

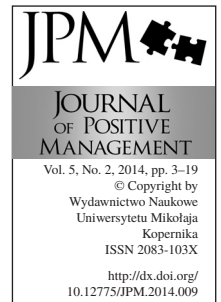
RADICAL INNOVATION AND EARLY STAGE FINANCING GAPS: EQUITY-BASED CROWDFUNDING CHALLENGES

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Abstract

Innovations and innovativeness in a business context is considered as one of the key determinants of competitive advantage due to its productive role in driving new markets and revenue growth as well as other value propositions. The success of this economic transition will pass by a context favorable to the innovation in general and to the entrepreneurial innovation in particular. Early-stage start-ups financing face particular difficulties. We focus on current challenges concerning entrepreneurial radical innovation financing. After presenting the radical innovation idea, the linear chain of financing and the equity gaps, our purpose is to discuss the role of equity-based crowdfunding, a relatively new form of informal financing of early-stage ventures. The main question of this explanatory research is to discuss if crowdfunding can help to bridge the equity-gap in financing innovative projects and under which conditions it could be possible.

Keywords: radical innovation, uncertainty, early-stage financing, crowdfunding, equity-gap.

Paper type: General review

1. Introduction

Innovations and innovativeness in a business context is considered as one of the key determinants of competitive advantage due to its productive role in driving new markets and revenue growth as well as other value propositions. As innovation is primarily distinguished by its unique qualities, it means it is something better or completely new from that which currently exists. Taking this into account we can describe an innovation as a form of positive change. Accordingly, this allows us to situate an innovation within the field of positive organizational scholarship that is

an umbrella concept used to unify a variety of approaches in organisational studies, each of which incorporates the notion of ‘the positive’ (DeGraff, Nathan-Roberts, 2012). As positive organizational scholarship seeks to understand all the positive states, dynamics, and firm’s outcomes, innovations as the results of exploitation company’s resources and abilities undoubtedly suit to this concept. Among both forms of innovation, incremental and radical, the last one seems the most susceptible to offer this competitive advantage so expected at the level of firms.

The success of this economic transition will pass by a context favorable to the innovation in general and to the entrepreneurial innovation in particular. Early-stage start-ups financing face particular difficulties. Such enterprises have little or no collateral to offer and conventional financial intermediaries are not ready to participate at the first stages of their development. Public funding is thus typically needed in the earlier stage, of the innovative process (R&D). The well-known chain of financing shows the various funding partners along the innovation process.

The aim of our paper is to focus on current challenges concerning entrepreneurial radical innovation. In a first part, we justify this choice through definitions of innovation and evidence of the importance of innovation at a macro-economic point of view. In the second part, we present the current external equity financing options within start-ups and new challenges for European countries considering a linear innovation process. Our purpose is to discuss the role of equity-based crowdfunding, a relatively new form of informal financing of early-stage ventures. The main question is to discuss if this category of crowdfunding can help to bridge the equity-gap in financing innovative projects and under which conditions it could be possible. We think that the exponential development of crowdfunding in some countries contributes to the development of a new type of investor in line with the collaborative consumption and a more positive finance. In the last part we conclude by discussing the limits of our analysis and we suggest new researches.

2. Radical innovation in an entrepreneurial context

The literature includes a number of articles that focus on the nature and importance of creating innovations. There are also several approaches to define innovations. The first who defined the term innovation and pointed out its importance for the economic development was J.A. Schumpeter. According to his approach an innovation is defined as (Schumpeter, 1960):

- introduction of a new product, that is one with which consumers are not yet familiar, or of a new quality of a good;
- introduction of a new method of production, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially;

- opening of a new market, that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before;
- conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created;
- carrying out of the new organization of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position.

Schumpeter recognized innovation as the critical dimension of economic change. He argued that economic change revolves around innovation, entrepreneurial activities, and market power.

