynes in the United Kingdom, thought their company needed an entrepreneurial boost as it was innovative and new in the

[11] http://en.wikipedia.org/wiki/Preorder_economy

market but developing and promoting 3D printers and printer kits was an expensive endeavor that required some certainty of success before committing all their energy and funds into it. The producers of eMaker Huxley 3D printer stated their mission to be: “We are a relatively new company specialising in the development of open source 3D printers. Our mission is to make these revolutionary machines available to the mass market, at a realistic price and with a guarantee of printing success.” They decided to launch a crowdfunding project on Indiegogo platform[12] in order to ensure a minimum scale of operations prior to investing in capacity and expensive modern technology. The minimum pre-sales they would consider satisfactory to conclude their product would be well received in the market and had an important role to play were sales to the volume of $30 000. With investment from 302 customers, Jean-Marc sold $158 685 worth of several variations of their 3D printer. Their company now goes on to enlarge the operation and further develop a new and growing niche, secure that they have an assured demand to fulfil.

Similarly, John VDN and Vitor Santa Maria designed a Hidden Radio and Blue Tooth Speaker and estimated an investment of $62 000 for injection moulding tools, $30 000 for global bluetooth certifications and $33 000 for the first production run, totalling an initial minimum investment of $125 000. For two entrepreneurs with no major source of savings or family and friends to invest to that amount, it became critical to understand whether an investment of that sort would generate the required sales and revenues to at the very least not lose any money from the commitment. On the 18th of January of 2012, John and Vitor raised $938 771 in customer orders for their product, from a total of 5 358 clients. These clients have already handed their payments to John and Vitor and they are now set to establish the new company and produce the promised device. Their crowdfunding campaign in Kickstarter[13] was a successful exercise of critical pre-sales to ensure the safe launching of a new enterprise, averting any financial risk and starting with a pre-set base of customers who are involved and feel a part of the entire production value-chain.

3.3. Incremental rounds of funding and equity and control dilution

“The entrepreneur and the venture capitalist “live together” for 3 to 5 years, toward the mutual goal of a public offering or sale of the entrepreneur’s business at a higher price than management or the venture capitalist paid. Occasionally, the process works smoothly.” (Silver 1985)

Ownership of a company by founders faces dilution when others invest in that company. First time entrepreneurs seldom realise the extent of this implication and its consequences to their returns on the personal investment (financial, physical and emotional) and subsequent motivation to exceed expectations of all stakeholders involved, including them.

[12] http://www.indiegogo.com/eMAKER-Huxley-3D-printer-kits
[13] http://www.kickstarter.com/projects/2107726947/hidden-radio-and-bluetooth-speaker?ref=live

For example, if a founder owns 25% of a company and an investor provides funds in exchange for 25% ownership of the company, the founder does not keep 25% of the entire company. Rather his share will be diluted down to 25% of 75% that is left after the investor takes his stake, or 18.75%. This effect occurs repetitively, every time a new investor provides funds in exchange for equity. When further funding occurs, in larger amounts, the effect is exacerbated as typically Venture Capital (VC) will demand higher shares for the subsequent rounds of funding. The first investor will also suffer some dilution and whatever is left after the VC and the first investor retain their share is what the founder will have a 25% share of.

Furthermore, VC's will typically also demand a share of options before investing in the company. These options will also be expected to come out of the share the VC does not own, further diluting the founder's equity. An entrepreneur must also be wary of the first investor looking to protect himself with contractual anti-dilution clauses as this will further increase the dilution of the founder's equity. Also, anti-dilution clauses prevent shares to be sold to new investors at higher prices (thus less equity) to raise capital, as these will typically shy away from contracts where previous investors have such anti-dilution clauses.

In times of financing scarcity or more demanding criteria to obtain funding, the price of finance also increases and funds are provided at higher prices (higher equity requirements). These costs depend on several factors (availability of funds, risk, culture, etc). In 2011, in smaller countries as Portugal, a start-up promising revenues of over 1 million euros in the 3rd year, looking to obtain funding of 350 thousand euros in year zero, can be offered the funding in tranches associated with business growth milestones in exchange for 70% of equity with the potential to buy back options at nominal value, according to the interviews conducted to the start-ups listed in the research methodology section.

In 1999 Julia Smith concluded, after evidence gathered through face-to-face interviews with the owners-managers of over 150 small firms: "Those firms with access to a greater variety of sources of funding may perform better than those who have fewer sources upon which they may draw." (Smith 1999).

Evidence showed some correlations, although Julia Smith admits it hard to establish a reliable prediction of performance. However, more relevantly, the willingness of the owner-manager to dilute his equity stake by taking on further outside investment was not proved to improve performance. Indeed, a majority of firms interviewed, that considered equity dilution revealed a need to retain over 50% control and equity on the financed venture. The firms that did not consider any equity dilution were also the majority of those interviewed, revealing how relevant it was for the founders to retain control and equity over their conceived ideas.

"The evidence on willingness to dilute equity suggests that 40% of high performers would consider sacrificing a proportion of their stake in the business, or their equity holding, in order to promote growth. Slightly more of the medium and low performers (49% each) would act similarly. This figure is probably higher because the latter are more likely to be in need of extra funding than the high performers. The percentage of equity that each group wants to retain is between 49% and 53%, on average, with most nominating a desire to retain a controlling share" (Smith 1999).

A current debate in alternative forms of finance is around crowdfunding, namely equity-based crowdfunding (where returns on investment are in the form of equity shares in a company). Although this form of funding is already permissible in the UK, France, Holland, India and China, it is not yet so in the USA. It is however in the USA that some of the most successful and better known crowdfunding platforms exist (reward based, rather than equity based). It is expected that the Entrepreneur Access to Capital Act H.R. 2930 will soon pass through Congress on its way to being approved by its most famous advocate, President Barack Obama[14]. The same bill has already been approved by the House of Representatives by a large majority (407 - 17) of rare bi-partisan support. This is an Act aiming to amend section 4a of the Securities Act of 1933 thus contemplating limited exemptions to registration with the Securities and Exchange Commission (SEC). In it, crowdfunding campaigns of up to $2 million per year in funding from individuals are allowed without them requiring registering as accredited investors. Entrepreneurs will be able to raise up to $2 million with this method of finance, provided they show audited financial statements. Failing to do so, caps the limit of funds permissible via crowdfunding to $1 million. The campaign itself would require registering with the SEC, but not the investors, whose individual investment would not exceed $10 000 or 10% of their annual income (for investor protection). Shares would also not be able to be sold for the period of one year if the investor is not a registered or accredited investor.

This form of funding is seen as the "future of seed and growth financing for start-ups and entrepreneurs" (in startupexemption.com). The use of technology, Internet and Social Media enables fundraising of limited amounts of capital from friends, family and community. Startupexemption advocates that "it is local vesting and community vetting where only the winning ideas receive not only funding but shared knowledge, experience and marketing power… under a framework that provides for investor protection".

Very relevantly, this form of capital raising, typically enables the kick start of new ventures without resorting to more expensive and equity dilution solutions of traditional financing. There are several reasons why this form of financing is cheaper. Crowdfunding relies on the small investments of many within a community rather than the large investment of a few investors. One of the downsides of crowdfunding currently is the entrepreneur will not benefit from the expertise of a wise business angel or venture capitalist network. This can change in the future as the expertise and knowledge from the crowd can and should be made available. However, currently, the absence of this expertise contributes to letting this form of finance remain cheaper. The fact that the investors consist of a large number of individuals or groups with smaller invested amounts, reduces the personal risk for each of those investors, given that they behave in an optimal portfolio diversification and risk minimization manner. This decreased individual risk also contributes to lower the price of the financing conveyed. The motivations of these investors are also different from traditional investor motivations. They will look at a return on investment but there will also be a return in the form of a reward and potential psychological rewards from a personal connection to the entrepreneurs (previously existing or developed in the meantime) or from a personal connection to the project or the impact generated by the project. Again, these other forms of return on investment contribute to lower the financial cost of the funds made available.

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[14] http://www.startupexemption.com/archives/149#axzz1hwWt0nUa

These lower costs of finance through crowdfunding allow for a seed and pre-seed stage entrepreneur to go through several rounds of crowdfunding without significant equity dilution and loss of control over his venture, prior to setting up a series B round of funding with traditional VC (venture capital) or Angel investors. When finally applying for a traditional round of funding, the entrepreneur may be in a more comfortable equity holding position but also his enterprise may be further developed along the required economies of scale and revenue generation line, allowing him to have a stronger negotiating position with traditional investors (so demanding cheaper prices for that subsequent round of funding).

These rounds of crowdfunding enable a gradual raise of finance in stages.

Why it is best to raise finance gradually, in stages?

Entrepreneurs of start-ups do not have the luxury of obtaining an entire funding for the lifetime of a venture, in multiples of tens of millions of euros, for a new project, from inception. Such entrepreneurs may not have solid business repertoires and are considered too risky for most investors. Such an entrepreneur must first show evidence of success, achieving key milestones in numbers (revenues, profits, customers, employees, etc.) before proceeding to further rounds of finance. These will be enabled through increased valuations of his business. Each round of finance will require the valuation of the company at that stage, considering future growth potential. The share price of the stock of a company increases with the value of these valuations. Existing investors are mostly willing to pay the original price of their initial investment. Therefore, it is in an entrepreneur's interest to seek investment from different investors, willing to value and pay the new share price. Such a strategy will enable the entrepreneur to sell fewer shares but still raise relevant amounts, whilst also increasing the value of the shares owned by the founders (through an increased valuation, although the percentage of shares will be reduced). Such high valuations allow for the entrepreneur to raise financing in more favourable terms.

