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**"CROWDFUNDING IN ITALY: RECENT EVOLUTION"**

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LIST OF ABBREVIATIONS

AI: Artificial Intelligence

AIECF: *Associazione Italiana Equity Crowdfunding*

AIM: Alternative Investment Market

AR: Augmented Reality

BA: Business Angel

CAGR: Compounded Annual Growth Rate

CF: Crowdfunding

CMU: Capital Market Union

Consob: *Commissione Nazionale per le Società e la Borsa*

CRD: Capital Requirement Directive

CRR: Capital Requirements Regulation

EBITDA: Earnings Before Interests, Taxes, Depreciation, Amortization

ECF: Equity Crowdfunding

EESC: European Economic and Social Committee

ESMA: European Securities and Market Authority

EU: European Union

IPO: Initial Public Offering

JOBS Act: Jumpstart Our Business Startups Act

KPI: Key Performance Indicator

M&A: Merger and Acquisition

MBA: Master Business Administration

MiFID: Markets in Financial Instruments Directive

MTA: *Mercato Telematico Azionario*

PE: Private Equity

PTT: Push To Talk

R&D: Research and Development

SEC: Security and Exchange Commission

SME: Small Medium Enterprise

TFU: *Testo Unico della Finanza*

UK: United Kingdom

VC: Venture Capital

VR: Virtual Reality

## INTRODUCTION

This thesis starts from the consideration that a real revolution is taking place today in the field of the use of goods and services: sharing. Ownership is becoming less and less a requirement, while it is now developing a new culture that favors the concept of expenditure referring exclusively to the effective use of what is necessary, when this happens. This concept underlines the birth of the sharing economy, a new idea of economy, which is giving rise to many new markets. Despite the existing differences in the reference literature, these are some aspects that are in line with most of the definitions of shared economy: first, it is necessary the presence of a technological platform, where digital relationships are inserted; secondly, collaboration is required, implying a relational dynamic between the subjects who start the project based on the sharing of goods and services; thirdly, there must be a preference for peer to peer relationships, such as horizontal and equal relationships (Huckle *et al.*, 2016). In this way, it is possible to assume that not only the real market is facing a radical change, but the financial market as well. Indeed, during the last years it has been observable a democratization process of finance, in which crowdfunding represents one of the most powerful innovations. Within this new scenario, crowdfunding, which until recently has been considered a niche business compared to alternatives of business financing, is showing a strong growth trend as well as an ability to attract institutional investors, who, even though nervously, are getting closer to it. In addition to this, the lack of access to finance is commonly recognized as one of the main challenges faced by start-ups, especially those that deal with risky and innovative businesses. This difficulty is mainly related to severe information asymmetries and agency costs faced by many early-stage ventures, as well as the lack of fit with investors' investment objectives (Leboeuf and Schwienbacher, 2018). Furthermore, when external funds are needed, selecting the right form of finance has a key role for successfully developing the entrepreneurial activity.

Hence, crowdfunding is currently seen as a valuable tool of the so-called alternative finance, which represents a bundling of instruments developed mainly after the financial crisis in 2008 and which relies on the further expansion of the Web 2.0 and the higher volume of online transactions. The recently developed concept of alternative finance includes, in addition to crowdfunding, instruments such as the system of third-party payments, mini-bonds for small and medium-sized enterprises, private placements and other shadow banking mechanisms, bonds with social impact, for example the enhancement of regional economies, and alternative currencies, such as bitcoins (Iosio and Valentinuz, 2016).

After a few years of existence, crowdfunding is surely becoming an important alternative method to finance companies, particularly in the case of SMEs. As Belleflamme and Lambert (2014) suggested, there are some main features which have been instrumental to the huge development of this tool. Firstly, crowdfunding does not refer only to the financial sphere: it represents an instrument by which information can flow between entrepreneur and investors, and it *«cleverly leverages the contributors' extrinsic and intrinsic motivations by complementing monetary compensations with community benefits»* (Belleflamme and Lambert, 2014). Moreover, the literature available until now suggests that crowdfunding projects' success is linked to some principal factors: the project quality, in the measure that projects which signal a higher quality level are more likely to be funded; the amount of family and friends members willing to invest their money; finally, a large number of relationships on online social networks which imply higher interconnection among people. Further, there is a strong geographic component linked to the nature of projects, with founders proposing projects that reflect the underlying cultural products of their geographic area. The data collected during the recent years also suggest that the nature of the population in which founders operate is related to project success, thus implying the importance of offline social networks. By considering all these findings, it appears that there is substantial value in further studying the dynamics of crowdfunding since it is having consequences on a variety of subjects of interest to academics and policymakers, with implications for entrepreneurial financing, the role of individual quality and networks in venture success, and the importance of geography in new ventures. Nowadays, crowdfunding is experiencing a strong expansion trend in Italy as in the rest of European countries. Since the last data collected by Collaboriamo.org, the first Italian service and information site on collaborative consumption, in the year 2019, 127 platforms were active in Italy for the sharing of goods and services. Among companies actively engaged in this new sector, it is possible to find names such as Car2Go, BlaBlaCar, Gnammo.[1] There are communities of users which share goods or services through digital platforms and contribute to the creation of new opportunities for work and remuneration. Everyday millions of people embrace this revolution, deciding to share experiences, goods, and activities such as homes, cars, boats, spaces and small services, effectively revolutionizing traditional business models.

Moreover, the new concept of shared economy triggered the development of crowdfunding policies as a new method to raise funds. Through CF campaigns, individuals have the possibility to raise funds by contacting an online community instead of traditional credit institutions. Besides, according to Collaboriamo.org data, in 2019 in Italy one out of three start-up companies worked through crowdfunding platforms, 20% of the new initiatives concerned the sharing of consumer goods, 12% transport materials, 10% apartments or other services for tourism purposes, 9% spaces and professional skills.

Crowdfunding campaigns are therefore entirely executed through the Internet. Indeed, online platforms collect small contributions from very large groups rather than seeking large sums from a small number of investors. It is unclear, however, the degree to which crowdfunding will ultimately substitute for other forms of more formal venture funding, especially as the rules around crowdfunding for equity are still evolving and early stage ventures typically benefit much more from venture capital contributions, considering for example benefits coming from industry experience, governance, and prestige provided by the VC (Mollick, 2014).

This thesis is intended to provide an overview on the development and expansion of crowdfunding procedures among the Italian market, focusing particularly on the equity crowdfunding model and its implications on companies implementing it. The first chapter starts with a brief description of the historical contest in which CF procedures started to raise, and then focuses on the definitions of crowdfunding available until now. Afterwards, benefits and risks correlated to this kind of fundraising will be illustrated. By going forward in the chapter, the main CF model will be described as well as the actors participating in an online crowdfunding campaign. Within the second chapter, equity crowdfunding will be further studied, looking deeper in detail the dynamics concerning this kind of CF scheme. The third part of the thesis will show the main Italian regulatory frameworks available until now in order to manage CF campaigns; while in the last chapter there will be illustrated some examples of ECF applied to Italian businesses. Hence, it will be considered a sample of 50 start-ups who ran ECF campaigns during 2017, and their business plan projections will be compared with actual financial results gained. The analysis included the studying of business plans disclosed in the ECF platforms and financial reports available for the years 2017, 2018 and 2019.

# CHAPTER I - CROWDFUNDING: THE CROWD AS FINANCIER

The idea of crowdfunding basically refers to relate subjects, which may be either people, businesses, non-profit organizations or associations who are in need for financial resources to develop an idea, a cause, a project, a product or simply to start a business, with a large multitude of people who, at least potentially, are willing to give them their support. The possibility to enter in contact with a wide audience of "lenders" is made feasible using the Internet, social media and electronic payment systems. In this way, the collection of monetary resources takes place through the creation of specialized platforms, who perform the function of intermediary.

This concept is an innovative idea which started to spread around the first years of 2000 and is now becoming more and more adopted by several corporations and individuals.[2] In 2012 President Obama signed into the law Jumpstart Our Business Startups, known as JOBS Act. A key provision included into the JOBS Act was related to the legalization of crowdfunding for equity, by softening up various restrictions concerning the sale of securities. For instance, the law relaxed restrictions on general solicitation of securities, eased SEC reporting requirements and raised from 500 to 2000 the number of shareholders a company may have while still remaining private. Furthermore, the JOBS Act gave the assignment to the SEC to stipulate rules specifically related to equity crowdfunding (Alpert, 2019).[3] However, the choice of relaxing constrictions previously applied raised the concern that crowdfunding would be riskier for investors due to fraud or entrepreneurs' incompetence (Hazen, 2012), as in the case of reward-based crowdfunding campaigns. In this scenario, one of the most common mistakes made by entrepreneurs which receive funds injections is represented by the impossibility to maintain the promised shipping date of the product, due to failures in operational activities. This happened in the case of Pebble watch in 2012 (Gannes, 2013).[4]

Moreover, the digital revolution and the development of structured online platforms led to the creation of new opportunities to raise capital and develop new business opportunities. As reported by Leboeuf and Schwienbacher (2018), «*Internet based crowdfunding now allows even small entrepreneurs to raise funds from a large crowd, as communication costs have virtually disappeared with the Internet*». This seems particularly important in countries with lack of sufficient seed and start-up capital such as BAs finance and family and friends. In these cases, crowdfunding has shown the capability to fill the funding gap existing. Hence, one of the main innovations brought by crowdfunding is related to the geographical location of the contributors: indeed, the financing of early-stage creative projects was typically geographically localized. This was since these types of funding decisions normally rely on personal relationships and due diligence activities, thus requiring face-to-face interactions in order to balance the high level of risk, uncertainty and information asymmetries included in such kinds of investments. By looking from this perspective, the rising of crowdfunding and its procedures of raising capital from many people through online platforms implied innovations in two main areas: the application of a careful due diligence, which started to become tougher and tougher; and the composition of the crowd of lenders, which saw the participation of  unrelated people rather than only  family and friends, as it was before.

*HISTORICAL OVERVIEW: FROM CROWDSOURCING TO CROWDFUNDING*

The first idea of CF can be seen since the eighteenth and nineteenth century, when it was applied in the form of crowdsourcing. It was only during the most recent years that crowdfunding procedures started to become available to a high variety of people, thanks to the development and application of new technologies and new communication tools, which lead to simpler interactions and connections among persons all over the world and made crowdfunding procedures become as successful as we can see now (Iosio and Valentinuz, 2016). The key element which lead to the huge success of the process stood into the idea of pushing on the aspects that, according to Danae Ringelmann, co-founder of Indiegogo.com, normally convince people to donate:  passion for the project, trust in the person behind it, involvement in something bigger than oneself and the receipt of a perk (Tugend, 2014).

When studying this new fundraising tool, it is necessary to better define the terms crowdsourcing and crowdfunding, which are often and improperly used as synonymous. While the concept of crowdfunding relates to the collection of money by a crowd of people, crowdsourcing has the object of gathering new services or ideas from a crowd of collaborators. This latter term was firstly originated from the two editors Jeff Howe and Mark Robinson, who tried to shorten the notion of “outsourcing to the crow”, thus generating the word crowdsourcing. After this, the new word has been published for the first time in Jeff Howe’s blog in June 2006, and specifically it has been defined as «*an open call of a firm to a large network of undefined people to perform functions that were until now performed by employees of the firm*» (Howe, 2006). As it happened for crowdfunding, even crowdsourcing only gained wide attention through the rising of the Internet age, which brought people and ideas closer to each other and facilitated networks expansion (Wetterhag and Décarre, 2014). In 2008 Daren Brabham conducted a study in which he stressed out how most of the definitions available on crowdsourcing were emphasizing the role of the Internet (Brabham, 2008). In this way, one of the most popular examples of crowdsourcing is represented by the online platform Wikipedia.org, which was created through the collection of information given on a voluntary basis from each single user willing to contribute with his/her knowledge, without obtaining any kind of economic remuneration. On the other hand, in a second report, Brabham (2008) underlined how crowdsourcing is not merely a Web 2.0 buzzword, but is instead a strategic model to attract a motivated crowd of individuals capable of providing solutions superior in quality and quantity to those that even traditional forms of business can. The crowd solves the problems that stump corporate scientific researchers. In support of the theory that crowdsourcing operates as a problem-solving tool for corporates, Surowiecki (2004) examined how a group of random people could solve issues that even a specific problem-solving team inside of the company could not. The author stated that the very success of a solution is dependent on its emergence from a large body of solvers, and found that *«under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them»* (Surowiecki, 2004). Thus, the power of the crowd is not derived by averaging the solutions provided, rather it comes from the aggregation of them into a final idea which is at least as good as the best individually provided solution.

The key difference which stands between the concepts of crowdfunding and crowdsourcing refers to the fact that the latter does not imply any type of economic remuneration, and in fact "crowd-sources" are moved by the desire to give their own contributions in terms of time, competences, expertise and idea needed to reach the objectives planned, and the only benefits they obtain are related to the collective output and the satisfaction of having contributed to the achievement of it (Estellés-Arolas and González-Ladrón, 2012). Hence, it didn't take long for some individuals to understand that the crowd could not only contribute with knowledge, but also with money: this is the input idea through which crowdfunding came into place. Indeed, by following the same rational behind crowdsourcing and the collection of knowledge from multiple contributors, CF started to raise small individual amounts of money from a large amount of people which could have potentially financed a project the same way as if one unique large investor would have decided to invest in the same project (Wetterhag and Décarre, 2014).

As previously said, it is only from the beginning of the new millennium that crowdfunding started to spread on a world basis. In those initial years, CF campaigns were mainly developed in the arts and creativity-based industries, such as recorded music, film, and video games. The first significant online platform, represented by Sellaband, provides a good example: the platform was uniquely dedicated to new musical artists not yet signed to a record label, and enabled artists to raise capital to finance the recording production of an album. For what concerns the recent history of crowdfunding, authors Iosio and Valentinuz (2016) reminded us that a key date to remember is 10$^{th}$ February 2012: in this particular day the platform Kickstarter had been able to collect one million dollars for a single project for the first time ever (the project was Elevation Dock, which gained an amount of $1,46 million rather than $75 thousand initially required). Focusing on the Italian the scenario, the first online platform developed was *Produzioni dal basso,* born in 2005 with the aim of collecting funds of moderate entities in order to finance cultural self-productions.

In conclusion, Bottiglia and Pichler (2016) identified two main factors which led to the exponential growth of crowdfunding procedures in recent years: technological innovation of Web 2.0 and the 2007-2008 global financial crisis. The authors defined Web 2.0 as all websites and applications that allow internet users to share information online, while the financial crises played an important role inasmuch after the collapse of the US Bank Lehman Brothers, bank credit has almost ceased and it has become more and more difficult to find financing for SMEs and start-ups, thus creating a gap (the so-called funding gap). Moreover, when the bank credit started to recover, it created the opportunity for crowdfunding to become a complementary source of capital (Bottiglia and Pichler 2016). Furthermore, another important consequence of CF consists in enabling the masses to invest in start-ups ideas. Thus, individual non-professional investors can benefit from CF by having the opportunity to diversify their portfolios of investments and so reducing the volatility of risk.