In the contemporary literature innovations are interpreted in narrow or wide sense. In narrow sense an innovation is a change in production methods or products, based on new or not exploited earlier knowledge. On the other hand, innovation in wide sense is understood as a change resulting from exploitation of acquired knowledge (Schumpeter, 1960) Among the authors who promote such approach to define innovations there are P. Drucker and Ph. Kotler. The definition that seems to capture the essence of innovation very well is the one proposed by OECD. According to it, an innovation is an iterative process initiated by the perception of a new market and/or new service opportunity for a technology-based invention that leads to the development, production as well as marketing tasks aimed at commercial success of this invention (OECD, 2005).

Summing up, we can describe innovation as the application of new solutions which meets new requirements, unarticulated or existing market needs. It is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to market.

a. The idea of radical innovation

After defining the nature of innovation it is relevant to explain the nature of radical innovation and distinguish it from incremental one. The radicalness of an innovation refers to the degree to which it is new and different from previously existing products and processes. Incremental innovations may involve only a minor change from (or adjustment to) existing practices. In other words, they are orientated to provide new features and benefits to already existing technology in the existing market (Garcia, Calantone, 2002). Such kind of innovations aim to improve the systems which already exist, making them better, faster or cheaper.

In contrast, radical innovations, in the literature called also breakthrough innovations, provide something new to the world that we live in by uprooting industry conventions and changing customer expectations in a positive way.

Based on literature review, we can point out many ways to define radical innovation. But there is considerable agreement among writers and practitioners on the view that the nature of radical innovation is based on the magnitude of improvement in performance and a change in technology. Radical innovation is a kind of innovation which embodies a new technology that results in a new market infrastructure (Colarelli O'Connor, 1998; Song, Montoya-Weiss, 1998). In other words technological knowledge required to exploit radical innovation is completely different from existing knowledge and the result in a product is so superior that existing products become noncompetitive. So we can say that radical innovations have strong impact on two dimensions. The first is the market. The firm that introduced such innovation offers completely new benefits for customers, comparing to the previous product generation in the category. The second dimension is the company. Due to introducing radical innovation its ability to create new businesses significantly grows. A significant issue is that introducing radical innovation results in discontinuities on macro as well micro level. A particular innovation which causes discontinuity in the world, industry or market level, will also cause discontinuities on the company and customer level. If the new industry appears as the result of introducing radical innovation (for example the World Wide Web), new companies and new customers emerge for this innovation too. In contrast, incremental innovations do not result in macro discontinuities which are seen only in case of radical innovations.

Another relevant issue while analysing the nature of radical innovation is the fact that it is not addressed a recognized market demand. Instead, radical innovation creates a demand which previously was unrecognized by the customers. This new demand cultivates new industries with new rivals, distribution channels as well as new market activities. In other words, radical innovation can be described as the catalyst for the emergence of new markets or new industries (Garcia, Calantone, 2002).

Given the fact that radical innovation is something completely new to the market and to the firm, we must stress that it is characterised by uncertainty [1] that accompanies their potential outcome. They are described as having long-term (typically 10 years or more) development time and requiring lots of money (millions of any currency such as dollars or euros) of investment.

While discussing about the nature of radical innovations, we must emphasize the issue of R&D expenditures related to them. First very important source of the uncertainty perceived by entrepreneurs is the fact that the conduct of R&D in the high tech sectors has become hugely expensive. The second source is the fact that the outcome of R&D expenditures is fraught with financial uncertainties which derive from several reasons. First of all, expenditures on scientific research may fail to produce new knowledge of some useful potential. Secondly, even if such new knowledge will be the result of R&D activities, it may never lead to a new

product attractive for the market. The third significant issue generating uncertainty is linked to the question: How well such innovative product will perform in economic terms? An example of such innovation is Concorde that was a magnificent technical achievement in terms of engineering design and speed but on the other hand it was also a financial disaster. The calculations prepared while the Concorde project begun suggested that 300 such planes should be sold in order to cover its development costs. But in fact only 16 planes were sold (Rosenberg 2004). Another great question that needs to be asked while analysing uncertainty connected with radical innovations is: How quickly the level of performance will improve thanks to such innovation and how quickly the cost of production is likely to reduce?