Brewdog[15] is a brewery from the United Kingdom and a good example of equity based crowdfunding with incremental rounds. It was the first European company to pursue the strategy of an online IPO. In 2009, they made strong use of social media to leverage their existing brand asset value and propose an equity offering. However, it wasn't entirely successful as it was an expensive procedure, each share was sold expensively and the funding target originally set was not fully reached. Nevertheless, a funding of £750,000 was achieved in as little as 5 months. Subsequently, they launched a second crowdfunding project in July 2011, capitalizing on the experience accumulated, naming it "Equity for Punks". Brewdog were able to raise £500,000 in just 2 days and £1 million in 1 month.

Another good example is Trampoline[16] that in 2009 also launched an equity crowdfunding campaign. The project aims to raise £1 million in 4 rounds, of which 2 have successfully completed. In this case, due to the usage of a system to transact that is not proprietary and requiring complying with the Financial Services Authority in the UK (FSA), the campaign is directed at certified high net worth individuals or current shareholders.

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[15] www.brewdog.com
[16] www.crowdfunding.trampolinesystems.com

Other very relevant examples of restrained equity and control dilution, albeit with significant funding acquired through crowdfunding, thus strongly promoting entrepreneurship in various industries, include projects in several European equity based crowdfunding platforms. In the English Crowdcube platform[17] the project Bubble & Balm from the consumer products industry achieved £75 000 giving up 15% equity to 82 investors. In the food and drinks sector, in the same platform, Kammerling's raised £180 000 through 85 investors in exchange for 23% equity. Crowdcube registered on the 21st of October of 2011 a world record funding through this method by financing The Rushmore Group Ltd, in the leisure and tourism industry, with £1 million financed through 143 investors and for only 10% of equity. Interestingly, crowdfunding businesses also utilize their own tool to finance themselves and, this way, Crowdcube managed to raise £300 000 through 162 investors, for 9% equity for itself and also for another platform, Civilised Money, for £100 000 through 121 investors and 10% equity. All of these happened in the second half of 2011. The Personal Development Bureau (phase 1) raised £25 000 for 15% equity through 68 investors, also in Crowdcube.

Brand Expedition just concluded on the 27th of December 2011 a successful crowdfunding campaign raising £20 000 with 171 investors in another equity based crowdfunding platform from the Netherlands, Symbid[18] More recently, on the 6th of January 2012, Enviu, a sustainable business developer from the Netherlands, more famous for its "Sustainable Dance Club" – a floor which generates energy by dancing on it – raised 100 000€ from 372 investors, offering in return 1% of their equity. As these events follow each other at faster rates, we are forced to update this document on a daily basis. As such, and before submitting, we are able to report yet another successful project with SellAnApp that raised 150 000€ offering 53% of their equity to 261 investors on the 18th of January 2012.

In France, Wiseed crowdfunding platform[19] has successfully funded 11 projects so far, ranging from €50 000 for 5% equity for project "Le Coeur de Balma" in the real estate industry to €1.2 million for project "Intuilab", a high tech venture. In this method, however, Wiseed combines crowdfunding with co-financing by Business Angels, Venture Capital societies, Investment Funds and other Angel Investors.

In all of these examples, the funded companies, from pre-seed stage entrepreneurship but also fully formed enterprises were able to obtain financing through crowdfunding and launch new projects, products or services that would otherwise not be launched due to lack of access to inexpensive finance or would be launched with considerable effort from the entrepreneurs. Such a strain in finding funds can potentially put at stake the ability to further develop new concepts and projects in the future and remove focus from innovating to sustaining debt and remunerating investors.

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[17] www.crowdcube.com
[18] www.symbid.com
[19] www.wiseed.com

3.4. The evolution of the user role and its impact in the entrepreneurial value chain

The user or consumer of an end product or service has played a key role in the marketability of any good or service. Indeed the user's intervention and our understanding of it has evolved through time and become significantly more relevant with direct impact on output of the entrepreneur supplying the product. Understanding this development and harnessing its potential has, consequently, also become a key differentiating factor enabling entrepreneurs to innovate and acquire the benefits of commercializing that innovation.

Ordaninin et al (2010) carefully lay out the role assigned to the consumer in the marketing literature and how it has evolved over time, concurrent with the evolution of markets. The "Functional School" of the 1970's (Barksdale and Darden, 1971) considered consumers to be critical sources of information to be analysed and utilized in strategy definition. In the "Service Marketing" school of thought (Fisk et al., 1993), users were co-producers. Eric von Hippel, starting in 1986 brought us the understanding of users as partners in innovation, with his "Lead User" theory, where the burning needs of a user and his resourcefulness would become one of the prime sources of innovation with the added benefit that it is pre-approved as valuable to the its ultimate beneficiary – the same user. More recently, in the "Service Dominant Logic" theory of Vargo and Lusch, 2004, end users' role has been perceived as a key resource in co-creation of value. The role consumers represent has evolved through time to carry significantly more relevance, influence and power in the value chain of any corporation.

With the advent of crowdsourcing[20] and crowdfunding in particular, the user's role has shifted upstream in the value chain. Users may now not only show willingness to pay for a finished product, but actually commit the payment upfront as a decision to produce and promote that same product, rather than acquiring it. In this commitment, the user shares part of the operational and financial risk with the producer and entrepreneur. This involvement and participation in the production process but more relevantly in the strategic decision making and design process, represents an evolution of the consumer role to a more sophisticated and blurry blend between consumer and producer (in some media referred to as the "prosumer").

Through extensive research based on qualitative case analysis and quantitative data collection and analysis (both primary data through detailed interviews to leaders of different crowdfunding businesses and secondary data obtained from the company records, official company sources and general publically available information), Ordanini et al (2010) contributed to the marketing literature by unveiling and providing an understanding for this new "upgraded" role of the user. Within this new role, "the money is invested by consumers to obtain a return, mostly financial, but sometimes intangible (e.g., status, social esteem, identification, etc.)… Crowdfunding models include elements of crowdsourcing frameworks in which the members of a community share ideas to solve a problem or pool their efforts to create favourable exchange conditions for the community's benefit. However, in

[20] Using the crowd to gather input, ideas, feedback, participation, solve challenges and work on tasks as a means to execute corporate actions

crowdfunding, it is not idea generation or bargaining power that emerges from the crowd's collective efforts; instead, what the crowd generates is financial support for already proposed initiatives." Through social networking, this involvement much earlier in the process and along the different stages of the entrepreneurial activity lets the user assume responsibility in the design phase, the campaign setup phase, the production phase and the service delivery phase. The users, through their decision making, influence and financial support become key factors in the successful delivery of the final offering. Adding to this intricacy and richness of involvement, when previously in marketing theory the consumer had an active role of engagement with the entrepreneur to provide the service but also assumed the role of consumer of that service, with crowdfunding the user participates, designs, develops, funds and can ultimately leave consumption to other consumers getting involved further afield.

In the project "Livros de Ontem" in the PPL Crowdfunding Portugal platform[21] this blend of roles from consumer to producer passing through financier has enabled the planning and design of an innovative new service that if successfully funded with give way to a new enterprise that will establish a different market concept. A group of university students, faced with the challenge of requiring expensive new books for their subjects albeit lacking funds to obtain them, looked for alternative solutions. They realized they could find some of the books at old bookstores known as "alfarrabistas". Amongst their colleagues, they also realized some older students were willing to sell used copies in acceptable state. Through some elaborate coordination they started to facilitate the acquisition of used books for themselves and some of their colleagues. But demand for such a solution began to increase and the students realized they were spending far too much time with the coordination and not making any profit from this service. As users in need themselves, they gathered around a drawing pad and began to design an online second hand bookstore for technical books used in some specific undergraduate courses in university. Understanding what it would take to produce a platform to manage a marketplace for these desired goods, they launched a crowdfunding project to finance the development of this platform and acquire enough of a stock of selected books that would enable them to generate revenues from day one.

This project in PPL is still underway and we can only hope it is successful. The experience gathered with it, however, is enough to understand this development of the user role, the blur from consumer to producer and the relevance to innovation and entrepreneurship enabled by the crowdfunding tool. Firstly the owners of the project began with a pain to address and developed on their own the solution required. Being users themselves, they utilized one of the most powerful sources of innovation, user based. This is consistent with the research done by Oliveira and von Hippel who found that the vast majority of the new services (the *functional* innovation) offered by service providers were first provided by users to themselves (i.e. output of identical similarity for the user). They confirmed these results when analysing data from research conducted on banking services and in which both banks and users had gains to achieve with the innovative new service and no barriers existed in the form of regulation. In their research, 87% of new *function* was first developed by users. Lead User theory (von Hippel, 1986) indeed suggests that some users are able to anticipate requirements and needs long before they become mainstream. Von Hippel goes on to recommend to companies that

[21] http://www.ppl.com.pt/investment/livros-de-ontem-a-cultura-para-todos-1045

they engage and monetize this lead user innovation and capability to develop new services and products. Lead user theory enables a very relevant understanding of some characteristics of crowdfunding investors and users, like the validation of ideas, the support in designing or redesigning them and the voting right through willingness and commitment to pay for the final product. But Lead Users as in von Hippel's theory are not abundant and they are difficult to manage and coordinate. This brings us to a second point on entrepreneurial and innovative contributions by the users at large. The involvement of the project supporters in the crowdfunding campaign for the "Livros de Ontem" project was determinant in generating other sources of innovation. Investors in the project, are not Lead Users but they also have a say in the design of the platform. They have opinions that require to be considered, in order to obtain their financial support. These opinions regard functionality such as peer reviews and ratings of book suppliers, the ability to post requests or even the demand for specific books. The latter is especially relevant for the consumer financier as on the launch of the platform, some investors will demand to have immediately available the books on the specific subjects they need.