### *DEFINITIONS OF CROWDFUNDING*

The European Union defines crowdfunding as an emerging alternative form of financing that connects those who can give, lend, or invest money directly with those who need financing for a specific project.[5] Gubler (2013) defines CF as «*giving ordinary investors the opportunity to get in on the ground floor of the next big idea*». In this way, crowdfunding is an innovative method for funding a variety of new ventures, allowing individual founders of for-profit, cultural, or social projects to request funding from many individuals, often in exchange for future products or equity. CF projects can range greatly in both goal and magnitude, from small artistic projects to entrepreneurs seeking hundreds of thousands of dollars in seed capital as an alternative to traditional venture capital investments (Schwienbacher and Larralde, 2010). As Lambert and Schwienbacher (2010) defined it, «*crowdfunding is an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes*». According to the previous definition, CF provides a method for artists and entrepreneurs to finance their projects, potentially facilitating gains from trade that would not otherwise occur. It works by enabling small funding increments, which are often as low as $5 in non-equity settings, through the implementation of networking platforms that allow funders to communicate with contributors willing to invest their money (Agrawal *et al.,* 2015). This tool leads small entrepreneurs to avoid the most traditional forms of raising funds, such as banks, credit institutions and VCs, which may possibly not be available for start-up. However, since crowdfunding is a still in evolution fundraising procedure, the definitions provided until now potentially leaves out examples that may arise when studying real cases and which may be classified under the notion of crowdfunding, such as internet-based peer-to-peer lending and fundraising drives initiated by fans of a music group (Burkett, 2011).

According to the definition provided by Belleflamme and Lambert (2014), the basic idea behind crowdfunding stands in the substitution of the entities providing the financing: «*instead of raising funds from a small group of sophisticated investors, entrepreneurs try to obtain them through the Internet from a large audience – the crowd, where each individual provides a small amount*». In addition to this, as Mollick disclosed (2014), «*crowdfunding allows founders of for-profit, artistic, and cultural ventures to fund their efforts by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries*». In his report, the author stressed out how personal network and underlying project quality play a key role in the determination of the success of the CF campaign, influencing it in a positive manner. Besides, although the Internet has been a critical ingredient in the development of crowdfunding practices, it is important to point out that it differs from open-source practices. Indeed, in the case of open-source, the resource belongs to the community, which can then exploit it on an individual basis – basically there is no restriction on who can use it; while in the case of crowdfunding the resource ultimately belongs to the firm, which is the only entity allowed to use it. This distinction becomes even more evident when considering equity-based crowdfunding, since capital cannot be shared. Unlike an idea or a software code, capital is not a public good, namely that, in the economic sense, assumes non-rivalness and non-excludability (Belleflamme *et al.,* 2014). Additionally, a key characteristic of CF is the extra private benefits that funders enjoy by participating in the campaign. These additional private benefits vary according to the forms of crowdfunding model. Moreover, CF works as an innovation-gathering tool, even more if considering that, especially in the case of reward-based CF, it allows entrepreneurs to test their products directly on the market, possibly generating a category of pioneer customers willing to buy the new product as soon as it becomes available on the market.

By summing up the main characteristics included in crowdfunding definitions, Agrawal *et al*. (2015) underlined the following: (i) funding is not geographically constrained anymore thanks to the expansions of the Internet and online platforms; (ii) funding and outcomes are highly skewed; (iii) funding propensity increases as accumulated capital increases, leading to "herding behavior"; on the contrary, it can even happen a reduction in the propensity to fund by new individuals whenever there is the perception that the target will be reached regardless;

(iv) funders and creators are initially overoptimistic about outcomes; (v) crowdfunding capital may substitute for traditional sources of financing, becoming a valuable alternative tool (Agrawal *et al.,* 2014); (vi) friends and family play a key role in the early stage fundraising, as their disproportionate amount of investment may generate an optimistic signal for later funders through accumulated capital. This effect becomes weaker in the moment when external funders start to monitor the project. Indeed, this category of funders is often tied to social obligations and therefore investment decisions may be subject to social pressure. Consequently, when valuing the worthiness of the projects, later funders should properly discount investments by family and friends, assuming their contributions as less informative about quality than other investors (Agrawal *et al.,* 2014).

### *BENEFITS AND RISKS OF CROWDFUNDING*

Among the main benefits for entrepreneurs, both Agrawal *et.al* (2014) and Belleflamme and Lambert (2014) agreed on the followings: firstly, the relative easiness of collecting financial resources thanks to a large audience of potential investors who are able to evaluate freely and in a market perspective the product or the service that is asked to finance; secondly, low transaction costs, due to the creation of wide online platforms, which have the capacity to collect resources from a large number of transactions, thus requiring low costs of brokerage; thirdly, the verification and validation of the idea, product, price, preferences of potential consumers and an estimation of expected market demand, due to the wide range of feedbacks coming from lenders who often operate through thematic platforms; then, the opportunity to exploit digital word of mouth, intended as a marketing channel, and the possibility of achieving sales even before arriving on the market, towards those who joined the collection campaign; lastly, in case of success of the CF campaign, the possibility of easy access to more traditional forms of financing, since both operational and financial risk can be reduced.

By looking at contributors' perspective, it appears that the main benefits they experience include the possibility to diversify the risk, by investing in many and unrelated businesses; a closer participation with the activity being financed, both in terms of emotions and identification with the idea, which is feasible both in the phase of resources collection and in the management phase, so generating mutual relationships and making investors assume a more dynamic role than what usually happens; finally, the opportunity to use information available on social media to carry out a due diligence of the project available. Nowadays, this circumstance can be very easily applied, thanks to the multiplicity of information sources available and due to the strong network of contacts generated by Web 2.0.

It is important to highlight that there are even professional investors who are interested in funding a crowdfunding campaign, and this category of contributors may obtain even different benefits from the lending activity. As Mollick (2013) reported, there are many differences among professional and occasional investors. Just consider, for instance, the competences, knowledge, and experience owned by investors who are constantly working with financial markets. Moreover, they adopt different approaches and methods when valuing the best opportunity to inject money in. Despite these key differences, Mollick (2013) stated how both the categories showed the same valuation approaches whenever it is time to value an early-stage project and its expected returns, and he declared that *«despite the radical differences in selection environments, I find that entrepreneurial quality is assessed in similar ways by both VCs and crowd-funders, but that crowdfunding alleviates some of geographic and gender biases associated with the way that Venture Capitalists look for signals of quality»*. It is exactly for these reasons that, according to Iosio and Valentinuz (2006), professional investors may obtain benefits from the success reached by the campaign. Professional investors may also benefit from previous and personal offline relationships with the creators of the projects, as well as with the team who is going to manage it.

On the other hand, CF procedures also imply some risks. The main risky areas are related to transparency issues, investors protection and guarantees, and possible future exit strategies. Moreover, funders face issues related to fraud and valuation of the project, particularly when assessing the amount of resources to inject in the project presented. The transparency level needed in order to prevent these kinds of risks may result too low in the case of crowdfunding campaigns, requiring higher effort levels made by funders in order to determine which projects are worthy. Moreover, it is important to underline the connection between funders' preferences and local projects. Indeed, this relation may create consequences for projects geographically located in areas less economically developed, undermining the success level of these ventures. Relating to the latter issue, Lin and Viswanathan (2013) reported that *«if on the one hand the link between the local community and the financed party can represent an advantage, in terms of greater benefits for the territory itself, on the other hand this geographical preference can represent a non-optimal decision in terms of risk/return, not allowing to choose better investment opportunities in more distant geographic areas, either in terms of lower risk, with the same return, or in terms of higher returns with the same risk»*.

As for funders, even creators of campaigns face some risks, which are referred to the capacity of successfully completing the campaign, and to deliver the promised product or service. Indeed, this objective requires not only a valuable idea at the basis of the project, but also competences and experience to efficiently manage and monitor its progress. Added risks are related to the safeguard of entrepreneurs' reputation and the protection of intellectual property. Whenever contributors are particularly sensitive to socially responsible behaviors, entrepreneurs should have the entire control of the supply chain linked to the product or service offered, so being able to provide sufficient guarantees of compliance with the required value principles. This aspect may be particularly relevant in the case of collection of resources that are motivated in an ideal or a "good reason". According to this, Lin *et al.* (2014) developed a study when they identified four main motivations under the decision to participate in a crowdfunding campaign: altruism, social benefits, reward, and reputation. These appeared as principal factors leading people to share their resources with strangers on an online platform.

*CROWDFUNDING CHALLENGES: DISTANCE AND INFORMATION ASYMMETRIES*

Traditionally, early-stage ventures financing has been subject to the effect of distance: ventures and investors needed to be geographically close. Literature suggests that, normally, offline investments in early-stage ventures tend to be mostly local because of the importance of two key factors: reputation and trust (Nieuwerburgh and Veldkamp, 2009). These characteristics become even more important in the case of absence of regulatory disclosures and oversight, but also because of the amount of distance-sensitive costs associated with early-stage investments, such as identifying opportunities, conducting due diligence, and monitoring the progress of the project financed (Sorenson and Stuart, 2001). Moreover, in the case of offline fundraising, the only way available for entrepreneurs to build reputation and trust is through interpersonal interactions which mostly occur between nearly collocated individuals. However, one of the principal characteristics of CF deals with the link which is provided between fundraisers and contributors. Perhaps the most striking feature and innovation of crowdfunding is the broad geographic dispersion of investors in small, early-stage projects.

Indeed, for what concerns a CF campaign, distance does not represent a major barrier to finance ventures. This can be easily understand by considering that crowdfunding platforms normally present three common properties that are properly designed in order to overcome distance-related frictions: firstly, easier search, in the sense that online platforms provide standardize and comprehensive manner of presentation of online projects, in order to make it easier to make searches for investors; secondly, less need for monitoring, as online projects allow investors to execute small financial transactions (such as $10), thus limiting the downside risk of the investment and relaxing the need of monitoring on the progress of the project; lastly, information on what others have done, in the sense that online platforms provide information on investments previously obtained (e.g., cumulative amount raised to date and the online identity of current funders) and tools for contributors to communicate with each other (Agrawal *et al.,* 2015). In conclusion, the impact on distance-related frictions in crowdfunding depend on these distance-flattening properties included in online crowdfunding platforms, as well as the amounts needed by early-stage funders.

The key solution to reduce distance-related frictions in CF is focusing on the role of information on online investments. In this way, within the daily communication to investors, it is suitably to include the amount of capital raised at date, which conveys information such as other funders perception on what they believe about the quality of the project. These assumptions on information conveyed are consistent with previous literature that documents "herding behavior" in crowdfunding (Freedman and Jin, 2011). According to this, it is rational to assume that, in the presence of information asymmetries, investment propensity is much higher whenever a funder's cumulative capital raised is higher. Broadly speaking, this let us to assume that, considering an investment which has been made among geographically faraway people*, «there is a qualitative difference between the types of investments made locally versus those made over distance, and this difference seems to be related to information»* (Agrawal *et al.,* 2015).

Hence, it persists the existence of a difference between local and distant investments. Perhaps the reasons behind such differences are correlated with a social explanation: as Agrawal *et.al* (2015) suggested us, local funders differ from distant funders in their responsiveness to the investment decisions of others due to proximity, that enables the creation of social ties. According to this rationale, it is important to consider also that entrepreneurial finance literature demonstrated how family and friends influence the raising of capital in early-stage ventures: the main amount of start-up funds come from this category of investors. Indeed, family and friends boast of a key informational advantage concerning the quality of the entrepreneur. Moreover, by considering the local nature of social networks, family and friends tend to be basically local. This shows how the creation of a network of interactions and social ties facilitates funders' decisions to lend money, with the perception of less needs of daily monitoring of the quality of the entrepreneur and its project. In other words, although local and distant funders do display different investment patterns, this difference is mostly explained by the disproportionately local nature of social relationships (Cumming and Johan, 2009). Looking deeper in detail at the role of information in crowdfunding, it is interesting to examine also the role played by social networks. Indeed, social networks lead to easier communication among funders and people they fund, and even among previous funders and possibly interested new ones. In this way, prior funders may deal with the communication of worthy projects to prospective funders, which in turns trust prior funders and their capacity to select quality investment projects, thus requiring even lower monitoring activities. This is also the role played by online platforms, which have the ability to connect people and impressions. On the other hand, it may happen that family and friends investment decisions generate mistaken interpretations among non-family investors: normally, these kinds of funders are viewed as quality-signals of the project interested, but it could occur that investment decisions of this category are simply the result of social obligations.

In conclusion, CF appears to effectively reduce distance-related costs commonly associated with the financing of early-stage ventures. Nonetheless, it seems that there are some specific frictions which still crowdfunding platforms cannot eliminate, that are mainly associated with information asymmetries and this sort of barrier which stop investors to fully provide the resources they have available, even more in the case where there isn't any type of social ties among creator of the project and investors. In this way, socially connected individuals, which share a higher amount of information by sharing the same social network of relationships, are easily inclined to invest (Agrawal *et al.,* 2015). This interpretation emphasizes the role and importance of interpersonal relationships in crowdfunding, and it is consistent with what Nanda and Khanna (2010) reminded us, namely that cross-border social networks play a key role in accessing capital. Therefore, we can say that as long as flows of information cannot be easily communicated by using the Internet, distance will keep playing a key role in investment decisions. In the end, market efficiency depends on whether there is efficient information transfer from preexisting offline social networks to the online global crowd. In this scenario, CF may overcome constraints related to distance and information, by creating a market for investing in the most valuable ideas, projects, or visions, promoted by creators who can leverage their local social networks to access a much larger pool of capital from distant strangers.

### *CROWDFUNDING BUSINESS MODELS*

The differences between crowdfunding and other sources of financing lie mainly in the number of investors involved, the size of firms seeking funds as well as the returns that can be expected by investors. However, those differences can be more or less relevant depending on the crowdfunding model chosen by the entrepreneur. This paragraph will provide an overview of the main CF models, focusing on their processes and structure. The equity-based model will be deeper developed later in a specifically dedicated chapter.

Raising capital through CF platforms can differ significantly based on the project, objectives of the campaigns, the size collection, and forms of reward. The activity at the basis of the fundraising can be relatively simple, not for profit, for example donation; or likewise, it can come to forms of collection more complex and regulated, which affect the share capital of one company and in which participants can request not only a monetary return but even certain protections and benefits, proper to the status of shareholder. The complexity of these processes is also linked to the number of participants and it is clear that the greater the "crowd" and the lower the contributions made by individuals, the greater the administrative burden that platforms and entrepreneurs will have to manage.