Another significant issue is how appropriable is a new product for the innovating company. This product appropriability refers to the likelihood that innovating company will be able to capture the profits which are supposed to be generated by this innovation. This mainly depends on whether such innovation is patentable. If it is not, there is a problem with possible imitation it by competitors who did not spend any money on this invention (Rosenberg, 2004).

There is also further source of uncertainty for spending money on radical innovations. Contemporary paradox is that one of the greatest uncertainties confronting new technologies is the possibility to invent even newer technology. Companies never know how quickly a new and superior product will come along from its competitor or as the result of introduction of completely new technology.

Concluding, it is indisputable that uncertainty is the most distinctive feature of any innovative activity in the word of highly industrialised economies. It is simply the consequence of the fact that we cannot predict how market will react and respond to the introduction of a new technology and products created through it. On the other hand, radical innovations are distinguished by the promise of reward they offer, which is both large in scope and also strategically important to the company in terms of their potential outcome (Colarelli O'Connor, McDermott, 2004).

The last significant issue concerning introducing radical innovations refers to entrepreneur himself. Typically radical innovation has been recognized as the domain of startup entrepreneurial ventures who rejects the processes and infrastructure of already established big firms in favour of flexible, discovery based approaches to commercializing new technologies (Eisenhardt, Martin, 2000; Colarelli O'Connor, McDermott, 2004). Today there is considerable agreement among writers and practitioners on the view that one of critical factors that determines successful development and commercialization of radical innovation is an entrepreneur. His persistence, vision and drive to get thing done in the face of doubters and the bureaucratic systems is a key factor causing that radical innovations happen even in large enterprises. In other words, people's passion and

unique talent for driving radical innovations seems to be one of critical elements in the whole mechanism of creating such innovations. Nevertheless, as pointed out in the second part of this paper, radical innovation can't refer only to the entrepreneur. Financing the pre-launch phase and especially the launching phase appears to be fundamental for radical entrepreneurial innovations, which means within start-ups.

In Table 1 the main features recognized as typical for radical and incremental innovation are presented.

Incremental Innovation	Radical Innovation
New to the firm	New to the world
Builds upon existing knowledge and resources	Requires new knowledge and resources
Exploits existing technology, utilises existing competencies and processes	Explores new technology, requires new competences, skills or expertise
Enhances existing organizational competencies	Destroys existing organizational competencies that lose their value
Low uncertainty and risk	High uncertainty and risk
Operates within the existing business model	Requires a change in business model
Relatively small change in performance	Step change in performance
Focuses on cost or feature improvements in existing products or services, processes, marketing or business model	Focuses on processes, products or services with unprecedented performance features
Improves competitiveness within current markets or industries	Creates a dramatic change that transforms existing markets or industries, or creates new ones
Perpetuates existing social practices	Necessitates social and systemic change
Is the lifeblood of innovation	Appears relatively rare

Table 1.
Main characteristics
of radical and
incremental
innovation

Source: elaborated
by the author based
on the literature
review: Stringer,
2000; Sorescu,
Chandy, Prabhu,
2003; Christensen,
Anthony, Roth,
2010.

b. Radical innovations and economic development

Today one often hears that innovation contributes to the economic prosperity and the ability to create and adapt innovations is one of the main factors affecting the economic development. The economists all over the world have long recognized innovations' central importance to economic growth. It is indisputable that in contemporary economy the ability to create innovations is the main determinant of firm's competitive advantage. Due to this, when the companies become stronger, also the regions where they are situated and then countries become more competitive and economically stronger.