On funding, this crowdfunding project will have had involvement of users to initially innovate the solution and service to provide, to design the functionality to be available with this service, to determine the actual products delivered once operational and above all, they will have funded a new company to provide a service to themselves and the wider public.

Voting rights of consumers can be extremely powerful as an innovation and entrepreneurial vehicle, especially if the voting community is representative of the overall population of consumers and has financing power over the entrepreneurs. Ordanini et al. so conclude that "Consumers become integrators of talent (of others), financial resources (their own), and promotional efforts (through social networks) in their role as crowdfunding participants" generating new entrepreneurial ventures in the process.

Furthermore, Ordanini et al. conclude in their extensive interviews that "consumers participate in crowdfunding websites because they like engaging in innovative behavior." They will be involved with the project, the entrepreneurs and the entire initiative, but they are also motivated by the novel method and the technological and social advance implicit in this networking environment and its promising potential.

Another important example of this new evolved role of the user and also the role of the crowdfunding platform involved is the case of Sellaband[22]. This innovative platform allows users to invest in an artist and when an investment target is reached the user receives a reward normally associated with the artist (CD, t-shirts, tickets to a concert, backstage pass, etc) and also a share of the sales and revenues the artist will achieve. The concept was initially setup for newcomer artists to support them in their otherwise unpublished work but today Sellaband has become an important market solution for also renowned artists to promote not only their works but also their tours and concerts. Before Sellaband, musicians had to follow traditional channels and be reliant on the decision by an elite and biased group of people that controlled the industry to decide which individuals had the "talent" to be permitted to record and publish their work. As the number of artists without a means to deliver their work to

[22] https://www.sellaband.com/

customers interested in consuming their product grew, solutions like Sellaband appeared to enable consumer to choose the music they wish to hear and so have artists financed because they have an audience and not because they have a connection to a producer. In this example the crowdfunding platform plays a key role of intermediary of supply and demand, disintermediating the industry at least for a good number of artists and correcting a failure that would otherwise persist. The result is visible, plenty of new artists are able to become music entrepreneurs whereas before they would not have that opportunity, consumers are able to determine which music they like to see produced and they are able to invest and make a profit in revenue sharing by doing so. Public Enemy's album "Thank You!!!"[23] was successfully funded to the value of $75 000 with the backing of 1178 fans.

It becomes easier to understand that these new channels of collaboration and engagement that merge consumers with producers bring about exciting opportunities. It is this conviction that leads Ley, A. and Weaven, S., (2011) to restate that "businesses that successfully harness social media in the context of commercial transactions may have significant leverage opportunities through greater access and information sharing with consumers" and they were referencing Hagel and Armstrong as far back as 1997.

3.5. Innovation and Entrepreneurship promotion in Crowdfunding

Economic growth reveals a great dependency on the healthy environment for promoting small firms, as they guarantee a very significant fraction of overall employment and Gross Domestic Product (e.g., Ley and Weaven 2011).

This is confirmed for example in the Portuguese economic reality and data from PORDATA, where in 2009 over 95% of non-financial companies had less than 10 employees.

It follows that the financing of start-up companies, the provision of funds to capitalize them, the ability to launch successfully at low costs and their corresponding chances of survival are paramount to an economy and its health.

"Low-cost Innovation"

"The price of starting a company has never been lower, and science is unpacking the common characteristics of entrepreneurs" (Scott 2011).

Today we witness a "Lean Start-up" movement[24] that teach us to do more with less. They profess that resource usage can be optimized and that technological advances have enabled us to test and validate almost any business model, at very low cost and financial risk, prior to committing substantial resources to a project. Customer segmentation validation, product demand test, pricing strategy definition and even a product's overall viability to be marketed

[23] https://www.sellaband.com/en/projects/publicenemy
[24] http://theleanstartup.com/

can all be accomplished at significantly lower risks than ever before. Innovation itself, a main source and driver of entrepreneurship, can today be validated and iteratively developed at very cheap costs.

According to Scott Anthony, in the mid-1980's Robin Wolaner had the idea to produce and sell a high quality magazine aimed at parenthood. Her plan estimated a cost of approximately $5 million to conceive this project and launch the magazine. Such an investment obviously needed a thorough market acceptance test prior to launching into a costly venture to produce something that might ultimately be rejected and be of no interest to the market. Robin innovated by sending a sample issue of the magazine to selected targets, to validate demand for her product. Each sample sent out had a reply card, postage paid, to provide feedback to Robin on their wish to subscribe to the magazine. She invested $150 000 to execute this "market research" exercise. The results were very positive and Robin moved ahead with her project, later finding a successful exit strategy when she sold the magazine to Time Life, Inc. The initial investment in the innovative market testing strategy ended up being a good investment, albeit not cheap, when her final return summed up to $10 million.

In contrast, in 2010, a would-be entrepreneur discussed his project proposal with crowdfunding site PPL. He wanted to bring to Portugal a specialty magazine of a field that was quite specific and professional. He was sure there would be plenty of interest in it as he worked in this field and often had conversations with colleagues about the magazine. Every time one of them got a hold of the original English version of the magazine, it would circulate until the edges were soft and crimped. He had contacted the original publisher and had a spoken agreement to be the sole importer and translator of the magazine. To his surprise, the publisher also agreed to give him exclusivity of the magazine to any Portuguese speaking country, which includes Brazil, Angola, Mozambique, etc, adding up to a significant potential market size. Rui quickly opened his excel and put together a cost calculation to understand that to fulfil the minimum order quantity of 300 magazines per month, to cover the costs of translation and to pick up the tabs on marketing, legal services, company registration and all he would require around €15 000 for the first year, assuming he would not receive his salary from this firm and that some assistant work could be shared from his other employer. A cost of €5 per issue seemed a reasonable promotion price to launch it on the market, being that specialty magazine consumers would be willing to pay more than that once they realized its value. And for this price he would cover the annual cost of bringing at least 300 magazines per month and if he had at least 300 investors at €5 he would achieve €18 000 which would well cover for promotion costs and any other reward cost to support his crowdfunding campaign.

Most relevant of all, Rui had not required extensive calculations to understand his financial risk with launching this project. That risk was minimal. The cost of launching a crowdfunding campaign was zero. The cost of promotion was minimized through the strong utilization of social networking and other low cost tools. The cost of not achieving his financial investment request was only that he would suffer a disappointment and would have seen his late nights and weekend hour efforts disappear into well wishes from an insufficient number of investors. Additionally, the crowdfunding platform would charge nothing if he didn't achieve his funding target and his opportunity cost would not surpass the time, effort and promotion investment he would have made. On the other hand, his only cost of a successful funding would be the 5%

commission this platform would charge. This, in any case, had been accounted for in the cost structure of his crowdfunding project.

How does Rui's and Robin's cost to innovate compare? In the case of Rui, his costs were less than 0.1 % of the investment of Robin Wolaner for a very similar exercise in the 1980's (with no crowdfunding). It would be innovative, namely as we are speaking of a specialty magazine inexistent in the Portuguese language, that would help push the boundaries of the field in countries where this language is spoken. The financial risk is lower as the investment is lower but also through the commitment mechanism, whereas Robin relied on intention revealing cards she hoped would hold true once she made the investment to produce the magazine, Rui could count on hard cash pre-sales (if successfully funded) to ensure his first year minimum order was fulfilled. Anything else he sold during that year would be at a profit and would serve the purpose of reinvestment to grow the business or pay himself of the assistant the much deserved compensation.

Through crowdfunding, Rui is able to replicate the exercise of innovating in the market to launch a new enterprise, at a fraction of the cost required decades earlier in a very similar exercise done by Robin without access to social networks.

In the words of Scott (2011) "The low cost of innovation affects all of us by giving us more options. Think about weight loss. Instead of just relying on willpower or going to a specialist weight-loss clinic, innovators have given us an incredible variety of dieting applications in Apple's App Store… Further, scientists increasingly throw out new mechanisms to lose weight, with ideas transmitted in a blink of an eye on Facebook, Twitter, and other networking tools."

Nevertheless, it is not enough that Rui and now Robin can innovate at a very low cost in the 21st century. They must possess qualities and behaviour patterns that enable them to think up these new ideas and build on other's ideas to bring about positive disruption (Scott 2011). In essence they've discovered what they believe is a critical associational thinking where innovators connect several ideas that may not be obvious to link. More importantly, we find that social networking tools and namely new tendencies in work, like crowdsourcing, or funding, like crowdfunding provide a means to explore the approaches that gather the right stimuli to enable these connections.

The researchers, Scott (2011), identified four approaches that enable these stimuli to be conveyed to innovators.