With the aim of better understanding the dynamics of crowdfunding, the literature available until now tends to make a first division, splitting the models basically in two macro categories according to the idea and objective at the basis of the crowdfunding itself: the first macro-category focuses on the not for profit activities, which are mainly started for cultural or social reasons and that are not linked to economic aspects or monetary rewards; the second macro-family includes those models of crowdfunding dedicated to profitable campaigns. The main driver of such models is the creation of profits, and consequently they include both risk and reward valuations, aiming at forecasting the economic output (Iosio and Valentinuz, 2016). Among the two macro-categories described above, it is possible to identify further models which are characterized following their objectives, goals, guide-principles, crowd involvement, contributors' expectations, management of the fundraising activity and regulatory framework on which to be based. In addition to this, in both forms of crowdfunding it is reasonable to assume that crowd-funders enjoy some additional utility over regular consumers, such as the feeling of participation on a project, the idea of being part of a community of entrepreneurs (Belleflamme *et al.,* 2010).

| | Donation Crowdfunding | | Lending Crowdfunding | | | Equity Crowdfunding | |
|---|---|---|---|---|---|---|---|
| | Pure Donation | Reward Donation | Forgivable Loan | Presales | Traditional Loan | Investor-Led | Entrepreneur-Led |
| no tangible reward ⟵ | | | | | | | ⟶ tangible reward |
| **Reward Type** | No reward | Recognition, tokens, or other non-tangible rewards | Interest only if the project has revenue or profit | Finished product | Fixed-term interest | Securities, revenue, or profit sharing; projects accessible to accredited investors only | Equity, bond-like shares, securities, revenue, or profit sharing; projects accessible to all investors |
| **Platform Examples** | Kopernik Crowdrise | Indiegogo Experiment | Quirky TubeStart AppsFunder | Kickstarter PledgeMe | SoMoLend Lending Club | AngelList Seedrs EquityNet | Crowdcube Fundable |

***Figure 1.1:*** *Typology of crowdfunding,* Paschen, 2017.

By following a different way of crowdfunding models' classification, Belleflamme *et.al* (2010) suggested to consider two macro categories according to the benefits contributors are going to receive after sharing their resources. The authors defined the two groups as following: pre-ordering and profit sharing. The first category relates to campaigns in which the entrepreneurs invite consumers to pre-order the product, aiming at collecting the necessary capital for launching the production and therefore enabling the entrepreneur to apply different prices on the product (and to generate larger profits) according to the type of consumer: crowd-funder, who pre-purchased the product at an out-of-the-market price, and other "regular" consumers, who normally wait until the product reaches the market to purchase it. In the second category, founders solicit individuals to provide money in exchange for a share of future profits or equity securities. In this profit-sharing scheme, there is not any future obligation or willingness for investors to purchase the product or the service. Focusing on this type of classification, it appeared that, in the case of relatively small initial capital requirements, entrepreneurs prefer the adoption of pre-ordering mechanisms; while if the funds needed are particularly high, founders prefer the profit-sharing scheme.

This chapter will illustrate crowdfunding models according to the perspective proposed by Iosio and Valentinuz (2006), who identified five schemes for crowdfunding campaigns. I chose to describe these five models as I found that they are broadly adopted in literature when studying crowdfunding procedures. By starting from "not for profit" models, we can find donation-based and reward-based models; while among the "for profit" schemes are included lending-based, equity-based, and royalty-based models. As declared by Leboeuf and Schwienbacher (2018), reward-based crowdfunding resembles more closely supplier finance, while the lending-based one resembles bank finance, and equity crowdfunding is closer to angels and VC finance. Finally, Iosio and Valentinuz (2006) described the hybrid models, by defining them as more flexible and adaptable schemes. Hybrid models include fundraising operations which are derived from the blending of both financial institutions and crowdfunding models described above, thus creating schemes which are closer to the characteristics needed by the target audience. Lending-based model has been the most adopted fundraising model in Italy in the year 2019, followed by equity-based and donation & reward-based models (Bedino, 2019).

Finally, it is important to consider that different CF models refer to different type of investors. In particular, while donation and reward-based schemes can uniquely rely on non-professional participants, such as fans, philanthropists or consumers, lending and equity-based CF enable professional investors to take part in the campaign as well, by offering commitment of interest payments for loans, or possible capital gain and dividends for equity (Leboeuf and Schwienbacher, 2018).

*Donation-based model*

Donation-based model, as defined by the name, implies fundraising for initiatives not for profit. In most cases these are real donations made with the aim of supporting charitable projects. The amounts donated may be of a small entity or even may imply relevant financial commitment, according to donators' preferences and availability of sources. In this scheme, contributors do not receive any form of financial or material reward; indeed, they donate in order to feel part of a community and to become actively engaged in a "good cause" which makes them feel gratified for the action taken and being recognized for the participation given. In the framework of not for profit projects, there may be initiatives of different nature, such as charity, artistic projects related to art, music or theatre, or political campaigns.

By studying deeper in detail donation-based crowdfunding, it is possible to identify two separated families: donations created in order to support projects belonging to individuals and with a private aiming, or perhaps campaigns dedicated to finance social projects in favor of the society as a whole (Iosio and Valentinuz, 2016). Moreover, according to a 2015 industry report by Massolutions, it appeared that donation crowdfunding generates the second-largest funding volume globally and has been applied as a successful marketing tool (Paschen, 2017). This is due to its characteristics which have made the crowd appreciate it, such as its flexibility of the target amount to be collected. This is since campaigns promoted through the donation-based model are basically charity actions, thus they do not imply minimal investment levels to be reached. In this way, it is particularly important to properly market the real objective of the campaign, in order to increase interest in people and even their willingness to donate. It is perhaps a good strategy to communicate the implicit benefits generated by the participation on the donation, such as feeling part of a community of people with the same ideas and principles or even the feeling of responsibility and honor deriving from the concrete help given to the society.

*Reward-based model*

Reward-based model requires participants to invest resources in a project or in a company and implies the preference for a non-monetary reward rather than a monetary one. Historically, the reward-based scheme was mainly widespread among art, culture and music scenarios, where interested and passionate people could be part of exclusive events or limited edition albums or pieces of arts, or even be publicly thanked for having contributed to the development of the project. Nowadays, the reward promised at the beginning of the investment may consist of products or services assigned to contributors and can even take the form of pre-orders, rather than other forms of non-monetary rewards such as tickets, attendance at exclusive events, previews, or limited series of the financed product. The reward is a kind of practice broadly adopted by both early-stage innovative ventures and by more mature companies already structured and whose intent is not necessarily linked to the financing of the project but rather to the need of testing and validating an idea through the collection of feedback among current clients and even future potential consumers. Indeed, the reward model is commonly linked to projects or activities whose characteristics of innovation and uniqueness make an eventual equity financing costlier for reasons related to the evaluation of the project itself by an economic and financial point of view. Afterwards, one of the main objective of such kind of CF stands in the generation of interest within the target market, as well as the collection of useful information, advice and opinions on consumers preferences, market trends and saturation, that allow the company to re-define product launch processes or services (Leboeuf and Schwienbacher, 2018). In general, the funds received do not necessarily have to be returned, but the reputation of the person who launches the campaign can be lost if s/he is unable to keep promises done. Regardless of the purpose of crowdfunding, it is evident how within product development processes becomes crucial to understand the reactions of potential customers, as well as their input become central element of dialogue with the market, above all for all company functions that must interact in an integrated way, think about marketing, R&D, design, product development. (Iosio and Valentinuz, 2006). One of the most appreciated characteristics of this kind of scheme relates to the fact that funds raised do not necessarily have to be paid back in a monetary form, although the funder has to deliver the promised product or service by the time declared in order to keep a good reputation in the market.

By focusing now on the Italian market, in the report accurately prepared by Bedino (2019), donation and reward-based models are considered as a unique family, showing a growth rate of 28% from 2018 to 2019, year in which donation and reward crowdfunding platforms gained € 16mln.

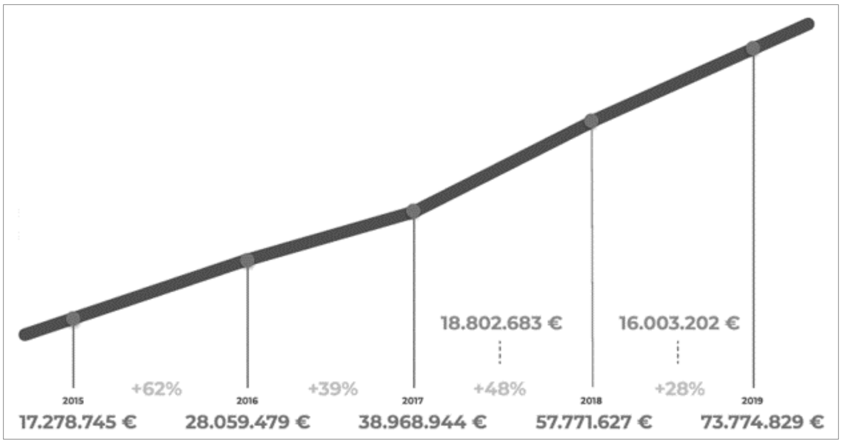


**Figure 1.2:** *Donation and reward-based growth,* 2019, Bedino, 2019.

*Lending-based model*

Lending-based model is definitely the most adopted scheme in case of crowdfunding campaigns, in terms of volume of transactions generated (Paschen, 2017). This scheme, generically identified as micro-lending, can be properly divided into two sub-categories: Peer-to-Business or P2B, mainly oriented to support enterprises, and Peer-to-Peer or P2P, mainly geared towards financing individuals. The idea of micro-lending is commonly adopted by a several number of people, individuals or institutions which lend their money in exchange for the payment of future interests and the amount lent at maturity. In the case of loans to businesses, participants tend to invest in debt securities issued and offered on a crowd platform; while in the event of persons, loans can be directly given or channeled into vehicles created to raise capital and satisfy the request from the potential money taker. Perhaps, it may happen that the debtor starts a competitive auction in order to define the interest rate to be paid to the potential lender, being able to pay for values that are the result of a competitive process and therefore potentially lower than what could be obtained in a non-competitive environment (Iosio and Valentinuz, 2016).

This kind of scheme includes theories linked to micro-credits. Micro-credit has been defined as credit of small amounts with the aim of financing a starting business or to meet emergency expenses, towards vulnerable subjects from a social and economic point of view, which are generally excluded from the more traditional credit institutions (Pizzo and Tagliavini, 2013). This concept stands at the basis of the idea of crowdlending. The latter has shown huge capabilities in taking advantage of the newest communication technologies. Furthermore, by focusing on SMEs, crowdlending has offered a real alternative way of financing, allowing them to raise funds while avoiding banks or credit institutions that have suffered credit capacity difficulties after the crisis in 2008. In this way, crowdlending represents a vehicle for disintermediation from the traditional banking world. Moreover, it acts as a catalyst and attractor of a broad number of lenders with a risk appetite consistent with the call for capital (Iosio and Valentinuz, 2006).

Participants of such a kind of fundraising are typically helped in the valuation of the riskiness of the investment they are going to make, and this is done by the platforms which intermediate funders and founders. Indeed, online platforms take the role of matching borrowers and investors and allow the execution of due diligence duties by contributors on the business plan presented by the creator of the campaign. In this way, due diligence will mainly focus on the future revenue generation capacity of the company in question, as well as on promised production objectives. Finally, fundraising activity through lending-based CF can be executed either directly, that is to say every individual enters into a credit relationship with the applicant, or perhaps indirectly, that is, through the creation of an ad hoc vehicle that collects the necessary funds to the business and becomes the reference counterpart. By providing an example of the application of this model, we can consider the Italian online platform named Workinvoice, a market in which corporates can sell their trade receivables exceeding € 10.000 (per single invoice) to private sector customers in order to obtain quick liquidity. In the auctions that are organized by Workinvoice, contributors can access the credit assessment of each debtor company, developed by modeFinance, a company which provides for analysis on corporates' creditworthiness.[6]

By focusing now on the Italian market, the lending-based model appears to be one of the most adopted by Italian small and medium entrepreneurs, showing high growth rate in terms of volume of transactions executed through crowdlending platforms (Bedino, 2019). As feasible in Figure 1.3, the lending-based model experienced huge volumes of transactions, collecting almost € 80mln solely in the year 2019, reaching a cumulative volume of transactions of € 240mln.

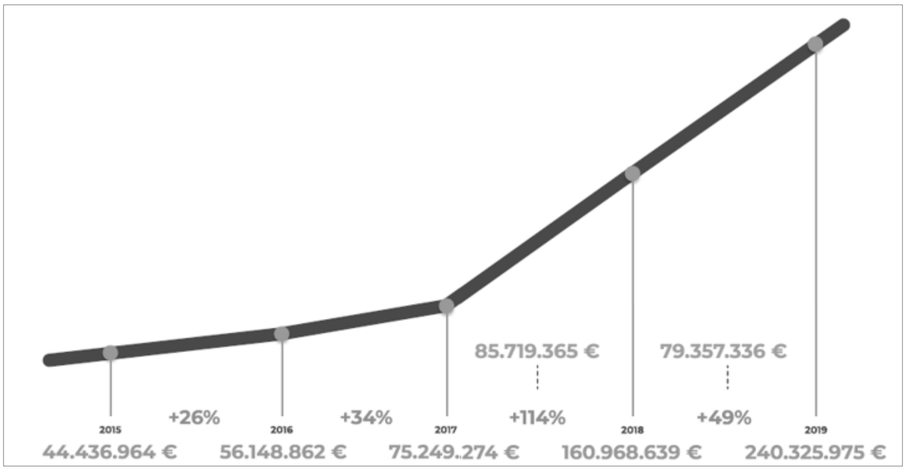


**Figure 1.3**: *Crowdlending growth,* 2019, Bedino, 2019.

*Equity-based model*

Equity-based model is based on the idea of a sale of shares of risk capital offered to a large number of investors. Basically, the venture raises money from a crowd in exchange for an ownership stake in the firm; thus, investors are offered equity or bond-like shares (Paschen, 2017). Such kind of model was firstly launched in the United States in 2012 with the JOBS Act issued by President Obama, and has seen a number of countries, including Italy, actively move to create the necessary conditions, both from a regulatory and a market point of view, for rapid development and complementary support to more institutional fundraising activities represented by BAs, VCs and PEs, and the more traditional credit institutions. It appears quite obvious that, as a consequence of its higher level of risk and involvement into the corporate's operations, equity crowdfunding (ECF) procedures require more detailed regulatory frameworks. Indeed, on the one hand, several legal actions are needed to increase the equity of a company or just to modify its amount; on the other hand it is necessary to adequately protect public investors, even more in the case where they represent the minority of stakeholders within the company. Through this model, founders of the campaign become able to interact with a representative spread of shareholders, while avoiding many of the costs and constraints associated with a listing or admission to share trading on multilateral platforms, such as the

Alternative Investment Market. On the other hand, investors have the possibility to invest small amounts of their sources and easily diversify their investment portfolio reducing associated risks. In conclusion, as in traditional venture capital investments, investors expect to receive a return from the growth in value of shares or quotas and eventually from any distribution of dividends. For what concerns the regulatory framework in Italy, the reference discipline is defined by the National Commission for Companies and the Stock Exchange, commonly known as Consob (Iosio and Valentinuz, 2016).