As far as we consider technological changes and radical innovations it is necessary to stress that the technologies are the driving force of countries wealth. Developing and commercializing new technologies drives economic development by:

- creating new workplace (particularly in new industries),
- developing export of technologically advanced products,
- increasing the efficiency of production processes.

The importance of radical innovations for the development of national economies is proved by different sources. One of them is The Global Competitiveness Report that is published every year. It describes the competitiveness of the countries all over the world by using global competitiveness index that consists of 12 pillars and one of them is innovativeness. According to this document, the main source of competitiveness is created by technological innovations. In the report we can read “Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving human capital, all these factors eventually seem to run into diminishing returns. The same is true for the efficiency of the labor, financial, and goods markets. In the long run, standards of living can be largely enhanced by technological innovation. Technological breakthroughs have been at the basis of many of the productivity gains that our economies have historically experienced. Although less-advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, for those that have reached the innovation stage of development this is no longer sufficient for increasing productivity. Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge and move toward higher-value-added activities” (www.reports.weforum.org/global-competitiveness-report-2-12-2013, 10.11.2013). Thanks to radical innovations some small outsiders can be propelled into a position of industry leadership. Moreover, firms at the leading edge of radical innovations tend to dominate world markets and to promote the international competitiveness of their home economies (Sood, Tellis, 2005; Sorescu, Chandy, Prabhu, 2003). In the light of above mentioned, we can conclude that the role of radical innovations cannot be overestimated. They simultaneously drive enterprise’s success, market’s growth as well as nation’s economic development and that is why they are called to be the engine of economic growth.

3. Financing entrepreneurial radical innovation through crowdfunding

Many reports in Europe and in the USA point out young innovative start-ups face a lack of financing to continue their growth. The first point enables us to present the nature and stages of financing radical entrepreneurial innovation within a linear innovation process. Then we explain the “equity-gap” which gives the reality of radical innovative financing for start-ups in the world. Finally we point out the development of crowdfunding which could improve the situation and we discuss the conditions under which it is possible.

a. The Chain of financing: theoretical aspects

In his summary of the literature on entrepreneurial finance, Denis (2002), reminds us it is now recognized entrepreneurialism is, from one point of view, in its financing confronted by the same two fundamental problems of corporate finance: agency problems and problems associated with asymmetry of information. Only, these two problems are exacerbated during the creation phase. All sources of uncertainty reduce the possibility of accessing traditional financing resources (Ferrary, Granovetter, 2009). This paper does not discuss public funding of innovation and the links between public and private funding. We focus on external financing which should appear at different stages of the innovative process within a linear representation.

Financial institutions, as risk-averse agents, need necessary information to price their lending services to the borrower and to be able to ensure that the last respects his obligations. Because there is an asymmetry of information (adverse risk and moral hazard), banks can't adjust the price of their supply to the quality of the demand. The consequence can be loans on tough conditions or no loans at all for radical innovation projects. All these imperfections explain the problem faced by radical innovative project and the existence of a specific financial intermediation through venture capital funds. The innovation is characterized by specific assets. The theory of the pecking-order applies back to front because of a very high "credibility-gap". According to this theory developed by Myers and Majluf (1984), we suppose that sources of funding are chosen in increasing order by costs of intermediation and by costs of agency: the self-financing then the debts and only finally the equity financing. The first stream of financing is then very difficult to obtain. The innovative companies are brought to resort very widely to the financing by stockholders' equity. We find here the analysis of Williamson (1988) as for the relation between the nature of assets and their types of financing. Innovative startup firms are thus dependent on self-finance or, for larger projects, external equity.

Usually, within a linear representation of the innovation process, the chain of financing radical entrepreneurial innovation is represented as shown on Figure 1.