- Questioning: posing critical questions that strengthen or do away with significant challenges (e.g. what if I had 300 pre-sold subscriptions to my magazine? What if I were able to test the Portuguese market for this specialty product prior to any financial commitment to do so?)
- Networking: the possibility of engaging with people with diverse cultures and rationale that provide different parameters to evaluate ideas. In the example of the project "Formiga Juju"[25] successfully funded in the PPL platform, networking enabled investors to have an opinion and contribute to the development of the children's story. Indeed,

[25] http://www.ppl.com.pt/investment/a-formiga-juju-na-cidade-das-papaias-1017

upon confirmation with the author, the last third of the story was fully crowdsourced and was not at all what she had originally thought of. These investors networked with the promoter of the project all the way from the United States, Brazil, the Middle East, Asia and Africa to her base location in Mozambique)

- Observing: this stimulus is apparently obvious, but current access to information is paramount in enabling the availability of the required information as well as technological advance is required to sift through the overload that this very same information can be. Although these tools don't offer any particular mechanism to enable a developed observation method, the sheer volume and proliferation of crowdfunding projects today provide a very rich hunting ground for references, ideas and incredible innovations in almost any field
- Experimenting: aligned with the fail early, fail often and fail cheaply concept, successful innovators require plenty opportunities to fail and try again. Tools that allow for iterative experiments with full collaboration and interaction with the potential target customers will enable rapid development of idea and evolution of these to meet undiscovered or as yet un-communicated user needs.

People that engage with a project, originally to buy a reward or support an entrepreneur, become much more involved and come to "own" the project. The crowd has contributed with content, skills, resources and funds to several projects. For some projects, the crowd itself has become the main promoter, voicing their support in a viral networking effect. These individuals or groups, that participate in the process of funding via this method have a tendency already to be innovative themselves, trying new ways of interacting with project promoters, companies and other investors or consumers. Naturally they are also moved by their identification with the social nature of the exercise, with the cause of the project or the entrepreneurs behind it and this creates incentives for them to become involved with the initiative. A relevant segment will also be the consumer or investor that plans to receive a return on his investment and that is a major motivation that will always be driven by, amongst other factors, how innovative a project is and what expectations of a future profit it may generate. This in turn promotes an environment that promotes and pushes for innovation, by rating and preferring projects and ideas that bring disruptive and useful functionality with a promise of a positive impact in society, users and investors.

Velocity of innovation

In the field of economics, the velocity of money is a critical factor used by economists to help understand how robust an economic system is. It measures the rate of circulation of money to make transactions and purchase goods and services. This is not the supply of money, a static view of the amounts of currency available in a system, but a more relevant indicator of healthy economic activity, where money is put to regenerating use rather than being "hidden under a mattress". In *The Crowdfunding Revolution*, Kevin Lawton and Dan Marom argue that the same logic applies to the velocity of innovation "it… paints a very clear picture of the stifling characteristic of our intellectual property system with respect to today's innovation and rate of change”. They create a further analogy to our planet’s natural resources, in which these are extracted, processed and converted into products thus generating economic and social benefits to all. These benefits enable other developments and the conception of new ideas. The more efficient is the process of “extraction” and processing of new ideas and the more iterative and faster it occurs, so will the velocity of innovation likewise increase, generating increasing benefits to the development of new enterprises and economic activity that transact on innovative products and services. Social networking applied to finance (a.k.a. crowdfunding) enables a steady supply of idea flow with collective improvement and scalability of impact through increased connectedness and absence of barriers to the flow of resources, funds and capabilities. Crowdfunding thus promotes this velocity of innovation with relevant impacts to the frequency and quality of the ideas generated for new entrepreneurship.

Overcoming barriers to innovation and entrepreneurship

Freire (2000) lists the main obstacles to the creation of new enterprises to be the perception of risk by the entrepreneur, the perception of capital scarcity for finance, the perception of personal inadequacy to execute a project, the perception of competition or a highly competitive environment, the perception of the *status quo* that is not to be changed, the fear of failure and of loss (over indebtedness) and myths such as racism or chauvinism. In a potential vicious cycle, these fears may impede the drive to create new entrepreneurship and consequently innovate. The lack of innovation due to these fears in turn strangles entrepreneurship as no new ideas are generated to be commercialized.

Crowdfunding is a tool that enables a significant lowering of the financial risk involved in a new venture. With its ability to execute pre-sales and to gather a minimum efficient scale of demand and support prior to any commitment of funds or resources, it allows for an entrepreneur to invest minimally (as per several of the examples listed in this thesis) in the promotion and communication of the crowdfunding project, prior to any major investment in the actual execution of the venture. Other risks are then involved with this kind of exercise, but they are arguably considered less severe to the entrepreneur than the risk of financial loss and bankruptcy, such as social risk (of not being able to prove his point and sell his idea), intellectual property risk (if not done right, an entrepreneur may reveal too much when soliciting investment and enable imitators to replicate his idea, ultimately faster than the entrepreneur would have expected) and reputational risk, different from social, in that there would eventually be only so many failed crowdfunding attempts by an entrepreneur before he would be generally dismissed by the crowd for future investment opportunities.

Capital scarcity and the general liquidity freeze for seed and pre-seed stage entrepreneurs is a serious current challenge. Tools that tap into a large crowd of investors, where the equation is inverted from a few investors times a large contribution to many investors times smaller contributions open new doors and possibilities to obtain the much needed funds. Crowdfunding can achieve funding success rates to the order of 50% of all the reward-based platforms that publicly report their results and also of PPL, and slightly lower for equity-based crowdfunding platforms, as per the sharing discussions with Darren Westlake (Crowdcube) and

Korstiaan Zandvliet (Symbid), to the order of 30 to 40%. This success rate, although apparently low, is relevant in eliminating the perception of lack of funds that may prevent an attempt at proposing a new and innovative entrepreneurial venture. Entrepreneurs see this success rate as an almost 1 in 2 chance of success with a much more significant benefit which is the transparency of the process and the logic for succeeding or not in financing one's project. This transparency also allows for the more savvy entrepreneurs to study the major success cases and quickly pick up on the critical success factors (such as the idea itself, its interest to a community, the supporters, the communication and promotion of the idea and the crowdfunding platform (its quality, seriousness and professionalism) the projects succeeded in obtaining their required funds.

The remaining barriers, Freire mentions, as the perception of personal inadequacy to execute a project, the perception of competition or a highly competitive environment, the perception of the *status quo* that is not to be changed, the fear of failure and of loss (over indebtedness) and myths such as racism or chauvinism find strong mitigation forces in collaborative online tools due to the collective and cooperative experience they provide. The wisdom of the crowd and the sharing of that wisdom empower the entrepreneur and provide him with the access to knowledge, skills and resources enabling him to venture into a project lacking some of those, as long as he's clear about them and solicits this participation. Ultimately, crowdfunding will evolve to the ability for an investor to reap the benefits of the return to his investment, whether his contribution comes in the form of capital, resources, skills and knowledge or simply promotion (networking access and diffusion). These marketplaces for projects, ideas, funds, resources, labour, equity and promotion have the potential to mitigate if not eradicate any entrepreneurial perception of risk of inadequacy, too competitive an environment, an inalterable status quo and fears of failure or unfounded myths. Pre-testing, pre-selling, pre-validating an idea and gathering strong support from future consumers and investors solidifies a project and minimizes many of the barriers to innovation and entrepreneurship generation existent today.

Scientific Research and innovation

In a more direct impact on innovation, crowdfunding has been proved to contribute to scientific research by enabling the funding of science based projects that bring about new developments.

In just over the period of one month, a test was executed to validate this capability of crowdfunding. The SciFund initiative was setup[26] for scientist to raise money from the larger anonymous crowd to fund their research. In all 49 scientists from 5 countries agreed to the experiment to try and crowdfund their research. The challenge occurred between November 1st and December 15th of 2011 in the crowdfunding platform Rockethub.[27] In this short period of time, the experiment proved successful by raising $76 230 from 1440 contributors. Some of the projects successfully funded were "Send John to the Jungle" where the expenses of $1000

[26] http://scifund.wordpress.com/
[27] http://rockethub.com/

for doing research in Yucatan by anthropology student John G. were fully covered, another was "Ancient Roman DNA Project" where a pilot study of ancient DNA was funded to the amount of $10 171, also "Cancer? Yeast has answers" was successfully financed where $2 835 were invested in cancer research. Other projects included "Support Zombie research" where $5 000 will finance the understanding of brain infecting parasites and "Artificial Photosynthesis at NCSU" which will enable the learning of how to capture and store the energy of the sun using chemistry. These are some of the many projects funded with this experiment and that stand a chance of turning into successful entrepreneurships that look at commercializing the findings of any of them. Table 2 below depicts the evolution of funds coming in to this crowdfunding experiment in such a short period of time.