Equity-based model will be further explained in a specifically dedicated chapter in this thesis. Nonetheless, it is interesting to see now the growth rate experienced by equity crowdfunding platforms in Italy during the last five years. Indeed, equity crowdfunding is the model that has shown the highest growth rate, +217% from 2017 to 2018 and +114% from 2018 to 2019, also thanks to the creation of an appositely thought regulatory framework which eases this kind of procedures (Bedino, 2019).

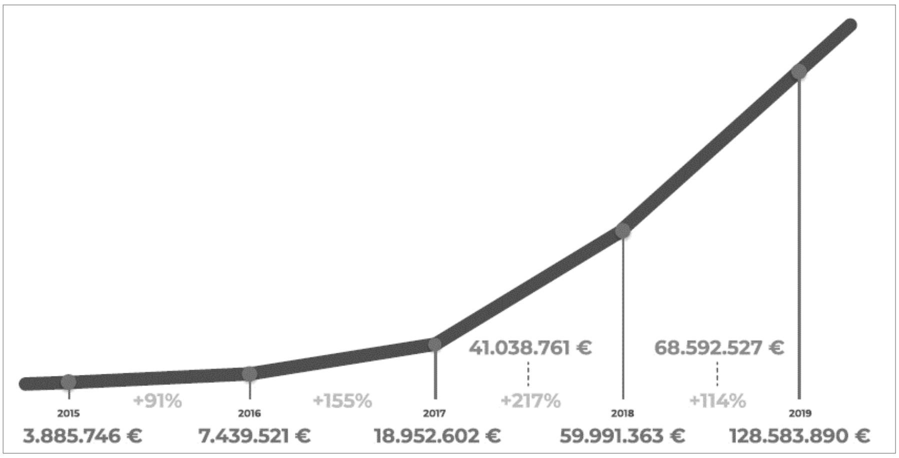


**Figure 1.4**: *Equity-based growth, 2019,* Bedino, 2019.

*Royalty-based model*

Royalty-based model includes the so-called profit-sharing or revenue-sharing models, in which the founders prefer to guarantee a partnership to future profits and revenues with those allowed to finance the initiative in question. These kinds of models offer greater flexibility and tend to be tailored in order to better fit each situation, so they are normally built case by case and based on specific needs of sponsors. In the case of royalty crowdfunding, contributors aim at obtaining a percentage or a fixed amount typically calculated on turnover or profit of the initiative. The idea is to ensure an economic return that is based on the economic exploitation of an intellectual property (Iosio and Valentinuz, 2006).

*ACTORS PARTICIPATING IN A CROWDFUNDING CAMPAIGN*

Unlike many other forms of venture financing, crowdfunding projects have a wide variety of goals (Mollick, 2014). In order to properly understand the scenario in which CF operates, just start by considering the first example of a crowdfunding platform as it is defined nowadays. Indeed, Sellaband, named as the "granddaddy of crowdfunding" (Kappel, 2009), provides a useful example to better define the actors dealing with a CF campaign and their duties. As stated above in this thesis, Sellaband is an online platform which links musician artists looking for producing their own albums and funders of such artistic projects. Creators of the campaign have their own profile on the platforms, in which they describe themselves and their business plan and where they upload three demo songs. Afterwards, funders listen to the demos, and choose whether to buy one or more shares in an artist's future album; at the same time funders can look for information on the artist in his/her online profile, as well as information about the amount raised to date. After the album is completed, revenues generated from its sales are split equally among the three parties, and thus the artist, funders and the intermediary platform. In this way, the investment resembles a security (Agrawal, *et al.*, 2015). The authors pointed out how the financing challenges and constraints faced by artists in Sellaband were very close to the ones faced by first-time entrepreneurs in other settings. In conclusion, within the scenario described above, artists can benefit from subscribing in the crowdfunding platform, as it provides support for their fundraising efforts, including marketing their venture, presenting their budget, sharing their plan for promoting future albums and communicating directly with current and potential funders. By looking at the scenario just delineated, it appears that the actors operating in a crowdfunding campaign are basically three: creators of the campaign, contributors, and intermediary platforms.

*Entrepreneurs as fundraisers*

Founders are the actors who create the crowdfunding campaign, mainly pushed by two principal motivations. Indeed, through CF they are enabled to lower the cost of capital compared with traditional credit channels, and they obtain access to more and valuable information (Agrawal *et al.,* 2014). Founders are normally entrepreneurs looking for funds with the aim of financing their early-stage venture, while this kind of fundraising is commonly linked to personal savings, home equity loans, personal credit cards, friends and family members, BAs, and VCs. However, CF enables creators to reduce the cost of capital for three main reasons. First, crowdfunding campaigns have the capability to link entrepreneurs with people who have the highest willingness to pay for equity in their venture, or for early access to new products – according to the model that is going to be adopted. In this way, crowdfunding leads to better matches between creators and funders, and moreover, such matches occur on a global rather than local basis. Thus, CF procedures imply a decrease in geographical barriers, allowing entrepreneurs to have access to capital independently from where they are located. Second, and specifically for non-equity-based crowdfunding, it appears that funders positively value the possibility of early accessing the product, or the recognition for discovering innovations, or even their participation in a new venture's community as an acceptable and valuable return for their financial backing. Perhaps this leads to the adoption of a hybrid approach to financing, allowing creators to bundle the sale of equity with other alternative rewards. The third reason by which founders may expect to reduce their cost of capital is linked to the idea that CF generates more exchange of information rather than traditional sources of early-stage capital. Furthermore, the sharing of such information may influence investors' decisions, and even increase their willingness to pay, thus lowering the cost of capital. Finally, funding need is not the only goal of a crowdfunding effort, even in an entrepreneurial context: in this way, founders' goals may include the relation with demand-market for a proposed product, which can afterwards lead access to funding from more traditional sources (Mollick, 2014).

Furthermore, crowdfunding acts as a specific informative channel for creators. This type of fundraising often provides marketing research, which is perhaps modeled as reducing the variance of post launch demand (Lauga and Ofek, 2009). In their report, the authors stated how crowdfunding procedures which include advance selling and subsequent quality signal, lead to a growing number of products launched and to a higher rate of success among launched products. Indeed, creators may receive input by funders about their product development or the business plan, thanks to crowdfunding mechanisms which lead to easier communication and exchange of ideas. As Agrawal *et al.* (2014) reported, this may create an early development of an ecosystem around the product. Besides, creating interest in new projects in the early stages of development has been especially important in industries where projects seek to create ecosystems of complementary products and thus aimed at building a competitive advantage even before the commercialization of the product (Mollick, 2014). Thus, as comparably to other forms of early-stage venture financing, crowdfunding offers a potential set of resources that go beyond capital which can be beneficial to founders (Ferrary and Granovetter, 2009).

Moreover, crowdfunding may also entail challenges for campaign creators. Perhaps the greatest of these is represented by the disclosure requirement (Agrawal *et al.,* 2014). Normally, traditional sources of funding allow creators to keep their innovation secret from the crowd, until it is totally developed and ready for the market. However, CF requires founders to disclose their innovations on a public forum, generating concerns for imitations which are possible between the time of raising capital and the launching of the product. In addition to this risk, transparency requirements may have even higher negative influence in the case of intellectual property protection, or in the event of bargaining with potential suppliers. Besides, if we consider equity crowdfunding, disclosure risk has higher influence, due to the requirement of public communication concerning company business plan, and including strategy, key employees, customers, and costs. A second challenge has been stated by Hsu (2004), who reported the role of the opportunity cost of raising capital from the crowd rather than from professional investors. Institutional investors and VCs, indeed, generally provide for additional value, such as industry knowledge, relationships, and status. In addition, crowd-funders commonly inject smaller amounts than angel investors or VCs, requiring more investors to raise a given amount of capital. This leads to investor management issues, which may become significantly costly to face. Furthermore, creators have no possibility to control who funds their projects, in this way it is impossible for them to prevent funders with totally differing visions and strong personalities from joining the campaign and adversely affecting the community output (Kelley, 2012).[7]

*The crowd as funder*

Crowdfunding differs from other methods of start-up funding because the relationship between funders and entrepreneurs varies by context and nature of the funding effort (Belleflamme *et al.,* 2012). Funders are heterogenous in their motivations when taking part in a CF campaign. Lin *et al.* (2014), classified crowd-funders into four groups: active backers, trend followers, altruistic backers, and the crowd. These different categories of funders have four common reasons by which they decide to invest. Firtly, by engaging in crowdfunding, investors obtain access to investment opportunities which otherwise would be impossible to reach. Moreover, traditional mechanisms for early-stage financing are typically constricted by geographical area. In addition to this, CF backing allows early access to new products or perhaps to limited editions or to exclusive events. This is particularly true in the case of hybrid crowdfunding models or the reward-based one. In this way, enthusiastic funders may also enhance the value of the entire project, providing for better solutions to meet client's needs. The third reason behind funder's decisions to invest stands in the aim of feeling part of a community, thus transforming the CF fundraising into a real social activity (Agrawal *et al.,* 2014). In this way, contributors commit capital partially with the goal of obtaining preferential access to the founder network. Relatedly, some investors positively value the recognition obtained by being part of a selected group of early adopters. Even philanthropic ideas are at the basis of some funders' decisions to invest, whenever investors do not expect direct return for their donations. Finally, crowdfunding campaigns allow the formalization of contracts. Indeed, early investors are most commonly family and friends (Agrawal *et al.,* 2011). In this way, crowdfunding platforms act as intermediary and provide an opportunity to formalize the contribution given, which would otherwise take the form of informal finance. Hence, in case of negative results of the project, such formalization helps the regulation of social relationships with family and friends' members. Besides, when considering equity-based approach, crowdfunding efforts may also treat funders as professional investors, giving them equity stakes or similar consideration in return for their funding (Mollick, 2014).

Although crowdfunding is showing high appreciation among the crowd, funders may face some risks when investing through online platforms. Agrawal *et al.* (2014) stated three primary disincentives: creators' incompetence, fraud, and project risk, which are all a consequence of high degree of information asymmetries. The first disincentive identified, is exacerbated by contributors over optimistic expectations about the capacity of founders to deliver their promises. In this way, it appeared necessary to recalibrate the expectations of the community, and in doing so it has become needful to increase disclosure requirements and exchange of information. Moreover, creators have often little experience in managing an early-stage venture. The second risk faced by contributors stands in fraud. Indeed, non-professional investors may rationally be less experienced, thus channeling capital toward bad projects or even fraudulent campaigns which are intended to appear as real fundraising campaigns. This risky situation is even exacerbated by the low level of due diligence and monitoring performed by non-professional investors, which normally invest a small amount of money, and thus have weak incentives in performing properly those activities (Agrawal *et al.,* 2014). Thirdly, early-stage projects and ventures are inherently risky. Namely that it is rational to expect a significant chance of failure, which may or may not derive from the creator's incompetence and fraud.

*Platforms*

Focusing now on the roles and strategies of crowdfunding platforms, it appears that they are intended to facilitate the interaction between entrepreneurs aiming at raising new funds and contributors willing to participate in the financing of new projects (Bellaflamme and Lambert, 2014). Crowdfunding platforms work as intermediaries between creators and investors. They are basically for-profit businesses, which mostly employ a revenue model based on transaction fee for successful projects, that typically amount to 4-5% of the total fundraising. In this way, platforms objective stands in the maximization of the number and size of successful campaigns. In doing so, online platforms try to engage solely high-quality projects aiming at reducing fraud and the risk of inefficient campaigns, in order to attract a large number of founders and investors. In addition to this, CF platforms also seek to obtain media attention, to expand the existing community (Agrawal *et al.,* 2014).

In their report, Belleflamme and Lambert (2014) identified crowdfunding platforms as multisided platforms. By considering what Evans (2011) stated, multisided platforms may create a business opportunity in the case where the following three conditions are met. Firstly, there must be different groups of customers; secondly, members of different groups, namely funders and founders, benefit from the interaction with one or more members of another group; finally, coordination among different groups can be facilitated by an intermediary. It appears evident that crowdfunding platforms meet these three requirements: indeed, they link at least two groups of actors, founders and contributors, and secondly, each group's valuation depends on the participation of the other group members. Moreover, Belleflamme and Lambert (2014) stated that *«entrepreneurs exert positive indirect network effects on contributors»*, meaning that they look for larger platforms in order to have higher possibility to reach the required amount settled by the campaign. Besides, the same reasoning applies on the side of contributors since they exert positive indirect network effects on entrepreneurs. Finally, with respect to the third condition, platforms undoubtedly ease the connection among entrepreneurs and contributors, and furthermore they reduce costs and increase visibility of creators' campaigns. After all, crowdfunding platforms have the capacity to reduce information asymmetries much more efficiently than any individual fundraiser could do.

In the end, when considering a crowdfunding campaign, within-side effects are also present, namely that members of the same actor group care about what the members of their own group do. Such effects are normally negative among founders, as the higher the number of campaign founders, the higher the competition for the funds provided by contributors; while they seem to be mostly positive for funders, as they provide quality signals on the funded project. By looking at strategies applied by CF platforms, it appears how they use price and non-price instruments in order to manage participation on both sides of the market. As reported by Rochet and Tirole (2006) and focusing on price instruments which affect the participation on online platforms, it can be seen that multisided platforms normally charge exclusively entrepreneurs, as it is very likely that any positive fee would discourage the participation of contributors, thus worsening entrepreneurs benefits as well. According to the authors, multisided platforms can only subsidize the participation on one side. In fact, as each group's participation is conditioned on the other group's participation, the intermediary has no choice but to fee only one side and let the other one act for free.

## CHAPTER II - FROM CROWDFUNDING TO EQUITY CROWDFUNDING

Among the variety of CF models, equity crowdfunding has been appreciated particularly for its capacity to overcome the funding gap faced by SMEs in recent years. Indeed, after the financial crisis started in 2008, small and medium enterprises found more and more difficulties in obtaining seed funds from venture capitalists and business angels. The importance of the implementation of ECF may be even clearer when taking into consideration the number of SMEs in Europe. Indeed, as reported in Statista[8], in 2018 there were almost 25.1 million SMEs in Europe, of which 23 million were classified as micro-sized firms. SMEs are a relevant part of the European Union economy, contributing to the overall economy an average added value around 56%, and employing almost 100 million of people – in 2017 almost 66% of the total European workforce was employed in SMEs. By looking at this scenario, SMEs are responsible for the majority of the new job creation, thus the achievement of an alternative way of financing became a necessity in order to foster – among others – employment, innovation, consumption, and thus economic growth.