Since around 10 years EBAN [2], national associations of Business Angels and academics (Mason, Harrison, 1995; Paul et al., 2003; Freear et al., 2002), point out the role that informal venture capital (Business Angels, BAs) have to play and how they should be organized in order to fill the early-stage financing gap which exists between the 3Fs and the formal venture capital, the well-known "valley of death". As described by Deffains-Crapsky and Klein (2013) who proposed to describe the role of BAs and networks of BAs from the perspective of entrepreneurship theory and social network theory, the role of BAs in the development of innovation is an important, yet poorly issue. Moreover, in this

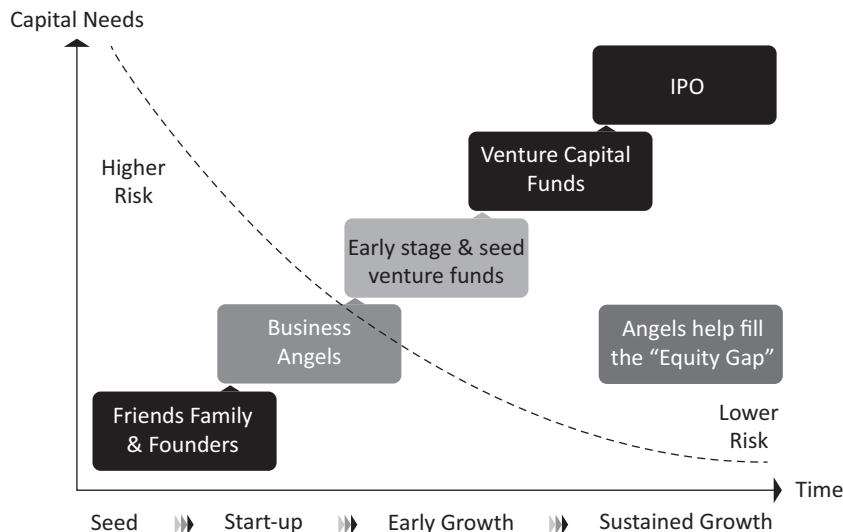


Figure 1.
The chain of
financing radical
entrepreneurial
innovation

Source: <http://www.eban.org/home/who-we-are> (10.11.2013).

traditional representation, each partner seems to have a specific role. This cycle of development which we have just described briefly is effective if all the links of the chain fit perfectly. In the following part, we are going to show that it is not the case and that another equity-gap appeared.

b. The reality of radical entrepreneurial innovation financing

Since about twenty years, a second break appeared within the linear chain of financing of innovation. More specifically, the fitting enters the starting up financed mainly by the business angels and the phase of growth covered by the formal venture capital, seems more and more fragile, the funds of venture capital preferring to finance the phases more downstream to the development of the projects. The appearance of the gap would have raise to the second half of the 80s according to Mason and Harrison (1995), and the reasons are diverse. These authors and others cite five different reasons.

The first one is due to the high costs connected to the management of the seed phase and the low profitability. The profitability of the participations in the phase of starting up would not be high enough to cover these costs. For Lipper and Sommer (2002), it is the big size of the VC funds who would prevent them from making small less profitable and very risky investments as the financing of start-ups. The managers of these funds have to make high and short-term rates of return in line with the expectations of their funders while the phase of starting up seems required more time. The second reason refers to the difficulty for VC funds to raise enough money with the different investors. Indeed, these

firms are only administrators of funds belonging to other investors (institutional or individual), the objective being to make profitable these contributions. The profitability proposed by these firms knew a first reduction in the late 80's, making scarce the suppliers of funds and raising the competition between the actors of the sector. A second reduction, after the Internet bubble of year 2000, dipped back the industry until 2005. Since then, a slow resumption seemed to settle down but the run-up was slowed down by the financial crisis of 2008. So, to assure the attractive returns on investment, the managers of the industry of the formal venture capital reduced drastically their participation in the phases of seed financing for the benefit of the less risky stages of the growth of firms. The third reason concerns the geographical concentration of VC funds. This spatial configuration has an essential reason: the access to the projects and their evaluations are mainly made thanks to the network, and the presence of the experts of the sector to maintain credible relations with other participants of the target industry of their investments (Fried, Hisrich, 1994). The absence of such a relational organization in certain geographical zones, reduced the investing activity of the firms of Venture Capital and this to the detriment of the project leaders. The fourth reason concerns more specifically technological innovative project. The Internet bubble of the beginning of 2000s and the high level of the uncertainty on the technological innovations stressed the depreciation on the potential of this market and increased the risk aversion of the contributors of traditional financing (Madill et al., 2005; Ernst&Young, 2007). Finally, reasons connected to the demand can also explain this "equity-gap" and its obstinacy. Indeed, most of the entrepreneurs are lacking information on sources of funding at their disposal (Collewaert et al., 2010). Their privileged partners always remain the classic banks who are less and less attracted by this type of uncertain investment.