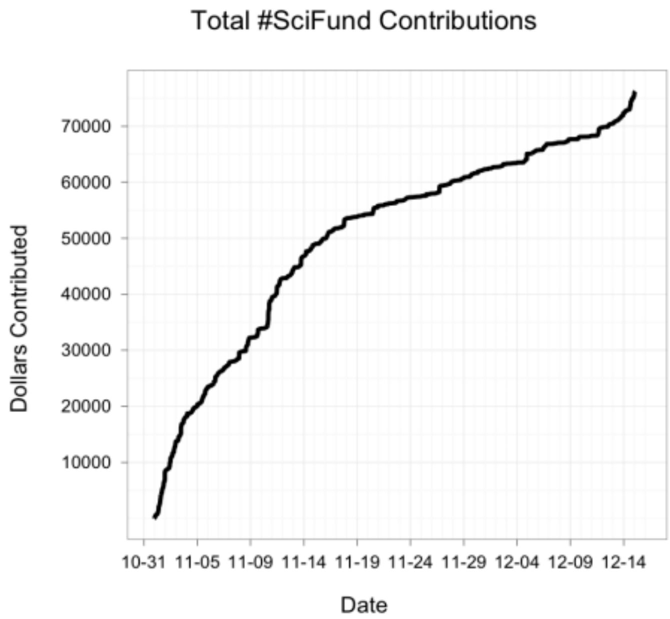

Figure 2: Contributions to SciFund Challenge Crowdfunding Experiment

source: http://scifund.wordpress.com/

In another example of direct relation to scientific research, a scientist from Instituto Gulbenkian da Ciência, a renowned scientific research foundation in Portugal, is crowdfunding her research of the Lemur primate in the island of Madagascar. Some of the rewards for investing in this valuable research come in the form of a copy of the final report of the research, a personal discussion with the team of scientists behind this and other investigations and other related merchandising goods. For €2 000 anyone can become a part of the team that supported and enabled the research of this species existent only in Madagascar[28].

[28] http://www.ppl.com.pt/investment/conserva-1041

3.6. Promotion and Marketing in Start-ups

"The groundswell is a social trend in which people use technologies to get the things they need from each other instead of from companies.

The groundswell phenomenon is not a flash in the pan. The technologies that make it work are evolving at an ever-increasing pace, but the phenomenon itself is based on people acting on their eternal desire to connect. It has created a permanent, long-lasting shift in the way the world works. How to deal with this trend, regardless of how the individual technology pieces change… we call groundswell thinking" (Li and Bernoff 2011)

Power to the people is the motto and the drive behind this groundswell. It is a revolution in disintermediation that enables people to connect and demand or protest their rights and more relevantly, channel the resources amongst themselves to attain the desired objectives of a community, group or individual. These are the "protesters" that made Time Magazine's Person of the Year 2011, connected by technology and information and resource sharing. The free transfer of such resources allowed for a tremendous power stance that overthrew dictatorship in Tunisia and Egypt. Generations of secular tradition were broken when women in Saudi Arabia gathered to demand the right to drive (not that driving was secular, but woman's place in society in that culture would never contemplate such public manifestation). Occupy Wall Street gave visibility to the "99% - the budget office report tell us that essentially all of the upward redistribution of income away from the bottom 80% has gone to the highest-income 1% of Americans. That is, the protesters who portray themselves as representing the interests of the 99% have it basically right, and the pundits solemnly assuring them that it's really about education, not the gains of a small élite, have it completely wrong", Paul Krugman in the New York Times.

Today, the ability to broadcast a message, gather support for a movement or bring investors to a cause has considerably changed for the better. People are able to communicate and diffuse messages effortlessly and with very low costs. To entrepreneurs, this is a fundamental change that opens the door to new and exciting opportunities.

Start-ups and small and medium enterprises, face a paradox of a key success factor. Marketing spending is critical to obtain a much needed visibility, namely when commercializing an innovative product or service, however tight financial constraints leave very little investment to service this strategy. Also, with inexperience frequently come minor miscalculations in expenses or revenues which can prove determinant in cutting costs in apparently non-prioritized activities as marketing. This can lead to a vicious cycle in which smaller revenues provoke cuts in promoting sales, which in turn lead to decreased revenues. Small business owners and start-up entrepreneurs look for low-cost marketing tools to promote their products and services in creative ways.

Of all the interviews conducted with the start-ups for this research, no single definition of affordable promotion strategies appeared consistently, ranging from strategies that are overall inexpensive in cost, to marketing investments that represent a small percentage of total spending or strategies that are cost effective and boost sales more than proportionately to the spending. These companies are typically bootstrapping (companies that are trying to survive a launch at minimum operational costs and maximum revenues and profits) and will search for marketing options that are effective and low-cost.

These entrepreneurs also state that on launch of a company, it is quite relevant to communicate broadly and announce the new product or service, but that the emphasis must quickly switch to relationship marketing and converting informed potential customers to buyers. Again the focus is on early revenues and profits to ensure minimum scale and ultimately survival. They see marketing as a multi-faceted social engagement in a strategic continuum beginning from the very first steps, even prior to funding. Naturally the connection to traditional marketing media is a requirement, but the bootstrapping strategy frequently leaves this out for a further, sounder revenue state, development stage of the business.

Crowdfunding provides the entrepreneur with a listening audience of sophisticated investor/consumers that wish to be a part of the new product or service. This tool has proven to not only be an effective fundraiser, but also a highly efficient marketing and promotion delivery channel. It was born in the groundswell and it serves the purpose of creating channels for the easy transfer of resources, funds and projects. Entrepreneurs are able to engage with this audience without having to invest in any initial advertising. Several crowdfunding platforms such as PPL only charge a fee upon successful funding, with no upfront costs. The main buzz around a project in crowdfunding comes from that groundswell exercise, mostly through word of mouth or "word of mouse" (social networking). Very often this results in free coverage by traditional media.

Windowfarms[29] is a good example of project a successfully funded in the crowdfunding platform Kickstarter. Referred to earlier as having initially set a target of $50 000 for producing the product in China, they suggested a further goal of $200 000 for producing it in the US, so helping "to keep the environmental footprint of our product low, reduces supply chain complexity, and supports local economic growth," according to Shivani Ganguly, the Chief Operations Officer of Windowfarms. In order to achieve this second target, they would require a much higher sales volume and correspondingly enough coverage and promotion to attract such a crowd of investors. On the 7th of December of 2011, Windowfarms concluded their crowdfunding project, having raised $257 307 from 1 577 investors. A critical contribution was the strong support from other media forms that were attracted by their participation in Kickstarter and so provided good coverage of their online petition. This coverage in traditional media would otherwise not exist or at least happen at a very costly investment. Windowfarms was covered in Gizmodo[30], Fast Company[31], Treehugger[32], Inhabitat[33] and Forbes[34]. This media

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[29] http://www.kickstarter.com/projects/windowfarms/learn-to-grow-and-share-with-new-windowfarms

[30] http://gizmodo.com/5860545/this-gorgeous-mini-hydroponic-farm-turns-your-home-into-pot-and-produce-heaven

[31] http://www.fastcodesign.com/1665498/wanted-the-first-windowfarm-kit-from-a-pioneer-in-micro-gardening

[32] http://www.treehugger.com/green-food/windowfarms-now-available-clumsy-people-short-attention-spans.html

coverage was determinant in attracting many potential investors to their project, having resulted in a strong supportive community from as far away as Austria and Australia. This groundswell tapping strategy generated enough evangelists for the project, at zero cost, thus enabling a very strong upfront marketing strategy, which was critical in ensuring this entrepreneur was enormously successful and able to launch a full-fledged enterprise with upfront customers, revenues and profits guaranteed, including all the necessary viral marketing investment.

Similarly, at PPL, projects like Bubblenet, Patagonia Luso-Expedition, Formiga Juju and My Tea Break benefitted from the opportunity of large scale exposure through the participation in the first International Crowdfunding Event in Portugal[35] with the presence of the two top equity based crowdfunding platforms globally (Crowdcube and Symbid) as well as PPL themselves. The event attracted an audience of over 450 attendees and was also webcasted to the world. These projects on their own would struggle and require significant investment to achieve such a level of exposure. Subsequent to the event, all the projects attracted further media attention in the form of television interviews and traditional media (newspapers and magazines) involvement. Although most projects were quite localized and did not manage to explore fully the international visibility, they also benefitted to exposure at reference international media aggregators such a Crowdsourcing.org[36].

All this project promotion and marketing actions provided very critical exposure and messaging in a broad scale, critical to the success of the projects but still resulting in zero cost investment from each of the projects.

Other than the overall marketing effect of participating in a crowdfunding campaign, the process of fundraising via this tool itself has powerful educational marketing and consumer behaviour insights that force an entrepreneur to quickly progress through this learning curve.

In the research conducted by Ordanini et al. (2010), where several interviews were conducted and data analyzed regarding representative crowdfunding platforms globally, a trend was verified in a project's funding lifecycle through this method. At PPL through the successful finance of 6 projects (as of January 2012) and several others in the lifecycle currently, the same trend is already confirmed. Figure 2 illustrates this trend and the rationale follows.