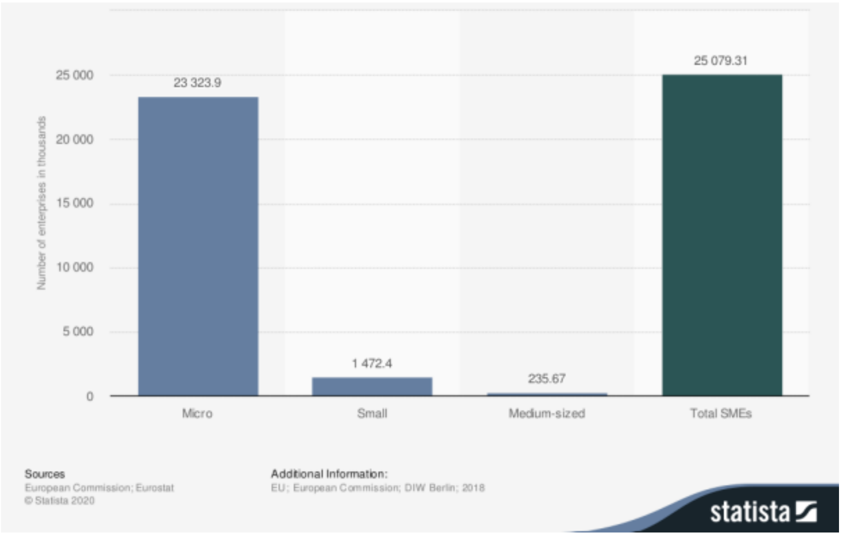


**Figure 2.1**: *Number of SMEs in the European Union in 2018, by size (in 1000s),* Statista.

### *EQUITY CROWDFUNDING*

When studying the applications and implications of equity crowdfunding on early-stage ventures, it is important to remember that start-ups get financed under what is commonly described as the financial growth-cycle paradigm proposed by Berger and Udell (1998). The authors suggested a model in which different capital structures are optimal for different points in the company life cycle. The report started from the idea that economic growth is correlated to innovation, particularly in the high tech, information, and bio-technology areas, which then depends on start-ups and small new businesses; thus implying the necessity for funding in order to develop operating activities and realize products and serviced contained in the business plan. According to the authors, the most traditional private investors of small businesses normally operate through highly structured and complex contracts that are often acutely informationally opaque; and furthermore, they provide for funds by exploiting the role of financial intermediaries that play a key role as information providers and execute the activities of screening, contracting, and monitoring on start-ups. In conclusion, Berger and Udell (1998) proposed a paradigm for small businesses which largely considered a linear relationship between stages of company development and source of funding, in which the kind of funding is a function of the start-up's stage of development. In this scenario, each funding source is linked with its relative capacity to deal with moral hazard and information asymmetries and its funding capacity in terms of size. In particular, start-up firms normally rely on family and friends, business angels or VCs, and all of them provide limited amounts of capital. An alternative source of funding is perhaps represented by small contributions provided by the crowd of professional or perhaps even non-professional investors.

Focusing now on the definition of this model, as previously anticipated in the first chapter of the thesis, equity crowdfunding is a novel type of entrepreneurial finance that has been rapidly growing in the past few years. It is also defined as crowd-investing and includes the acquisition of shares of a corporate by several unrelated people which form the crowd (Bradford, 2012). On the one hand, corporations receive funds in form of capital, on the other hand, funders receive compensation in the form of equity revenues or profit-share arrangements. In other words, the entrepreneur determines how much funds s/he is going to need, thus raising it in exchange for a percentage of equity while each investor obtains a pro-rata share of the company, which are usually ordinary shares, depending on the fraction of the target amount they decided to commit (Wilson and Testoni, 2014). Investment-based crowdfunding, crowd-investing, securities-based crowdfunding are all subgroups of equity-based crowdfunding (Hornuf and Schwienbacher, 2017).

As stated by Agrawal *et al.* (2014), there are gains from trading in the market of start-ups, and this represents one of the reasons why equity crowdfunding platforms attract so many investors. Indeed, there are contributors who are looking for investments in a particular technology market segment, or even have the objective to differentiate their investment portfolio with early stage backing. In this way, such investors would definitely benefit from the availability of a greater selection of investment opportunities than those available close to their geographical area, thanks to equity crowdfunding online platforms. Thus, ECF overcomes distance barriers allowing for a more efficient connection among founders who need money and investors who are looking for backing new projects with the aim of achieving future returns, realizable through an exit strategy.

However, ECF is the most complex form of crowdfunding from a legal point of view since it implies issues such as creditors protection. Indeed, funders acquire equity stakes in early-stage ventures, meaning that the value of the stake must be estimated based on market forecasts and other factors highly uncertain and extremely difficult to assess. Thus, the level of uncertainty involved in crowd-investing, related to the valuation of the start-ups as well as the future ability of entrepreneurs to generate liquidity and returns, makes the necessity of creditors protection tools. Overall, these complexities pose problems that are distinct and more fundamental than those of the other CF models (Wilson and Testoni, 2014). Furthermore, equity crowdfunding assumes an even more relevant role when considering the pecking order theory which suggests a hierarchical order according to which inject funds in a company. Indeed, the pecking order theory suggests that the priority for financing is firstly to go for cash or internal funds, then to issue debt and as a last resort to issue equity (Chen, 2011). A crucial role is played by transaction costs, which are almost null in case of cash or internal funds injections, while they become relevant when providing external financing and particularly in the case of equity. Firms issuing equity are therefore those that have been unable to gather internal funds or debt, as the case of start-ups. Indeed, early-stage ventures with below average growth and return expectations are unlikely to be financed by angel investors or venture capitalists. As shown by the World Bank[9], the financial crisis caused a drop in savings rates, making it unattractive for small investors and savers to keep their money in their savings accounts. In such a scenario, an alternative solution included investing that money instead, with the hope to get a higher yield than the current low saving rates. In this way, equity crowdfunding represents the CF model which more closely exploited these necessities while resembling angel investors or perhaps venture capital finance. Start-ups have recently collected huge amounts of euros on ECF platforms in Europe, thus making this way of fundraising a valuable potential alternative tool to overcome the funding gap. In Figure 2.2, it is possible to see how SMEs used to heavily rely on bank loans as a source of funding.

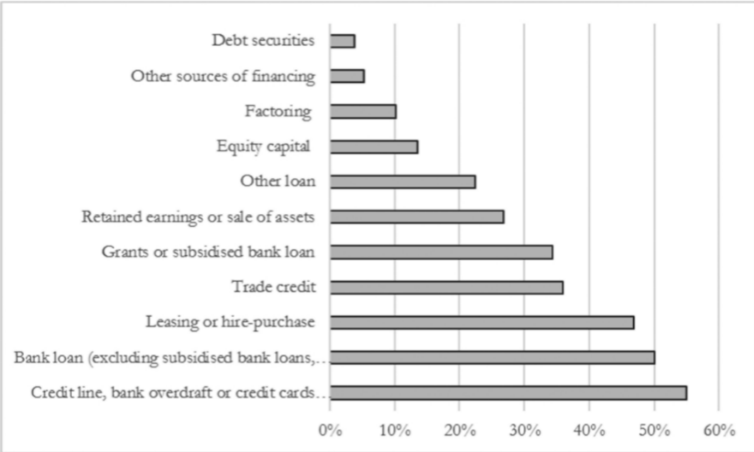


**Figure 2.2:** *Financial sources for SMEs in Europe (2015),* Iosio and Valentinuz, 2016.

Despite its huge expansion and the consequent interest of companies and policymakers, equity crowdfunding and its dynamics are still not completely understood and regulated. Through this type of financing, entrepreneurs make an open call for funding on the Internet, then the investments of funders take place on an online platforms that provides the means for the transactions, such as the legal groundwork and the ability to process financial transaction (Wetterhag and Décarre, 2014). In return for this service, the platform receives a percentage on the total amount of money collected by the page, normally ranging between 3 and 10%. Most commonly, an equity-based campaign constantly reports the minimum and maximum amounts of money sought, the equity of the entrepreneur's firm given in return, the current amount of money raised, the current number of investors as well as the number of remaining days before the end of the campaign. A typical campaign page also includes a description of the project and/or the firm, and generally the business plan with financial forecasts in order to attract and convince potential investors.

A key aspect of ECF stands in entrepreneurs' capability to clearly signal the value of their projects to contributors, which, on the other hand, have limited access to investment opportunities, especially when considering non-professional investors. In this way, it appears how the way by which young start-ups signal to small investors is likely to be different from the way they would signal to angels or venture capitalists. For what concerns small investors definition, they are intended as those people who invest relatively small amounts of money and who receive relatively small stakes of a company in return (Malmendier and Shanthikumar, 2007). Moreover, small investors are more likely to lack competences and experiences specific to the financial markets, which in contrast are one of the key skills of venture capitalists. Furthermore, consider that investments costs incurred by angel investors or VCs in order to evaluate ideas and teams are fairly small, but they would be prohibitively high for small investors (Ahlers *et al.,* 2015).

Equity crowdfunding has been expanding globally in the recent years. During the last decade, the ECF scheme has shown the highest growth rate with respect to the spectrum of CF models, and its volume has doubled every year since 2009 (Ahlers *et al.,* 2015). Just to provide a quantitative example of its increasing, the annual transaction value of equity-based CF in Europe (excluding UK) has increased from 63.1mln dollar in 2013 to 278.1mln dollar in 2018. While solely in the UK, the annual volume of equity transactions went from 28mln in 2013 to 363mln in 2018, thus making the UK the main ECF market in Europe, representing 68% of the total European CF panorama (Statista, 2018)[10]. This trend is easily recognizable in the charts below. Figure 2.3 shows the trend just described in EU transaction volumes related to ECF, while Figure 2.4 focuses on providing an image of alternative finance in the UK, which, as stated above, represents the largest European market for alternative finance tools. Alternative finance includes the funding of individuals, businesses and other entities outside of the traditional capital markets and banking systems.

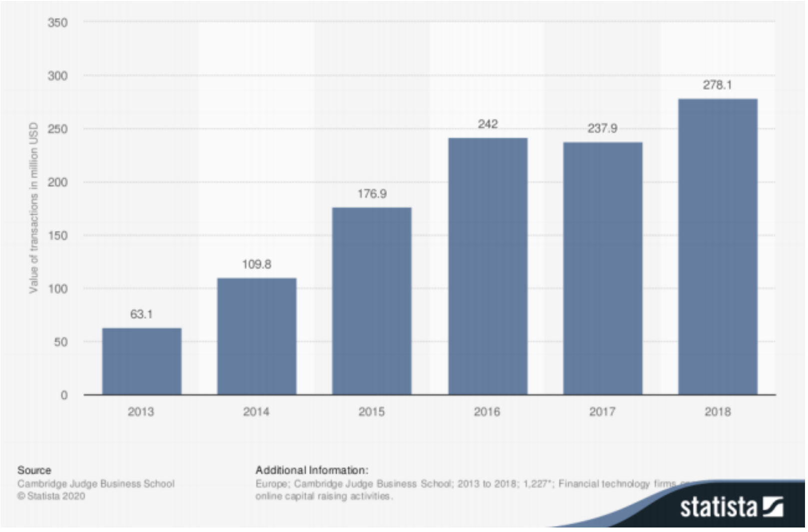


**Figure 2.3**: *Equity-based crowdfunding value in Europe (Excluding UK) from 2013 to 2018 (in million USD),* Statista.

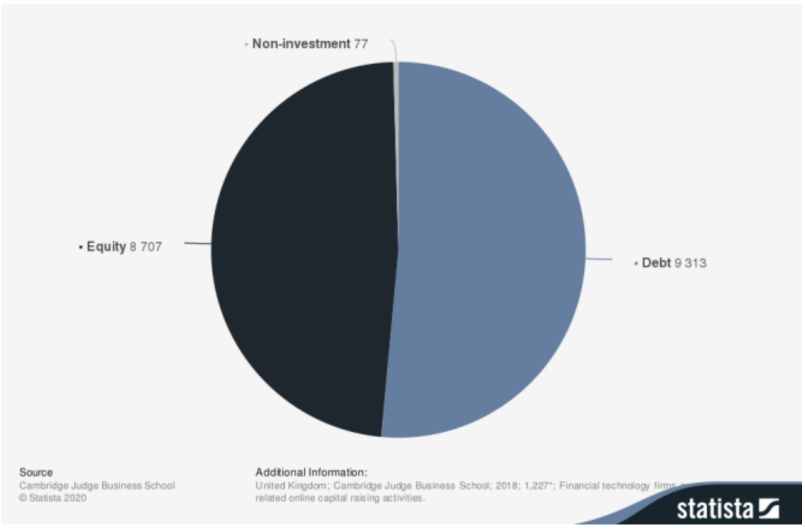


**Figure 2.4**: *Value of alternative finance in the UK (in million USD),* Statista.

*Crowd contributions and knowledge management*

Equity crowdfunding blends characteristics of more traditional crowdfunding procedures, such as the reward-based CF, with features of the traditional investment tools. Firstly, it is based on the contribution provided by the crowd, formed by several unrelated people. The usefulness of the crowd is supported by Benkler (2006), who described it as a tool to sort out firms and notice the leading ones. In this way, it is reasonable to assume that the aggregated due diligence conducted by potential investors within the crowd can enable them to detect promising business opportunities in which to inject funds. However, performing due diligence is a process that requires long time and that is often under-performed by investors in equity crowdfunding platforms. Indeed, it usually takes a long number of hours to execute it properly, as it has been described by Ahlers *et al.* (2015), which took into examination the number of hours needed in relation to the relatively low amount of money invested on average by each contributor on equity CF platforms and showed that the opportunity costs resulted too high. The authors compared it to the salary that small investors could have earned by working rather than performing due diligence, and it appeared that in many situations this process would cost more than what s/he planned on investing. In addition to this, it is important to stress out also that non-professional investors are normally not able and not experienced enough in order to properly and accurately execute due diligence. In this way, investors simply look at the accumulated capital before making an investment decision, thus relying on the crowd valuation of the project.

Secondly, equity crowdfunding implies knowledge management. Indeed, investors make contributions in an ECF campaign not only to invest money, but also to feel part of the community of the new start-up business. In other words, investors aim at actively participating on the floor of new ideas development. This willingness to get involved in the firm is in line with entrepreneurs' willingness to take into consideration investors' feedback and opinions in the decision-making of the firm. Moreover, when considering the reasons why they decided to use equity investment, entrepreneurs commonly answer that it is not only about the fundraising itself, but also about what investors could bring to their firm in terms of knowledge and expertise (Belleflamme and Lambert, 2014). Consequently, it is not surprising that entrepreneurs encourage the crowd of investors to get involved, obtaining in return feedback and ideas on the development of the new enterprise. In conclusion, this situation leads to what is commonly named as knowledge management, referring to the necessity for firms to get more value than simply money, while requiring coordination of all the different inputs that investors inject in the entity. Indeed, efficiently managing knowledge has been recognized as a valuable source of competitive advantage (Argote and Ingram, 2000). As suggested by Argote and

Ingram (2000), knowledge management is directly related to what they called knowledge transfer, inasmuch knowledge flows between the firm and parties outside it – such as investors. By focusing on entrepreneurs/investors relationships in an equity crowdfunding, the knowledge of people outside the firm has the potential to increase its value only whenever it is shared with the firm, thus generating the necessity for properly managing knowledge. However, and mainly in the case of non-professional investors, contributors may be unwilling to contribute in terms of knowledge and strategy definition of the new firm. Despite this possibility, Belleflamme and Lambert (2014) reminded us that normally investors decide to take part in ECF looking for actively get involved in firm' dynamics. Anyway, it also depends on the firm ability to well manage knowledge flows. In fact, this would imply constant communication with a huge number of investors, taking time and money.