The financial gaps exist and several dimensions characterize them (financial, geographical, sectorial and other). It can appear at the early-stage of the innovation process or after BAs' financing. The financing of the innovation being crucial for the economic development in many countries, it would be necessary to try to restore the complementarity between BA and formal actors of the venture capital, within the chain of financing or between the 3Fs and BAs. At the European level, it has been suggested that the solution should be to implement several mechanisms to increase the number of professional BAs. Nevertheless, it doesn't seem to be sufficient. In such a situation, what could be the role of the exponential development of crowdfunding all over the world?

c. Equity based crowdfunding as a way to help filling the equity gaps

First of all it is necessary to define crowdfunding through its characteristics and some figures. Then we will discuss the mechanism of crowdfunding within entrepreneurial radical innovation.

“This phenomenon, called crowdfunding, is a collective effort by people who network and pool their money together, usually via the Internet, in order to invest in and support efforts initiated by other people or organizations” (Ordanini, Miceli, Pizetti, Parasuraman, 2011). As notices by Mollick (2014), a narrower definition is preferable for new ventures and entrepreneurial finance. Then they propose the following definition “crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit- to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries”. It is a subset of crowdsourcing which emphasizes the power of the crowd to help developing new products/services or solving technical problems (Kleeman at al., 2008). The desired input for crowdfunding is in the form of a monetary contribution. This financing method involves funding a project with relatively modest contributions from a large group of individuals, rather than seeking substantial sums from a small number of investors. The crowdfunding came from the United States at the beginning of 2000s [3]. It is an alternative mode of financing that allows the meeting between investors and project leaders. It favors the social link and closeness by turning to the social networks on the Internet to collect funds, without the intermediary of the traditional actors. The evolution of information technologies and communication allowed a revolution of crowdfunding through the collaborative platforms of financing [4]. We distinguish different modes of financing depending on the project: donation-based and reward-based crowdfunding, lending and social lending-based crowdfunding, equity-based crowdfunding for a potential future return on investment. The last form of crowdfunding is growing very quickly nowadays in United States and Western Europe.

The growth of crowdfunding is exponential and policymakers are more and more aware of the importance and challenges of this new financial intermediation mechanism due to big changes in consumers’ behavior who more and more want to become active investors. In 2013, the European Crowdfunding Network AISBL (ECN) became an international not-for-profit organization in Brussels, Belgium. This network publishes reports on crowdfunding. The aim is to promote and explain this way of raising funds, to discuss and promote transparency, regulation and governance all over Europe. The academic research on crowdfunding is emerging [5] but it already appears that it is at the intersection of several disciplinary, among which there are finance, marketing and information systems.