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[33] http://inhabitat.com/window-farms-lets-green-thumbs-grow-fresh-veggies-indoors/
[34] http://www.forbes.com/sites/daniellegould/2011/12/07/windowfarms-raises-230k-on-kickstarter-to-manufacture-new-system-locally/
[35] http://www.ppl.com.pt/pg/evento-28
[36]http://www.crowdsourcing.org/editorial/lisbon-hosts-first-portuguese-crowdfunding-event/6919

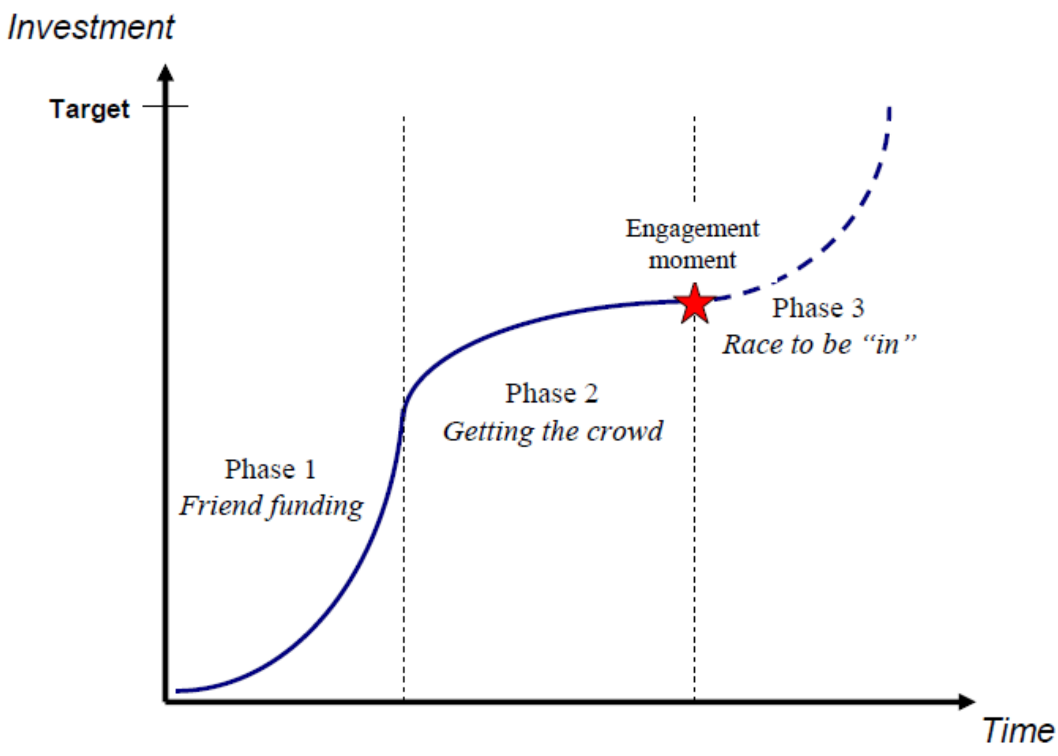

Figure 3: Typical Path of a Consumer Investment via a Crowdfunding Platform

Source: Ordanini et al (2010)

In this lifecycle, the first phase reveals an important flow of support and investment up to approximately half of the project's target finance request. This accumulation is rapid and occurs mostly through the support of individuals or organizations that are closely connected to the project or the network of the promoter of the project.

This is the "Friend Funding" phase and requires some but not extensive investment in promotion, communication and marketing, as the natural excitement of the new project and the social networking capability of the founders generally suffice to attract the quick and relevant support.

Achieving the target is a much more challenging task and the second stage represents the major hurdle that determines success of the finance operation. In this stage, although the increment in contribution is not significant, it is determinant in reaching the "Engagement Moment" after which, once more, through very little effort contribution comes steadily. At this second stage it is where the promoter appeals to the "crowd" and requires gathering critical support from investors that are not in his close network and are unrelated to the project. Typically these investors seek to purchase a reward or wish to contribute to a cause that's inherent to the project (can be social or not, with local impact or even just somehow related to an area of interest). Investors that are attracted in this phase can contribute with any amount and if the rewards are appealing enough and strategically set, accompanied by a relevant message, they can contribute with significant amounts.

The primary reason of failure of a crowdfunding project is the inability to trigger the crowd buy in process. A few projects (< 50%) reach the “Engagement Moment”. Once reached, a chain reaction is triggered where investors then wish to become a part of the endeavour and see it as a last chance to participate. In this final stage, just a few strategic messages conveyed in appropriate channels to the investor target suffice to reap the investment required for full finance success. Again in this phase, investors are mostly individuals with no original connection to the project that have been following or got word of the potentially successful project that is close to its end. A “race to be in” ensues where people speed up their investment understanding that it is a last chance to gain access to a project that will no longer be available in the short term. Closely related investors may also participate, particularly if the project requires a final push.

Due to its criticality and augmented challenge, phase 2 investors are the preferred target of both project owners and a platform as PPL. Investors that are not necessarily connected to the project, that are willing to contribute to a cause or invest/purchase a reward and that are able to support with significant amounts are a strategic target that will contribute to the success of a project. Communication and promotion of one’s project to these investors is determinant to ensure successful funding.

Some of the typical groundswell tools to listen to your crowd, talk to it and finally energize it to join and invest in an entrepreneur’s project include low-cost marketing tools as Search Engine Optimization, email marketing, comment marketing, community building, blogging, video posting, forum active participation and general viral promotion of word of mouth. Crowdfunding platforms such as PPL offer the connections to all these marketing tools as a standard service at no cost, thus enabling a critical strategic tool of marketing and promotion to early stage entrepreneurs and helping them succeed at their endeavour to launch and grow new ventures. Furthermore, the media exposure these platforms themselves benefit from is extensible to the projects that participate in them, at no cost, thus providing an added promotion capability which proves to be of critical value add for the entrepreneurs involved.

3.7. On pricing, entrepreneurship and crowdfunding

A most challenging but relevant issue an entrepreneur must tackle is how to price for his product or service. This becomes ever more challenging as the business is new (start-ups) and as the product or service is innovative and without any historical consumption data (demand and supply) to be leveraged on. There isn’t a single formula for a pricing strategy, but there are relevant guidelines. One of the key success factors for an entrepreneur to launch a new venture in a sustainable long term fashion is the ability to correctly determine and set the pricing strategy. Experimentation with pricing on a fully launched operation can be fatal and there seldom is a second chance to establish a positioning based on pricing.

Before understanding what role crowdfunding can play in this important strategy determination, there is first an acknowledgement of some relevant factors that affect this strategy such as knowledge of the demand curve and a customer’s willingness to pay, positioning and pricing role, cost of goods/services produced, critical environmental factors and the key objectives of an entrepreneur's pricing strategy.

A key factor in determining the right pricing strategy lies in understanding how this pricing will affect demand. Entrepreneurs need to do, at the very least, some basic market research to understand this and be able to conclude at a certain price what percentage of consumers will buy the product or service and at different prices levels, what percentages will purchase.

Likewise, the positioning of a product or service is strongly influenced by its price strategy. Common goods are priced differently to exclusive luxurious goods for example. Consumers do tend to believe strongly that one gets what one pays for. Also, market competitive positioning is highly dependent on how one determines price relative to potential competition.

The cost of goods to produce is determinant in that an entrepreneur must turn a gross profit (price minus cost of goods sold) to sufficiently cover his fixed overheads in order to turn a profit. The calculation of fixed and variable costs associated with the product or service requires being accurate as does the cost of goods sold (the cost allocated to each product or service delivered) and the fixed overhead (which is associated with the overall company size and operation and will remain stable unless the company changes dramatically in dimension). Too many entrepreneurs, specifically in the early stages of their ventures, underestimate these costs and find themselves struggling to get past the survival threshold.

Other key environmental factors include legal requirements affecting price or other external factors such as competitor reaction to an entrepreneur's price setting (will a price war be triggered?).

Equally relevant are the pricing objectives set by the entrepreneur. Whether there is a short-term maximization of profit objective or revenue maximization, or whether reaching economies of scale in the minimum time possible is fundamental, the pricing strategy will directly have an impact on these objectives. Other objectives could be a differentiation tactic or just maximizing the overall profit margin.

All of these factors and the objectives set will then allow the entrepreneurs to determine what type of pricing strategy to follow. These could vary as cost-plus a margin strategy, target ROI (return on investment) pricing, value-based pricing (where the price is based on the value created for and perceived by the customer) or even aligned to a perception of fair pricing.

Crowdfunding is a relevant tool to extract key information from the market regarding some of the critical factors affecting a pricing strategy. It can also play a key role in the objective accomplishment of the strategy, namely for enterprises that seek to prove their market relevance prior to further, complementary, rounds of traditional funding (business angels, venture capital, etc.).

The selection of rewards associated with a given price in a crowdfunding campaign is paramount to obtain some of this critical information. Carefully thought crowdfunding campaigns allow for the determination of many of the factors listed above and the testing of the objectives set with the pricing strategy.

The setting of different level prices for different quantities of the product or service or for different features or quality details helps the entrepreneur determine part of the demand curve he is facing. In the “Curly Cable for iPad and iPhone”[37] project in the Kickstarter crowdfunding platform the entrepreneurs are able to set prices for different quantities, where unit price decreases with higher quantities ordered. They are also able to set different prices for different types of consumers as in the case of high quantity orders typical for online resellers. When in such a case, they have more than 500 investors interested in their product (and consequently have far overcome their initial funding target), they are able to prove the general public demand for such a product and to plot a relevant demand curve for the product, given the different price options and different types of consumers (sales models of business to consumer and business to business).

Slight variations in product quality or features also allow testing for relative demand. By pricing differently the PDF version of a children’s book with no illustrations from the physical full version, the author of “Formiga Juju”[38] project in PPL was able to ascertain consumer preference for electronic cheaper versions at a given price, relative to the full physical version of the book. Equally relevant, by pricing the same for 2 copies of the physical book or for 1 copy of a high quality limited edition version, she was able to determine the comparative demand for the 2 types of editions and also to extract considerable value of those customers that value access to the limited edition concept and a differentiated product (available only through this crowdfunding campaign). This is also a good example of how a more luxurious good was correctly positioned as such by using not only the appealing description but the price reference that indicated it was worth 2 of the regular quality version books.