*Quality signaling and information asymmetries*

Start-up financing often implies asymmetries of information between investors and fundraisers, inasmuch entrepreneurs are assumed to have better knowledge about the true realization and quality of the business plan of the project (Connelly *et al.,* 2011). Furthermore, this is even more evident in the context of equity crowdfunding, where small and non-professional investors are unlikely to have experience in evaluating investment opportunities. As suggested by the authors, it is reasonable to assume that, in extreme cases, ECF investors may not have the capacity to determine the true quality of the start-up idea, and therefore even potentially high-performing ventures may not receive any funding.

What described above set the basis for adverse selection in entrepreneurial finance, indeed, whether substantial information asymmetries exist, and the supply of poor projects is large compared to the supply of good projects, venture capital markets may fail. In other words, an adverse selection problem arises whenever investors are unable to distinguish value-creating ventures from poor investment opportunities due to lack of information. Clearly, these information asymmetries are easily found in the case of start-ups financing on equity crowdfunding platforms, where the possibility of gathering information, monitoring process and providing inputs are particularly important but the costs of these activities are sensitive to geographical distance (Agrawal *et al.,* 2011). However, it happens that investors have been seemingly able to value the quality of early-stage ventures' projects by interpreting the information disclosed on the platform. In this way, funders treat at least some of the information provided as signals of project quality. These signals may be based on, for example, positive qualities of the entrepreneurs, and their network of relationships (Ahlers *et al.,* 2015). In this scenario, Grossman (1981) explained that, theoretically, there is the creation of a strong incentive for entrepreneurs to provide information, thus determining a sort of equilibrium. Furthermore, Agrawal *et al.* (2014) showed how the imbalance between the two sides of the market appears to include not only ex-ante disclosed information, but rather it is also due to the investors' ex post inability to originate effort on the side of the creator of the project. Indeed, once investors have provided their capital, they have limited tools to actively influence entrepreneurs' actions. In other words, entrepreneurs may behave in a short-term opportunistic manner and not maximize the level of effort promised in the beginning, thus generating a form of moral hazard. The most extreme example of moral hazard is represented by fraud. In this way, the market may fail in deterring investors from allocating capital in value-destroying projects. In addition to this, moral hazard may represent a consequence of agency problems incurred after the closing of the campaign. Hence, problems related to different visions of the company between the principal (investors), and the agent (management of the firm), are related to information asymmetries existing. In this case, problems also occur when principals and agents have different attitudes towards risk, which may lead to preferring different actions. This is even more evident when ECF is compared with listed corporations, in which there exist corporate governance frameworks as monitoring tools in order to keep incentives aligned between owners and management (Wetterhag and Décarre, 2014).

When studying market failures, it is relevant to also consider the possibility of failure due to a collective action plan. Since the investment levels are low, and consequently the potential benefits from investing are limited, investors may free ride on due diligence efforts by observing others and waiting for their valuation of the worthiness of the project. By doing so, and assuming that all investors can take this approach, the market will fail as soon as everybody waits and no one invests (Agrawal *et al.,* 2014). In order to avoid market failure for the reasons described above, the market has been designed by establishing rules, technical features and cultural norms. These regulations are intended to shape creators and funders' behavior as well as to achieve crowdfunding market efficiency.

*MARKET DESIGN*

Agrawal *et al.* (2014) reported four main market design mechanisms that deal with the reduction of information-related market failures in equity crowdfunding. These mechanisms are the following: reputation signaling, rules and regulation, crowd due diligence, and provision point mechanism. The first three tools aim at reducing information asymmetries between entrepreneurs and investors, thus they potentially overcome both moral hazard and adverse selection problem, while the last tool deals with the prevention of the collective action problem.

*Reputation signaling*

Financing of early-stage ventures and creative projects is traditionally characterized by due diligence executed through face-to-face interactions and personal relationships. Within the crowdfunding scenario, entrepreneurs tend to disclose as much information as possible in order to attract a large number of investors, while keeping as safest as possible sensitive information and intellectual property. By considering online markets, where personal relationships are intermediated by online platforms, trust and reputation assume a key role in establishing the success of a project and even to prevent fraud risk in online transactions. As regarding this, designers of online markets have offered many tools that establish trust through reputation, such as quality signals, feedback systems, and trustworthy intermediaries.

Quality signals is the most broadly adopted tool. It implies the supply of credible signals of quality by the participants of the funding, who can leverage brand reputation. Indeed, Waldfogel and Chen (2006), showed the relevance of brands in signaling quality in online marketplaces. Most importantly, in their report they stated that as information disclosure becomes more accessible, the brand importance diminishes. By looking within an equity crowdfunding scenario, signals of quality may be communicated through several ways, including the provision of warranties, patents in case of creative ideas, previous successful experience by the entrepreneur, and the level of education in the management team, such as share of executives with MBA degree. Secondly, feedback systems may help in building a reputation for individual buyers and sellers in online platforms. The idea at the basis of such systems is to allow market participants to rate their experience after a transaction occurred, for example consider eBay rating system through which buyers have the possibility to rate sellers. In this way, high ratings place further trust in the seller and investors will easily accept to pay a higher price. However, creators of CF campaigns normally do not raise capital repeatedly over short periods of time, thus making useless the community rates. A solution can be found for creators by splitting large projects into smaller milestones, and thus allowing contributors to give feedback and creating an online reputation (Agrawal *et al.,* 2014). Thirdly, third-party intermediaries may play a key role in providing quality certificates to sellers who are thus allowed to declare the quality of their project and create confidence among investors.

*Rules and regulations*

A second tool which can overcome information related issues, is given by setting rules and regulations, both at platform, industry, and government level. Crowdfunding platforms keep on adapting according to users' necessities and utilities in order to maximize transactions volume. In this way, online platforms showed constant evolution in their rules and requirements. An example is provided by Kickstarter, which after its settlement issued new rules in line with new necessities of users. Indeed, the platform tried to prevent frauds by allocating additional resources when founding a project, by requiring higher information disclosure for particularly risky investments, by taking steps to better set expectations for both founders and investors. In addition to these examples, CF platforms will continually modify their regulations and monitor users' reaction with the aim of finding an equilibrium between the maximization of information available to funders, and thus transactions volume, and the minimization of disclosure and administrative burdens on project founders (Agrawal *et al.,* 2014).

Industry and government rules include regulatory settlement issued by legal authorities in order to better regulate the market, to properly protect investors, to create incentive for creators to set up crowdfunding campaigns and to maximize transaction volumes while obtaining market efficiency. The regulatory framework is continuously in evolution, due to the lack of legal rules specifically issued to administrate equity crowdfunding campaigns. This is a consequence of the recent development of this financial practice, which is still in need of proper regulation from most of western countries, including Europe. The third chapter of this thesis will provide a focus on crowdfunding regulatory framework, at EU level as well as regarding solely the Italian scenario.

*Crowd due diligence*

The third solution proposed by the authors in order to overcome market failure is through crowd due diligence (Agrawal *et al.,* 2014). Since crowdfunding investors normally fund a much smaller stake rather than traditional investors, consequently they have a lower incentive to spend money and time in executing accurately due diligence, considering also that they do not even have competences and experiences required to do so (Schwienbacher & Larralde, 2010). Therefore, according to these assumptions, the situation described leads to the development of the free-rider problem.

Relying on crowd due diligence may represent a valid solution for detecting fraud or avoiding market failure, however such a tool may not be completely efficient, as is the case when the crowd is subject to herding behavior. As much of the literature has emphasized, crowd investors rely heavily on accumulated capital as a signal of quality and success of the project (Agrawal *et al.,* 2011), thus generating an information cascade. Herding behavior works as an informative signal of quality while it provides an important marketing function for the project and its creator as well, and it gives a "rational" basis to inexperienced investors to believe that a project is less risky only because other people already invested in such project before them. As the authors declared, this path dependence implies that funding success will solely reflect underlying project quality if early funders do a careful job in screening projects. In addition to this, the information cascade may be manipulated. An extreme situation is given by the possibility that creators exploit the path-dependent nature of investment by injecting capital in the early stages, thereby generating an information cascade, and consequently withdrawing their capital before the fundraising is closed. However, this represents only an extreme and marginal case, as platform regulations are intended to prevent and avoid such kind of crowd manipulation.

*Provision point mechanism*

As anticipated previously, mechanisms just described enable to overcome issues related to asymmetric information and opportunistic behaviors by founders after they had raised capital. Such tools provide information about quality, create incentives for effort, and minimize the potential for fraud. On the other hand, the provision point mechanism represents a tool properly created in order to avoid losses for funders due to the free-rider problem. In this way, the provision point mechanism implies that founders are going to receive the amount collected only whenever a threshold level is met or even surpassed, within a predefined period of time.

*EQUITY CROWDFUNDING PROCESS*

Equity crowdfunding implies some substantial differences with respect to the most traditional models of early-stage fundraising. Indeed, in the case of ECF, transactions are intermediated by an online platform, which consequently may play an active role in determining the success of the campaign. Online platforms not only operate during the effective capital raising process, but they also deal with post-investment activities (Wilson and Testoni, 2014). Investing in start-up ventures is normally risky by definition, inasmuch the expected results are only based on forecasts and previsions. However, backing a project through equity crowdfunding may be even riskier, due to the peculiarities of this kind of fundraising, including information asymmetries problems and the lack of competences and expertise by entrepreneurs. In this way, it appears particularly important to completely understand the process of such a tool, in order to properly evaluate the risks linked to it and the real possibility of investment success.

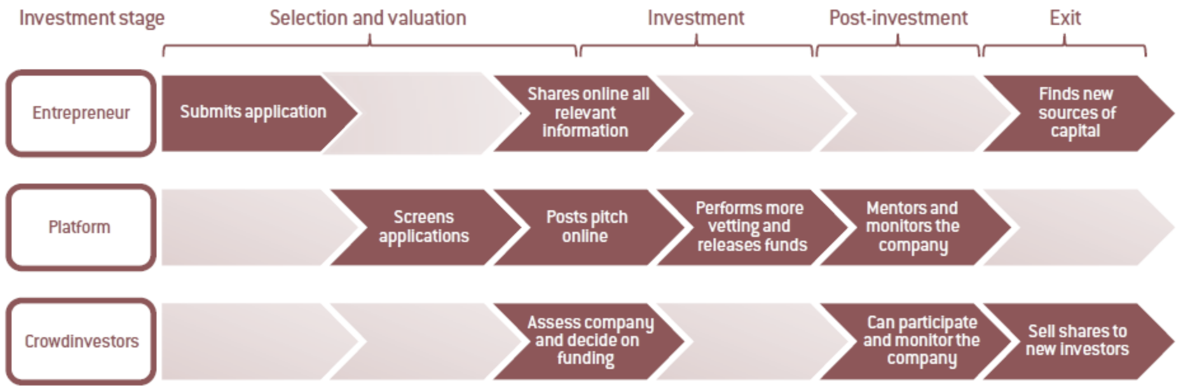


**Figure 2.5:** *The equity crowdfunding process,* Wilson and Testoni, 2014.

Wilson and Testoni (2014) have proposed a schematic way in order to better define ECF investment steps, thus identifying the risks correlated to each process (see Figure 2.5). In this way, both entrepreneurs and investors may properly evaluate the investment decision, avoiding losses and CF market failures. Each step of the process has been studied by making a comparison with BAs and VCs. Such tools are going to be deeper described following in this chapter, in order to have an even broader picture of the early-stage financing market and its implications.

*Selection and valuation*

The phase of selection and valuation of a project to finance has been completely changed through the implementation of ECF. Indeed, traditionally, business angels and venture capitalists executed accurate due diligence previous to the investment decision, relying on their expertise and capabilities on early-stage venture valuation, and perhaps also on their social relationships with potential members of the management of the new venture. However, such a process may be costly for the potential investor, both in terms of time and money, even though evidence shows that due diligence is a major determinant in achieving returns on the investment (Wiltbanks and Boeker, 2007). Nonetheless, this expense is justified in light of the considerable size of such investments. Though, crowd-investors normally execute relatively small capital injections, thus making an appropriate due diligence not worthy of the money and time spending (Wilson and Testoni, 2014). Moreover, ECF investors evaluate worthy investment by free riding on previous contributors' investment decisions, thus implying systematic underestimation of due diligence performance (Agrawal *et al.* 2014). Having said that, it is important to consider also that crowd-investors often lack competences to properly perform due diligence. Finally, as previously anticipated, Agrawal *et al.* (2014) observed also how company valuation performed by a crowd might be affected by social biases and herding behavior, making it even less rational, and which may consequently lead to overoptimistic expectations

(Mollick, 2013). However, valuations performed by the crowd may benefit from the "wisdom of crowds", concept proposed by Surowiecki (2004) and described in the first chapter of the thesis. In conclusion, the crowdfunding industry is probably going to benefit from the so-called "big-data" paradigm (Agrawal *et al.,* 2014). In this way, it could benefit from its online basement, thus trailing data on investors from crowdfunding deals closed on the platform. Perhaps in the long period, the analysis of this data could enable CF platforms to provide better matches between investors and companies, so maximizing the correlation between the crowd and the product demand.

*Investment*

Despite equity crowdfunding investments normally rely on standardized contracts provided by the platform, they often need tailored contracts as they are backing seed and early-stage firms, thus requiring the alignment of entrepreneurs' interests to those of the contributors. By making a comparison with the traditional start-up financing tools, BAs and VCs commonly link their contracts to various covenants, such as anti-dilution provisions in order to protect their investment against down rounds, and to facilitate exit opportunities or liquidation preferences to obtain priority in the final distribution of value (Hornuf and Schwienbacher, 2016). In addition, business angels and venture capitals normally manage to reduce the risk exposure of their seed investment and to increase control over entrepreneur's behavior by splitting their financing into tranches. Such tranches are related to the achievement of defined milestones which must be reached by the entrepreneur and her/his fundraising campaign. However, these mechanisms are difficult to be applied in a crowdfunding setting.