As far as figures are concerned, the Crowdfunding Industry Report in May 2012, shows that “crowdfunding platforms raised \$2.7 billion (an 81% increase) and successfully funded more than 1 million campaigns in 2012. Massolution forecasts an increase in global crowdfunding volumes in 2013, to \$5.1 billion”. Carl Esposti, the CEO of Massolution, said “While lending-, donation-, and

reward-based crowdfunding have thus far been leading this global financial revolution, equity-based crowdfunding is about to take center stage in the U.S. The JOBS Act, which will allow non-accredited investors to make investments in exchange for equity, is expected to go into effect by the end of 2013.” The figures show that North America and Europe raised much more capital than platforms in other regions with a growth of 105% in North America and \$1.6 billion raised. In 2012 in Europe, the amount raised is \$945 million with a growth of 65% [6]. As explained in this report, “the growth in funding volumes was primarily driven by lending- and donation-based crowdfunding, and by SME adoption of reward-based crowdfunding. The growth in lending volumes mainly stemmed from crowdfunded micro-loans and community-driven loans to local SMEs”. Concerning categories, “social causes are most active, driving close to 30% of all crowdfunding activity ... but crowdfunding’s application for entrepreneurial ventures has also gained traction. Driven by models that offer financial return, the ‘Business/Entrepreneurship’ ... represents in 2012 16.9% of all crowdfunding activity”.

Obstacles to the financing of innovative projects are not only due to the rarity of funds or the rarity of the good projects. They are due to a difficulty convincing of the potential of value creation in a phase dominated by the uncertainty. In a recent publication, Agrawal et al. (2013) explained the difficulties, even within Silicon Valley, to convince either BAs or Venture capitalists. In a recent research, Deffains-Crapsky and Klein (2013) suggested to analyze the early-stage equity gap as a structural hole (Burt, 1992) and BAs as the “network entrepreneur” (Burt et al., 2000). The question is: Can we analyze equity based crowdfunding as a bridge to fill the equity gaps?

A first sub-question can be: is crowdfunding better than BAs financing to fill equity-gaps or is it a complementary way of financing early-stage ventures? To answer this question it is necessary to look at the practice and to compare the way BAs identify and select the innovative projects which will be financed by them and the way such projects can be presented on a crowdfunding platform. Concerning the BA selection process the recent developments in this direction have only allowed to list a number of criteria that may be important for the BA (Mittens et al., 2012; Sudek, 2006; Mason, Harrison, 2008; Maxwell et al., 2011), but the conduct of the evaluation in the selection remains a black box. Most analytical approaches were descriptive through interviews with individual investors or data collection questionnaires, or in situ observation of the different stages of the decisions of the providers of capital. It appears that BAs rely on different networks to collect enough information to evaluate uncertainty levels subjectively. For example, they look carefully at the business model and they conduct some due diligences. In such a context, as remained by Agrawal et al. (2011, 2013) the financing of early-stage innovative project is geographically localized. Thanks to

a public presentation of the co-founder of Wiseed (Nicolas Sérès), French equity-based crowdfunding platform, it appears that before to be presented on the Wiseed platform in order to raise money, a project has to be selected by the Wiseed team. Moreover, under the direction and animation of the Midi-Pyrénées Incubator the founders of Wiseed have helped more than 100 entrepreneurs. They participated in raising equity or quasi-equity of sixty startups for a total amount of € 51 million. That means that the process of selection of project which will have the opportunity to raise money through equity-based crowdfunding is perhaps the same as the one which characterized BAs. This hypothesis needs to be confirmed through a future research. The differences, positive or negative, might appear after this first step of selection and some have been already listed by the few academics who begun to work on this promising field of future research in entrepreneurial finance. For example, BAs financing present a high level of non-financial resources through their competences and their professional network. What's about crowdfunders? How do they support the innovative project once it has raised the financial amount targeted? Moreover, a lot of project on a crowdfunding platform don't meet their goal (on average less than 50%).

A second sub-question concerns the interpretation of the reasons of the exponential growth of crowdfunding all over the world. In France, the main reasons are:

- Deterioration of the economic environment: policy makers want to encourage entrepreneurship,
- Support banks increasingly difficult to obtain and difficulty of private equity to raise funds,
- New consumption practices,
- New trends: solidarity and ecology,
- Existence of significant savings in France,
- Development of the digital economy,
- New financial regulation only for crowdfunding.