The author of “Formiga Juju” in PPL Crowdfunding platform from Portugal is an author who aspires to become an entrepreneur of her own works. However, some inexperience in the field of management led to minor miscalculations of pricing strategies, namely the costing structure associated with the production of the book. As is her intention to further the experience and produce other stories and books, the crowdfunding experience was critical in helping her determine accurately this cost structure and understanding what were exactly her overhead costs and fixed and variable costs. Prior to mass scale production of the books and price positioning in the market, the crowdfunding project allowed for determination of these cost structures with minimal financial risk. She is now ready to venture into new projects with deep understanding of all variables that go into the production costs.

Crowdfunding also plays a critical role in achieving an early entrepreneur’s pricing objectives. When the need is for short-term revenue maximization, rapid achievement of economies of scale is bolstered by pre-sales enabled through crowdfunding, prior to any significant financial commitment to the project. Indeed a minimum efficient scale for pre-project launch may be defined and set as the crowdfunding target to be reached, by setting price accordingly and testing for quantity selling outcome. As a simple example, if an entrepreneur decided to sell uniquely designed watches, he may calculate that of a certain design, nothing short of 300 watches sold at unit cost plus a 5% margin will suffice to venture into such an endeavour.

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[37] http://www.kickstarter.com/projects/1117194589/curly-cable-for-ipad-and-iphone
[38] http://www.ppl.com.pt/investment/a-formiga-juju-na-cidade-das-papaias-1017

Crowdfunding allows him to launch such a project where that design is offered at that value. If he obtains the 300 investors or more, he is ensured the minimum efficient scale for his production. This maximization of short-term revenue, even prior to project launch may be critical in establishing an important market share and showing higher revenues, at a small profit or even a loss, proving that the company will likely reach profitability. For example, amazon.com delivered very high revenues for several years until finally showing a profit. Its market capitalization was a sign of the investor confidence in the generation of relevant revenues and determinant in obtaining subsequent rounds of more traditional funding. Crowdfunding is typically not an end in itself, regarding funding, but may be the key to launching a credible operation that is attractive to other investors further down the line of financing needs.

Short-term profit maximization goals may not be the ideal pricing strategy for achieving long-term profits. However, bootstrapping entrepreneurs (companies that are trying to survive a launch at minimum operational costs and maximum profits) often have cash flow as the primary concern. Smaller companies, in start-up mode, typically resort to this strategy, to enable self-sustainability as early as possible and also because it attracts venture funding in achieving profitability as early on as viable. A critical factor to allow for short-term profit maximization is the ability for a firm to extract the maximum value of consumer surplus possible. This translates to the ability to price as close as possible to a consumer's willingness to pay which may vary in time and so discriminate pricing to these different consumer values.

In Belleflame et al (2011), "compared to traditional funding, crowdfunding has the advantage of ordering an enhanced experience to some consumers and, thereby, of allowing the entrepreneur to practice second-degree price discrimination and extract a larger share of the consumer surplus. Since the consumers who pre-order are those with a high willingness to pay for the product, these will generally constitute the bulk of the "crowd". However, an entrepreneur is generally unable to identify these consumers. The entrepreneur must then use some self-selecting device so as to induce high-paying consumers to reveal themselves. The sort of 'community experience' that web-based crowdfunding offers may be a means by which the entrepreneur enhances the perceived quality of the product for the consumers who agree to pre-order it. In this sense, crowdfunding appears as a form of menu pricing (i.e., of second-degree price discrimination). The disadvantage is that the entrepreneur is constrained in his/her choice of prices by the amount of capital that he/she needs to raise initially to fund production: the larger this amount, the more prices have to be twisted so as to attract a large number of crowdfunders, and the less profitable the menu pricing scheme. The model highlights the importance of community-based experience for crowdfunding to be a viable alternative to traditional funding. If the entrepreneur is not able to create such benefits, no consumer will find it worthwhile to pre-order the good, unless a discount is offered. However, crowdfunding then becomes less profitable compared to traditional funding. Also, the analysis shows that crowdfunding is the most profitable option only for lower levels of finance. Indeed, crowdfunding yields higher profits only for small amounts where the entrepreneur faces no (or limited) constraints in his/her price setting between the two types of consumers while still securing enough up-front financing. As the amount required becomes larger, the entrepreneur is forced to distort more the prices so that more consumers are willing to pre-order and thus the entrepreneur can collect up-front more money. This in turn reduces the gains from price discrimination.”

Initially seen as merely an alternative financing tool, crowdfunding can in fact play a substantial role in the pricing strategy of an entrepreneur, supporting with demand determination, positioning setup, cost structure validation and achieving critical pricing objectives. As pricing is one of the most critical success factors for new ventures and successful entrepreneurship in general, crowdfunding may thus play a significant role in enabling quick and cost efficient learning and setting of adequate pricing strategies.

4. Discussion and Concluding Remarks

Throughout this paper and now in the concluding remarks, we have not addressed directly, but it is our conviction that a clear answer has been achieved for our key research question.

Key Research Question: what role can crowdfunding play in fostering entrepreneurship?

Key related research questions: what impact and in what context does this role affect entrepreneurship? How significant is that impact?

The answer is complex but unequivocally positive. Crowdfunding has a critical role to play in the promotion of entrepreneurship and the tool is set to change the way we see finance and the involvement of consumers and investors today. The impact is very significant which is why it leads notables as president Barack Obama to defend equity Crowdfunding as a key solution to creating much needed new enterprises and jobs.

A problem faced by entrepreneurs at the beginning of their entrepreneurial initiative is to attract outside capital. Crowdfunding has the potential to become an important alternative method of raising funds for start-ups (e.g., Schwienbacher and Larralde 2010). Indeed, it has the potential of becoming a mainstream method for such purpose. Entrepreneurs require access to tools and resources that allow them to competitively push new ideas and ventures into the marketplace. As we have seen, crowdfunding can have a positive impact in critical success factors for entrepreneurs such as in early model validation, pre-sales and pre-ordering, in reducing equity dilution whilst obtaining the required funds in incremental rounds, in harnessing the contribution of the end user, partnering with him to innovate, design, promote, finance and launch the new venture. It can also support in a low cost promotion strategy with sophisticated marketing online tools and can have a fundamental role of support in the determination of the demand curve for the product or service to be delivered, allowing for upfront optimization of the pricing strategy to extract maximum value from consumer surplus.

The satisfaction derived from all involved and the sense of accomplishment with a visible impact has been extremely rewarding to the owners of crowdfunding platforms such as Crowdcube, Symbid and PPL. Most of the projects funded thus far would not have found their way out from the drawing sketches, so the most relevant lesson has been that the ability for the crowd to validate, curate, support and then own, promote and finance an initiative is something not to underestimate. It is also a great responsibility for a platform to intervene enough to ensure trust, efficiency, security and growth of such a mechanism, but understand that such movements are desired and driven by the crowd and ultimately belong to it.

This model, however, is not yet a substitute for traditional methods of funding such as business angel investment, venture capital, private equity, loans and stock-market initial public offerings. The more traditional forms of raising capital will continue to be the most adequate solution for the majority of financing requirements. Collective finance through social networking has an important role in our current society already, and crowdfunding can become the privileged solution for seed, pre-seed and even mid-stage entrepreneurial endeavours.

As a new trend in global finance, this concept has yet to be fully understood and explored. It shows promising positive potential impact, which is why it already proliferates so strongly across the world and why Europeans have adopted higher impact models such as equity-based crowdfunding and Americans currently seek to legislate and open the door for this model too. However, crowdfunding is as yet fully researched and understood, it presents relevant risks and requires at best some standardization and criteria for evaluating a platform's performance and ideally some form of regulation, common across nations, to guarantee investor protection, intellectual property rights, prevent online piracy and other illegalities such as money laundering.

4.1.Implications and the Future of Crowdfunding

Ordanini et al. take a step further in researching the role of crowdfunding platforms in the market. Crowdfunding firms are "network orchestrators", they create the required environment, organization and enablers to allow for resource exchange and integration among all intervenients. The authors go further and extend the rationale to specify that crowdfunding companies orchestrate a certain type of network, where the customer/financier plays the central role and not the actual firm. Such firms have optional orchestration modes, where they are able to intermediate where previously there was no intermediation. This typical in a loan based crowdfunding model with peer-to-peer loans. Alternatively these firms can replace a standard intermediary, as in the case of the music industry where the crowdfunding platform replaced the biased label producer or they can desintermediate the entire medium by cancelling the participation of a previous service provider. Trampoline[39] is a closed circuit crowdfunding platform where only accredited investors may participate. In their words, "Instead of raising money from venture capital firms Trampoline is using a technique called "crowdfunding", raising smaller stakes from a community of smart private investors." Trampoline has succeeded in desintermediating the Venture Capital firm in their own finance process.

As per Ordanini et al., "crowdfunding is thus a phenomenon that has the potential to significantly alter the roles of service organizations in value networks."

President Barack Obama is known to defend the approval of a new bill exempting financial operations, under certain rules, from the standard IPO (Initial Public Offering) requirements due to the estimated potential of this method of finance to generate considerable employment over the next five years through the creation of new firms.