Moreover, it is a commonly adopted strategy for venture capitalists and angel investors to diversify their investment portfolio in order to reduce the volatility of returns and reduce risk as well. Equity crowdfunding investors may be able to replicate this kind of business model, since crowdfunding platforms expose several projects on their homepage, thus proposing a high variety of investments and related riskiness. In this way, crowd-investors can freely decide in which project to invest and how to diversify their own investment portfolios to reduce their risk of returns. Despite this possibility offered by crowdfunding online platforms, non-professional investors are unlikely to have enough competences in order to establish how to properly diversify their investment portfolios. Besides, small investors typically do not finance huge amounts of capital, but they rather concentrate all their funds in a single venture (Wilson and Testoni, 2014). In conclusion, small investors are probably not able to participate in follow-on investment rounds. The failure to do so may imply the consequent dilution of such investors' shares, thus reducing their chances to attain a positive return from their project backing.

*Post-investment support and monitoring*

Once the target amount of capital has been collected, the start-up venture needs to manage the newly injected capital in order to generate value. In this post-investment scenario, the new management team normally looks for competences, support and perhaps monitoring on firm's operations, in order to make sure the company is efficiently managing its resources. By considering traditional seed capital providers, it appears that such kinds of tools are suitable for early-stage ventures not only because they inject huge amounts of capital, but also due to their active involvement in increasing the value of the company they are financing. There are reasons to believe that this kind of support provided by the crowd is likely to be less valuable than that provided by traditional and early-stage financiers. Indeed, crowd-funders may have less incentive to spend resources in providing active support since they are expecting low return for their monitoring actions (Agrawal *et al.,* 2014). On the other hand, in the case where too many investors choose to actively participate in the management of the start-up, this could generate excessively high costs for the company in order to manage a crowd of non-professional investors that want to take part in it. Moreover, in the case of ECF, the venture has limited capability to select its crowd-investors, and they may potentially have different managerial and ethical ideas on how to better perform the firm's activities, thus generating even more difficulties and inefficiencies.

Furthermore, information asymmetries problem characterizing crowdfunding campaigns persists in the post-investment phase, thus limiting the potential of the crowd (Wilson and Testoni, 2014). As previously anticipated, information asymmetries are a direct consequence of geographical distance between entrepreneurs and funders, that limits the execution of proper supporting and monitoring post-investment activities. Limiting distance barriers is one of the main characteristics of CF, which led to its huge expansions, but it also entails higher monitoring costs. This appears to be in line with the observation provided by Lerner (1995), who stated how venture capital funds tend to invest predominantly in corporates geographically close to them. Finally, the lack of social interactions between entrepreneurs and investors reduces the potential of reputation as a tool of quality signaling as well as a mechanism to incentivize the entrepreneurs to act in line with the interests of investors (Agrawal *et al.,* 2014). In some marketplaces, participants have low incentive to misbehave, as if they do so, they may be prevented from participating in the market in the future thanks to feedback systems which collect ratings from other actors. However, since ECF is often a one-time experience, s/he may have lower incentives for behaving correctly, thus leading to potential fraud. In order to prevent such misbehaviors, there are online intermediary platforms which actively screen companies.

Despite this, the issue remains when considering that not all platforms have the same quality standards.

*Exit*

It could likely happen that non-professional investors who fund an equity crowdfunding campaign are not adequately aware of the intrinsic characteristics of this kind of investment. Indeed, ECF investments often take 5-10 years or even more to produce a return, if any. In this way, crowd investors may not be aware of the long period their investment needs to produce an eventual gain, and moreover they probably do not realize that most of these investments are unlikely to yield any return. In addition to this, it is important to consider that equity investments are mostly long-term illiquid assets. (Wilson and Testoni, 2014).

Broadly speaking, when considering equity investments, a return is provided to investors whenever a positive exit strategy is planned at some point in time. Among the most traditional and valuable exit strategies, investors can consider liquidating their investment through an IPO, or even through a merger or acquisition (M&A). These exit strategies are commonly executed by VC funds. However, when considering BAs and ECF investments, implementing a positive and profitable exit strategy may take longer time or even it may be less likely to be realized. Indeed, VCs and the firms themselves commonly have an exit strategy planned from the beginning of the investment, and they proactively work towards making it a reality over a long period (Wilson and Silva, 2013). In addition to this, the lack of adequate due diligence before the investment decision and the weak support and monitoring during the post-investment phase, may generate higher risk associated with a profitable implementation of an exit strategy for equity crowd-investors.

*Types of funding rounds*

The large majority of successful start-ups have engaged in many efforts to raise capital through rounds of external funding. Funding rounds are defined as the provision of capital from outside investors; at the same time this represents an opportunity for them to invest cash in a growing company, in exchange for equity stakes or partial ownership of the company. In this way, Series A, Series B and Series C funding rounds are referring to the growing process of a business through outside investments (Reiff, 2020).[11] By investing in early-stage ventures, external funders, basically excluding family and friends, expect to obtain a return from their support. For this reason, nearly all investments made during funding rounds are arranged such that the investor or investing company, in the case of VC, retains partial ownership of the company, thus acquiring equity. In this way, whether the firm grows and becomes profitable, earnings will work as a reward to the investors for the funds provided. In his article, Reiff (2020) described five main crucial funding rounds, which are the following: pre-seed funding, seed or angel funding, Series A funding, Series B funding, Series C funding.

- ❖ Pre-seed funding, which is the earliest stage of funding, and for this reason it is not generally included among the funding rounds. Most commonly, during this phase the unique funders are the entrepreneurs themselves, as well as the closest friends, supporters and family. Depending on the nature of the start-up company itself, this funding round may take shorter or longer time. In most of the cases, investors at this stage do not inject money in exchange for equity in the company, but rather they take the investment decision because of feelings or social ties.
- ❖ Seed funding, which is the first official equity funding stage. This round normally happens when the company is at the initial idea stage, or as the entrepreneur has a prototype or a proof of the project s/he wants to develop, as well as there are some quantifiable signs that there is a demand for what could be offered (Bates, 2017).[12] Seed round and angel investments may happen at the same time, but the seed funding may also occur whenever the business needs additional support to start the operating activities and generate cash flow to cover at least all day-to-day running costs. In this way, seed funding supports the company to finance its first steps, including activities such as market research and product development (Reiff, 2020). During this phase there are commonly money injections by angel investors. Indeed, BA investors tend to appreciate risky projects, which have little or no track record and business plan solely based on market forecasts. During this phase, it is likely for the start-up to collect an amount of capital which ranges from $10.000 up to $2 million. (Reiff, 2020).
- ❖ Series A funding, which occurs whenever the firm needs additional funding. Once a business has developed a track record, including an established user base, consistent revenues, or some of the main KPIs, the company may opt for a Series A funding round with the aim of further optimizing its funds. In order to obtain funds in exchange for Series A shares, the company needs to present a reliable business plan that will generate long-term profit. Indeed, in Series A funding, investors are not just looking for innovative ideas, but they rather are aiming at finding firms with a great strategy which will lead to turn the idea into a successful, money-making business (Reiff, 2020). During this phase, venture capitalists may take part into the project.
- ❖ Series B funding, this funding round is mostly executed to implement the activity, to go further into the product development stage, and to expand market share. The most

critical difference between Series A and B funding stands in the participation of PEs and VCs specialized in later-staged companies, rather than the one focused on early-stage ventures as it happens in Series A funding round (Reiff, 2020). By this phase, the company is expected to have lower risk and higher valuation, thus making investors expecting signs of growth in revenue, product/service users, and success in the marketplace (Bates, 2017).

- Series C funding, which happens only in case of successful businesses. This funding round occurs when companies need additional resources to develop new products/services, expand in new markets, or even acquire new companies. Series C round focuses on scaling the company and making it successfully grow (Reiff, 2020). These rounds usually raise amounts for $10 million or even more.

Most commonly, a company will stop its external equity funding with Series C round, however it can happen for some ventures to find suitable the implementation of Series D and even Series E funding rounds as well. For most companies, though, a Series C round is enough to boost the company valuation in anticipation of an IPO. Indeed, at this point, companies enjoy valuations in the area of $118 million most of the time. These valuations are also founded increasingly on hard data rather than on expectations for future success. Companies engaging in Series C funding should have established strong customer bases, revenue streams, and proven histories of growth. By understanding the difference between each type of funding rounds, it becomes clearer the necessity of different funding tools, which vary from ECF, BAs, VCs for early-stage ventures, to VCs and PEs for later-staged companies. By following the funding steps, a company is progressing along the road to eventually become an IPO.

*The "nominee structure"*

The London based equity crowdfunding platform Seedrs proposed an ECF structure, which has been defined essential in order to properly manage the shares of startups on behalf of the underlying investors after an investment is completed and to ensure protection of investors' interests (Lynn, 2013).[13] Hence, a nominee structure becomes very important whenever the platform works as an intermediary between the company and the actual investors. Indeed, this arrangement leads the nominee to hold the legal title of the share for the benefit of another person. In other words, the intermediary platforms act as the legal shareholder, but at the same time it holds the shares on behalf of the various individuals who have invested in the company through the online platform. This arrangement is very similar to a trustee relationship, as well as to the structures used by stockbrokers and other types of intermediary platforms.

The employment of such structure is expected to generate benefits for both investors and start-ups. Firstly, it helps investors in their bureaucratic duties derived from their role of shareholder in various companies, as well as it supports them in coordinating their decisions and actions. Moreover, thanks to the nominee structure, the intermediary platform monitors the company to perform in compliance with its subscription agreement, to ensure investors' rights protection. Even start-ups benefit from the nominee arrangement as well as they only have to deal with the platform for administrative matters like consents and shareholder votes (Lynn, 2013). However, by applying this tool, the start-up can no longer take full advantage of feedback, experience, and enthusiasm the investors can offer. In addition to this, the nominee structure helps the company to better attract further private funds, such as BAs or VCs.

*EARLY-STAGE FINANCING OPTIONS*

Early-stage ventures in need of financing may find sources needed through several tools: the most adopted involve liquidity injections by family and friends, business angels, venture capitals or equity crowdfunding platforms. By looking at what De Buysere *et al.* (2012)[14] declared, equity investments through crowdfunding platforms appear riskier rather than VC investments, due to information asymmetries and lack of publicly available data in the most traditional sense. However, equity crowdfunding is becoming one of the most adopted tools for fund backing in the case of seed or early-stage venture, while venture capitals are mostly directed towards more mature and grown private companies which in turns need higher liquidity injections and experience. Another key difference stands in investors' motivations. In the case of start-ups, both crowd-investors and family and friends aim at exploiting investment opportunities as well as an entrepreneurial mix of emotional engagement and social return. On the other hand, in the case of more mature companies where higher funds are needed, VCs, PEs or IPO fit better since they can provide for higher funds and competences.

The European Business Angels Association (EBAN) published a detailed report showing the situation regarding early-stage investments in Europe in 2018.[15] By looking at the report, it appears that until 2018 the overall European early stage investment market was estimated to be worth 12.3 billion euros. In this scenario, business angels represented the biggest share of the investment market with 7.45 billion euros, equal to approximately 60% of the total market, followed by the early stage venture capital industry (4.13 billion euros), while equity crowdfunding investments showed an increasing trend since 2015 which at the time was expected to keep growing, as we are experiencing nowadays. Traditionally there have been three sources of equity funding for young innovative firms: founders, family and friends; angel investors; and venture capitalists (Wilson and Testoni 2014).

*Family, Friends and Fools*

Traditionally, the most common source of seed capital is represented by the money injected by the founder s/herself or by the closest members of her/his social network, namely family and friends. This category includes the so-called 3Fs: Family, Friends and Fools. The third subgroup is defined as investors who are especially risk-seekers and keen to invest in risky businesses (Wilson and Testoni, 2014). As previously anticipated in the first chapter of the thesis, family and friends are not always completely rational when deciding whether to invest or not in a specific project (Belleflamme and Lambert, 2014). Indeed, such kind of investment decisions may easily be taken because of social ties and moral obligations, thus making the funding even riskier and generating misleading quality signaling effects for external funders. In addition, despite one of the most important features of crowdfunding stands in its capacity to overcome distance-related frictions, it appears that the very first investments are commonly made by geographically related people, such as family and friends (Agrawal *et al.,* 2011).

By making a comparison with BAs and VCs, it is important to consider that these tools fill gaps for larger amounts, while the smallest amounts are provided by entrepreneurs themselves and the 3Fs (Lambert and Schwienbacher, 2010). However, the 3F category plays a very important role in signaling the quality of a project, whenever other crowd-funders rely on the accumulated capital to value the intrinsic quality of a start-up idea and to decide whether to invest or not. In these cases, the higher the amount provided by family and friends, the higher the possibility to hit the minimum target requested in the campaign.

*Venture Capitals*

Venture capital funds are typically one of the most adopted sources of seed capital for early-stage ventures. Such a tool has always been appreciated by entrepreneurs due to its capacity to bring both capital and managerial competences in the firm. Indeed, VCs provide extra-financial services, which enable the start-up to exploit its opportunities and generate value for its shareholders and the venture capital itself. Moreover, venture capitalists become actively involved in monitoring the companies in which they invest, and they perhaps also provide critical resources in order to create a sustainable competitive advantage, such as industry expertise, and valuable network of contacts (Hsu, 2004). Normally, VCs inject relatively high amounts of capital, and then they apply exit strategies in order to liquidate their stake and obtain positive returns. Despite its expanded adoption in financing early-stage ventures, VCs are now focusing more on later-stage investments, leaving an increasing funding gap at the real seed and early-stage firms (Wilson and Testoni, 2014).

By looking at investment preferences, venture capital funds normally concentrate on technology-based companies, which typically generate high-risk/high-return investments, while crowd-investors encompass high heterogeneous investment motives and preferences, thus making the investment spectrum relatively broader. Another difference between VC and ECF investments stands in preliminary information disclosure. Indeed, while for equity crowdfunding it is necessary for entrepreneurs to publicly disclose business ideas and strategy, firms which rely on VC investments only have to communicate their strategic plan to venture capitalists, keeping their intellectual property and innovative ideas outside from the crowd (Hornuf and Schwienbacher, 2016). Moreover, ECF does not necessarily involve an active financial intermediary that makes the investment decisions, while in the case of VCs financial intermediaries play a very active role. Indeed, venture capital funds pool financial commitments from institutional investors into funds and successively select a portfolio of companies over time in which they invest. On the contrary, in the case of ECF, the decision to finance a company is ultimately made by the individual investor (Wilson and Testoni, 2014). Moreover, while ECF investors execute weak due diligence, venture capitalists spend relevant time and money in performing proper due diligence, in order to make sure the investment project they are taking is valuable. These expenses are normally justified in light of the considerable size of the investment they are going to assess. Furthermore, in order to reduce risk exposure over time, venture capitals normally include various covenants in their contracts, aiming at being protected against down-rounds or facilitate exit opportunities (Hornuf and Schwienbacher, 2016)

*Business Angels*

The EBAN defines a business angel as a private individual, mostly high net worth, usually with business experience, who directly invests part of his or her personal assets in new and growing unquoted businesses.[16] Angel investors are thus defined as experienced entrepreneurs or businesspeople that decide to invest their own funds into a new developing company. These investments typically are focused on seed and early-stage ventures and include amounts ranging from $25.000 to $500.000. They are commonly net worth individuals who are also sophisticated investors, while crowd-investors are mostly individuals with lack of financial experience. The importance of angel investors has increased during the recent years since the expansion of the funding gap experienced by SMEs. Indeed, BAs are considered as a form of alternative finance for innovative firms unable to obtain financing from credit institutions or bank loans (Wilson and Testoni, 2014). As it happens in the case of VCs, business angel's investments are not limited to the provision of financing, but rather they also inject entrepreneurial competences as well as further critical resources (Hsu, 2004). By looking at investment strategies applied by

BAs, they may perhaps invest through group syndicates, thus collecting even higher amounts of funds and providing enough capital for start-ups to start their production.