All these reasons seem to explain that individuals, who already used to finance investments indirectly through bank intermediation, prefer to finance investments directly through the Internet. Within the crowdfunding model, consumers actively invest in order for projects to be realized. To better understand the crowdfunding growth, it seems urgent to analyze motivations of these consumer-investors, known as the crowdfunders. Moreover, crowdfunding platforms could be seen as intermediaries between consumer-investors and innovative projects. This intermediary could exploit a plethora of marketing techniques to influence the behavior of the potential investor. Therefore it is important to look at what influencing factors are being used on crowdfunding platforms.

The concept of consumer-investor can help to answer our central question concerning the role of equity-based crowdfunding to fill the equity gaps in

early-stage entrepreneurial radical innovative projects. It seems that, as far as crowdfunders are first consumer and then decide or not to invest, they may have a predictive power on the capacity of the new project to assess the market. If so, the crowd would have the possibility to assess ex ante success chances of a product and this will limit the investment risk. The question to answer, is if the crowd has really the power to help a project to be no more uncertain but just risky.

4. Conclusion

Because of a lack of collateral and an important information asymmetry, entrepreneurs face an inherent problem to attract outside capital at the early stage of their entrepreneurial innovative project. It appears that formal and informal venture capital (BAs) financing is not sufficient to fill the equity gaps that exist. Nevertheless, different sources have proved the importance of radical innovation for the development of national economies.

Many reports have opined on the potential of crowdfunding to increase the total capital allocated to innovation. The academic research in this new field of entrepreneurial finance is emerging. The equity-based crowdfunding is a new form of financial disintermediation and therefore differs from BAs financing. Indeed, BAs are individual investors and even if they can act as a network, it is not comparable to a crowd. However, it seems that the method of selection of innovative projects to be funded can be the same. At the same time, some experts have focused on concerns such as fraud, unrealistic investor expectations and inexperienced creators. Is there a likelihood of failure in the market for equity-based crowdfunding?

Then, thinking that the main problem of radical innovative projects is to convince future investors, we suggest developing research on crowdfunding in three main directions. First, it seems urgent to conduct academic research on the way capital is allocated within equity-based crowdfunding platforms. Secondly, it is necessary to better understand and compare the cognitive selection process of crowdfunders and business angels at the stage of identification and selection of project with high potential value creation. Third, it appears that the academic research should deepen the role of the consumer-investors before and after the decision to finance a project in order to understand the impact on the uncertainty of these projects.

Finally, equity-based crowdfunding needs a special regulation for investor protection and other legal matters. At the European level, some countries, as France, have begun to implement a national legal policy. But, “the fragmentation of the European Union is a key hurdle for crowdfunding” (ECN, 2013).

Notes

- [1] The main characteristic of such a project is a very uncertain, not simply risky, return on investments.
- [2] EBAN, 2007. “La contribution des business angels à la réalisation de la stratégie de Lisbonne, au Plan d’Action Communautaire en faveur de l’entrepreneuriat et au C.I.P. 2007–2013.” Livre Blanc. EVCA, 2010, “Closing Gaps and Moving up a Gear: the Next Stage of Venture Capital’s Evolution in Europe.”
- [3] It has become increasingly popular in the United States, especially since the passage of the JOBS Act (on April 5, 2012, President Obama signed into law the Jumpstart Our Business Startups).
- [4] There exists many platforms of crowdfunding. For example, the well-known Kickstarter. Within such platforms the process of raising funds is standardized. As studied by Belleflamme et al. (2013), entrepreneurs can initiate individual crowdfunding practices.
- [5] The first researches concern two main questions: what is crowdfunding and why is it an increasing phenomenon.
- [6] In line with this 2012 Report, it appears that in 2012 there were 28 platforms in France and 4 in Poland. It is nowadays much more in France as shown by a recent publication by Xerfi which pointed out that around 80 million euros should be raised in France through crowdfunding only in 2013 compare to 40 million from 2008 to 2012.

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