These online collaboration tools are set to change the spectrum of entrepreneurial development and start-up firm generation. Exactly how remains to be understood and

[39] http://crowdfunding.trampolinesystems.com/

researched in order to not only manage but also promote it and extract the strongest benefit and potential from it. Lawton (2010) goes so far as suggesting a "perpetual motion machine of innovation" can be explored through crowdfunding. Rather than criticizing how realistic this vision is it's relevant to understand that we are in a position to push the boundaries of entrepreneurship creation and armed with an exploring spirit complemented with the required safeguard for the intervenients in the model, rather than a sceptical one, we are ready to jump to the next level of financial democratization globally. Lawton (2010) acknowledges that such a "machine" in the thermodynamics scientific field is not possible. But in financial terms, he provokes the reader by imagining an investment fund created to be utilized only through crowdfunding and in new, innovative technologies and firms. By assuming this funds performs well and is able to generate returns which are then channelled back into the same type of investments. Lawton (2010) call this "Venture Capital meets Crowdfunding" and he pictures a nation (his book is dedicated to the first nation to fully grasp and explore the potential of crowdfunding) where this method would be utilized to manage a nation's Research and Development budget. This fund, being profitable, requires no new funding through other means as taxation. In his words "this is the perpetual motion machine of nationally focused innovation. Fully transparent, accountable, and expressive of the collective will of the people it represents."

In the interviews conducted, we have also found a belief that crowdfunding is not only a tool to channel funds to Entrepreneurs but has the potential to become a marketplace for funds, resources and projects. For example, if an entrepreneur was seeking 50 000 € funding, they know that a part is for an accountant's work and another part is for a designer to develop their image. Also from experience, they know such professionals who are willing to contribute with this work, instead of funds, and still are entitled to earn a share of entrepreneur's equity. A crowdfunding platform can thus become a marketplace that provides a financing solution and a return on investment in the form of equity and / or revenue sharing. It could also allow investors to pledge not just cash, but resources (skills and labour) and promotion drive (if one promotes a project in a significant network and from that effect the project gains other investors, one should be remunerated for this promotion effort). This functionality can be enabled in a marketplace offering full engagement possibilities like virtual meeting rooms, ratings and reviews, referrals, forum, online help assistance and other social networking viral tools.

4.2. Limits of this study and related suggestions for further research

The theme under study, the technology involved and the sociological implications are all very recent in history and have very little research and study applied. This in itself is the most relevant limitation. Although this thesis reports plenty of facts and practical examples of applications of crowdfunding exercises in a series of industries and firms, the fact is the available statistics are still insufficient to establish full causal relations with enough reasonable certainty and from there formulate hypothesis that are applicable in a more generalized fashion. Mentioned below, the risk of default (a project that is crowdfunded and then does not deliver according to promise) in all platforms across the world is less than 1%. Although these are extremely positive results, in the case of the PPL platform, for instance, that statistic is 0% it would take only a few projects going sour to raise the statistic to an exceptional level so early in the history of collective finance online. One of the main reasons a lot of platforms go to extra efforts to execute some due diligence and ensure such cases are minimal to non-existent, at no extra cost to its investors or project promoters, is precisely to ensure these statistics remain at impressive low scores and so the prove the potential and benefits of such a mechanism.

This alternative method of finance also poses some relevant risks that require addressing. This study can and should be expanded by researching these risks and exploring possible mitigation actions, consequences and other risk management options. When we look at the risk of default from a project, the existing statistics since 2005 (when crowdfunding in its current form appeared – collective finance has existed for a considerable time, albeit not in a social networking environment) are revealing. It's common understanding that the transparency and collaborative effect of this mechanism as well as the natural follow-up on the project by the crowd create strong incentives that keep default rates at extraordinary minimums. A research by Deutsche Bank in 2007[40] reveals this tendency where default rates are significantly lower than those existent in the case of bank loans. The personal relationship established between investor and project promoter, the common interest in the final outcome and the fact that there exists no financial intermediary in the process are some of the reasons that explain this phenomenon. A comparative among some platforms reveals default rates as low as 6%[41].

Another limitation, among all the virtues of a collaborative system is simultaneously one of the long standing reasons for governments to require providing public services. Such a system will select interesting and innovative ideas that might otherwise not come off the paper they were thought of in and turn them into implemented projects with palpable outcomes. However, many required innovations or impactful projects may not receive enough attention from the general public to be funded and launched into new enterprises. This is one of the downsides of all things communal. Only the ideas generally approved by a community are developed and turned into full fledge offerings. This limitation becomes evident and easier to understand with the examples given on crowdfunding for scientific research. Several relevant and much needed projects have been financed and are now in the stage of being developed. But there is at least an equal number of projects, apparently less relevant or understood to the untrained eye, therefore less supported and eventually not financed, that have just as much relevance, if not more, to human kind and any community therein. One may argue that better communication and promotion is required in such cases, but how much communication and promotion is enough to convey to the general public that investing in some exquisite biotechnology research, with a low probability of success and possibly very relevant benefits but only a decade from now, is a good investment opportunity?

Similarly, in the "velocity of innovation" concept that Lawton (2010) details, the results may be quite incongruous. "With the increasing connectedness we enjoy, the idea supply will keep

[40] http://www.dbresearch.de/PROD/DBR_INTERNET_DE-PROD/PROD0000000000213372.pdf
[41] http://investmentinstartups.wordpress.com/crowdfunding-2/

growing, although the economically stimulating “velocity of innovation” may be very incongruous across various countries. If the nations which enriched themselves with the spoils of leading previous industrialization, are not quick to adapt to the new revolutionary forces, than history may well record a provocative irony; newer developing nations may effectively be “mining” or otherwise exploiting the “idea supply” resources of previously developed nations.”

When we analysed the potential of pre-ordering in crowdfunding we also understood from the works referenced that there exist limitations to this potential. Yang Chu and Zhang (2010) reveal “We also find that while pre-order benefits the seller across the board, the relative gain is most pronounced when a mass pre-order strategy is viable (the normalized margin is not too low) and retail alone is inadequate to realize the profit potential (the margin is not too high either).” Similarly, Li and Fuqiang (2010) alerted to the fact that “contrary to conventional wisdom, we have demonstrated that advance demand information can be detrimental to firms when facing forward-looking consumers: (1) It may hurt the seller's profit in the pre-order season through its negative effect on the pre-order price. (2) In the presence of price guarantees, it can also hurt the seller's profit in the regular season through its negative e ect on the regular-season demand. Due to such negative effects of advance demand information, the seller needs to carefully decide whether to accept pre-orders, and whether to provide price guarantees with pre-orders. We find that the seller's strategy choice depends critically on the relative market sizes of the two types of consumers.”

Naturally any of these pose relevant opportunities for further research, in pre-order the different authors point to the possibility of introducing more sophisticated consumer valuation models and in the default rates risk a thorough research into the specific cases, causes and motivations would surely reveal important facts to support the extension our understanding of these. This applies to pre-orders and to all of the 7 factor of entrepreneurial promotion through crowdfunding, further research will improve our understanding of these phenomena and enable better extraction of value from them whilst mitigating and minimizing the inherent risks.

This study did not explore further other risks like intellectual property rights, investor protection and interoperability across platforms. Further research is advisable in this field to determine all the possible consequences of negative results derived from these risks as well as important mitigating actions to put in place to avoid the risks becoming issues.

One of the critical success factors in such methods of obtaining finance for entrepreneurs is also one of its risks if managed inappropriately. The more a project owner exposes himself and his idea, the better chance he has of attracting investors to his cause. Disclosure of detailed information and potential of his venture will result in raising the attractiveness of the same to potential investors. Unfortunately, that same disclosure and transparency may make him liable to intellectual property rights infringement. We live in an open source world and there is a current debate whether such protection makes sense. However, while the debate continues, an entrepreneur must, nevertheless, take precautionary actions to avoid being easily copied. The crowdfunding platform owners we interviewed all confirmed that they perform some sort of offline advisory role to project candidates where they advise them to reveal enough to entice his potential investors and show the true potential of his idea, but he shouldn’t reveal too much that would allow the idea to be copied and implemented prior to his launching. There will be a shady zone between these two areas, and the challenge there remains with the entrepreneur. Another relevant fact raised in the interviews is that a natural risk mitigation setup exists regarding intellectual property rights. An entrepreneur stands a good chance to implement a new venture successfully if he possesses the skills and knowledge to do it, the motivation and energy to execute it, the actual idea concept clearly thought out and the financial means to do so. When launching a campaign through collective finance, the entrepreneur is typically missing only the last part, the funds to do so. In this scenario, it is extremely difficult to copy or anticipate the entrepreneur's idea and launch a venture through intellectual property infringement over that individual or group. To copy an idea is not too difficult, to replicate the conjunction of critical success factors all together at a certain period in time is much more complex.

With the development of crowdunding the interoperability across different platforms gains relevance. Projects should be able to easily migrate from one platform to another or integrate sub-projects across different platforms. A part of a project can raise funds via one platform while another part of a project (be it complementary or independent) through another platform. For the purpose it becomes very important to have standards, both technical and process related, across platforms, to ensure seamless integration across. This study can also be extended and improved by exploring this implication and understanding the risks involved with the lack of interoperability and the potential of having it broadly available and implemented.

5. Acknowledgements

The authors are grateful to the CEO's of the Crowdfunding platforms interviewed (Korstiaan Zandvliet and Darren Westlake), to all the start-ups and their founders that contributed with insights and knowledge to this work and indirectly to all researchers who have made their work available to learn and build on, as is our wish that this one may serve the same purpose.

The authors are particularly thankful for the guidance and overview of Professor Pedro Oliveira from Universidade Católica Portuguesa.

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