By looking at similarities between BAs and ECF investors, it appears that both the categories not only aim at financial return, but rather they are also looking for social and emotional benefits. In other words, they are likely to be motivated in injecting funds in a company with the goal of being connected with an entrepreneurial venture that shares their own values, vision, or interests. Moreover, both these financing categories are related to the avoidance of active financial intermediaries. Indeed, neither type of financing model requires the involvement of an active financial intermediary in order to make the investment decisions, but rather both BAs and ECF backers made the decision to invest by themselves as individual investors (Wilson and Testoni, 2014). However, differently from what happens in ECF, angel investors tend to participate locally in projects which are directly related to their network of contacts. Indeed, traditional angel investing transactions rely mostly on word-of-mouth promotion. On the contrary, ECF investors take profit from geographically distant projects (Agrawal *et al.,* 2011).

Broadly speaking, authors in the literature proposed a sort of analogy between equity crowdfunding and business angel investors (Wetterhag and Décarre, 2014; Wilson and Testoni, 2014). Despite the market for BAs is much larger than the one for ECF until now, both the two financing tools present some similarities. Indeed, both are based on private individuals making their own investment decisions in exchanging money against shares of a firm, and both of the investing tools are primarily focused on investments in seed- or early-stage ventures. Figure 2.6 shows the main characteristics of each mechanism of early-stage funding described above, and it sums up the most critical differences which may lead investors to prefer one tool or another.

| | Equity crowdfunders | Business angels | Venture capitalists |
|---|---|---|---|
| Background | Many different backgrounds, many have no investment experience | Former entrepreneurs | Finance, consulting, some from industry |
| Investment approach | Investing own money | Investing own money | Managing a fund and/or investing other people's money |
| Investment stage | Seed and early stage | Seed and early stage | Range of seed, early-stage and later-stage but increasingly later-stage |
| Investment instruments | Common shares | Common shares (often due regulatory restrictions) | Preferred shares |
| Deal flow | Through web platform | Through social networks and/or angel groups/networks | Through social networks as well as proactive outreach |
| Due diligence | Conducted by individual, if at all, and sometimes by the platform | Conducted by angel investors based on their own experience | Conducted by staff in VC firm sometimes with the assistance of outside firms (law firms, etc.) |
| Geographic proximity of investments | Investments made online: most investors are quite distant from the venture | Most investments are local (within a few hours' drive) | Invest nationally and increasingly internationally with local partners |
| Post investment role | Depends on the individual investor, but most remain passive. Some platforms represent the interests of the crowd | Active, hands-on | Board seat, strategic |
| Return on investment and motivations for investment | Financial return important but not the only reason for investing | Financial return important but not the main reason for angel investing | Financial return critical. The VC fund must provide decent returns to existing investors to enable them to raise a new fund (and therefore stay in business) |

**Figure 2.6:** *Key characteristics of equity crowdfunders, business angels and venture capitalists*, Wilson and Testoni, 2014.

*SOCIAL OUTCOMES OF EQUITY CROWDFUNDING*

The implementation of ECF may not only represent an opportunity for fundraising, in terms of alternative finance, but it can also provide an opportunity to improve social welfare. Indeed, the opening of a new marketplace to facilitate the exchange of capital for equity in small new ventures, will likely generate outcomes in terms of social welfare and innovation. The expectations of positive externalities generated by equity crowdfunding are further proved by the support provided at government level, through the JOBS Act firstly and through the implementation of ad hoc regulatory framework in most of western countries.

Firstly, ECF will generate social benefits of two types. Indeed, it will lead to private gains from trade as well as additional gains associated with benefits to others that result from the trade (Agrawal *et al.,* 2014). In other words, equity crowdfunding will lead entrepreneurs and funders to freely exchange equity for cash. Consequently, given crowdfunding's focus on innovative start-ups, there are reasonable expectations of significant spillover externalities of the type commonly associated with innovation development. However, ECF may generate social loss by relaxing traditional regulation aimed at managing safe transactions and sale of securities, to protect investors and creditors from fraudulent activity as well as inexperienced entrepreneurs. The second social outcome identified by Agrawal *et al.* (2014) stands in the capability of ECF to promote the creation of valuable innovative start-ups. Equity crowdfunding plays a crucial role in this scenario by changing the way in which capital is allocated among innovative new ventures, and by giving the possibility to limit the impact of geographical distribution of such innovative ventures looking for seed capitals. In this way, ECF is an important tool to finance valuable projects that have disproportionately less access to financial capital relative to their stock of human capital, and which are located in regions that lack a sufficiently active market for follow-on capital.

## CHAPTER III - REGULATORY FRAMEWORK AND MARKET TRENDS

The actual rise of crowdfunding implementations has raised awareness of and interest in its potential. From a political point of view, it is now broadly agreed that crowdfunding should be highly promoted as it offers a powerful alternative means for channeling money flows toward small and medium and perhaps innovative enterprises. Consequently, these firms are recognized as an increasing source of growth and job creation, but at the same time they are facing difficulties in fundraising. In this perspective, CF regulation is now one of the most debated items in the financially developed countries, which are looking for obtaining the most appropriate regulatory framework, trying to develop a global market for CF campaigns as well.

Within the European Union (EU), though, crowdfunding policies are still restricted by each national regulatory provision, which delineated the creation of tailored provisions for each national scenario. However, as stated by Belleflamme and Lambert (2014), it is broadly recognized that only an EU level initiative would potentially open up the market for crowdfunding, as well as it could really level the playing field amongst European countries. Furthermore, this is particularly true in the case of equity crowdfunding, as it represents a powerful tool for alternative finance and injections of risk capital in start-ups companies. Indeed, innovative firms not only operate on a local basis, but rather they overcome national geographical barriers, and the crowdfunding market should go in this direction as well.

In the second part of this chapter, it will be described ECF market trends. This section will mainly focus on the Italian market, as the thesis is mostly oriented to study this new scenario and the impact that ECF has on firms which apply it.

### *THE REGULATION OF CROWDFUNDING IN THE EUROPEAN UNION*

It is commonly agreed that investor protection plays a crucial role in the development of efficient and active financial markets, however literature shows the possibility that too strong investor protection may also harm small firms and entrepreneurial initiatives. Moreover, it is important to also consider the impact that alternative early-stage financing tools have. Indeed, optimal regulation for ECF also depends on the availability of BAs as well as VCs financing.

As suggested by La Porta *et al.* (2006), securities regulation acts as a driving policy tool which ensures strong investor protection. Consequently, whenever investors feel that their investments are safe and protected, they normally tend to invest more and more, thus leading to the stock market development. By looking at the recent history of financial markets, it appears that traditionally, stronger securities regulations have been issued in response to shocks in the financial scenario, such as financial crisis, accounting scandals, corporate governance problems as well as financial innovations. An example could be provided by the Securities Act of 1993 and the Exchange Act of 1934, which have been adopted by the United States Congress in response to the stock market crash experienced by the US in 1929, generating the so-called Great Depression. The above-mentioned regulations were intended to reduce information asymmetries between securities issuers and creditors and therefore they aimed at protecting investors from fraudulent or low-value-creating investments.

Another important aspect of securities regulation is that it primarily concerns firms, as they try to place large security issues in the market. Indeed, firms must adapt their security issuance in order to fully respect the regulation and investors' protections. In this way, one of the most critical innovations brought by equity crowdfunding stands in its capacity to enable small entrepreneurs as well as small investors to have access to the general public (Ahlers *et al.,* 2015). While in the past it was unlikely that small entrepreneurs accessed general public contributions, due to high transaction costs, equity crowdfunding has changed the scenario, providing this new opportunity to all kinds of firms. Indeed, the crucial innovative impact stands in the increased availability of external finance for SMEs as well as the access to such investment opportunities for small investors. This potentially happens in all countries that allow the solicitation of the general public without the issuance of costly prospectus (Hornuf and Schwienbacher, 2017). However, this framework has consequences both from a financial and from a legal point of view. From a legal standpoint, the true innovation deals with the different approaches needed in order to regulate small firms rather than large ones as it was before. Indeed, small firms are most likely to benefit from availability of exemptions, which consequently require compliance with prospectus and registration requirements as well as responsibilities definition within the management team. Therefore, as proposed by Acs *et al.* (2016), the new scenario implies the implementation of a new legal perspective, that examines the impact of country-specific institutional arrangements on the pursuit of micro-level opportunities to create and fund new firms.

*The United Stated as pioneers: the JOBS Act*

The United States has been one of the pioneer countries which started to issue a proper legislation to specifically regulate ECF. For this reason, it will firstly be shown the concept proposed by the Congress and the impact generated by the JOBS Act implementation. Indeed, after this, most of the developed countries including the ones belonging to the European Union, started to sign into law new and specific regulations to handle ECF and its share and cash transactions, as well as to protect investors who were taking part in it.

The US is nowadays the country in which there are the highest transaction volumes related to crowdfunding activities, thus emphasizing the necessity to better regulate such an increasing market sector. However, until 2015, not all the so-called retail investors, namely small investors who compose the crowd, were enabled to access alternative finance, as well as not all small entrepreneurs could afford transaction costs needed to employ this tool. In this direction, in 2012 the Jumpstart Our Business Startup Act (JOBS Act) was signed into law, theoretically enabling non-professional investors to take part into fundraising campaigns through crowdfunding tools. In 2015 the Security Exchange Commission (SEC) issued the effective regulation.

Traditionally, one crucial rule of the US securities law refers to the mandatory registration of the securities with the SEC in order to be offered to the general public. This aimed at protecting potential investors. In this scenario, there were some particular exemptions especially thought to account for the needs of small offerings. Exemptions may include, for instance, accredited investors who can fend for themselves or public offers up to $5.000.000. However, such exemption was not available for the use of equity crowdfunding since the registration at the state level was required anyway. This made particularly expensive the creation of a geographically dispersed offer (Hornuf and Schwienbacher, 2017). In this scenario, the SEC issued detailed rules specifically tailored to equity crowdfunding. One of the most important parts of the JOBS Act stands in Title III, also referred as CROWDFUND Act. The SEC refers to it as *«amendments to the existing Securities Act rules to facilitate intrastate and regional securities offerings»*. More in detail, such rules were intended to *«assist smaller companies with capital formation and provide investors with additional protections»*.[17] Thanks to the innovations brought by the Title III, companies can now collect an overall amount of up to $1.000.000 during a 12-month period without any requirements of registration with the SEC or at the state level. This exemption, though, requires the existence of three conditions in order to be applied: firstly, the usage of a broker-dealer or a funding portal; secondly, there are limitations on the amount that can be sold to individual investors; and lastly, there are disclosure requirements for the issuers.[18] According to such legislation, the issuer can avoid the registration with the SEC only in the case where the transaction between entrepreneurs and investors is intermediated by broker-dealer or funding portal, thus making the intermediary working as a private gatekeeper, that is supposed to ensure the correctness and completeness of the securities issued. On the other hand, the JOBS Act leads to some confused roles, since it does not make an explicit provision about the liability of funding portals in the case of material misstatements or omission of material facts by the issuer (Hornuf and Schwienbacher, 2017). In addition to this, the legislator stated some limits in order to better ensure correctness of the securities issued as well as investors' protection. In summary, the JOBS Act has regulated equity crowdfunding legislation, by establishing a maximum value for offers without a prospectus and also by setting thresholds for the amounts an individual can invest. Furthermore, the JOBS Act required information disclosure as well as the establishment of a private gatekeeper, namely an online platform.

*EU legislative environment*

Recently, EU is becoming more and more aware of the importance of crowdfunding development, and it is starting to introduce specific provisions to provide proper regulation and improve certainty and protection among both entrepreneurs and investors. European Union considers ECF as a valuable tool to enhance economic growth, in terms of investments, innovations, job occupation and higher choice selections for credit users. However, European Commission pointed out some problems related to ECF, which are linked to the lack of awareness, intellectual rights protection, fraudulent behaviors, consumer protection, and also legislative uncertainty due to the absence of appositely issued ECF provisions (Iosio and Valentinuz, 2016).

Nowadays, EU member states have several different ECF legislations, without any proper coordination which promotes cross border investments. The European Commission described the legislative situation by saying that *«the EU market for crowdfunding is underdeveloped as compared to other major world economies. One of the biggest hurdles faced by crowdfunding platforms seeking to offer their services across borders is the lack of common rules across the EU. This raises compliance and operational costs and prevents crowdfunding platforms from expanding»*.[19] In this scenario, there are some national legislation which are not yet properly thought to specifically regulate equity crowdfunding, but rather they have been solely modified just to be adapted to new necessities. By looking deeper in detail, it appears how each national state is signing into law autonomously, taking the local market context and the expectations and requests of citizens as proxy for decisions. This way of acting led to numerous legislations presenting some significant differences related to the basic aspects in the various countries. Such differences are concerning, for instance, methods of accessing the market (minimum or maximum thresholds), platform regulation (generally favorable from a national perspective but not from an international perspective), tax treatment and requirements of transparency and investor protection.[20]

According to what was declared by the European Economic and Social Committee (EESC), it is necessary to find a common regulation of crowdfunding, especially in the case of ECF. This choice would enable the creation of a unique European market, and consequently would lead platforms to efficiently operate in cross border operations. The Committee is responsible, for example, for adopting common rules for the functioning of crowdfunding within EU state members, for investor protection, for the remote sale of financial instruments through the Internet, for orders cancellation.[21] At the same time, EESC is aware of the risks related to excessive regulation, which could potentially block the market and its transactions. Indeed, ECF legislation must be thought for enabling fundraising for SMEs, which have different necessities rather than large multinational companies. SMEs need regulations which enable them to obtain funds from all over the world, thus legislations must be efficient and flexible at the same time. Furthermore, SMEs are normally not able to sustain high costs related to the adaptation to complex legislations, which consequently need to be as simple as possible. In addition to this, EESC is aware that a more uniform legislation would generate higher trust on alternative finance among savers and investors, thus leading to higher development of such tools, including equity crowdfunding, and to the generation of better possibilities of credit for small and medium European enterprises. In this direction, one of the main goals of European Commission is to create a sort of brand for crowdfunding operations.[22] Thanks to such EU "quality brand", both entrepreneurs and investors would know that the campaign has been set according to specific legislative provisions, properly applied to reduce the risk of fraud and increase trust in investors.

By considering entrepreneurs' point of view, it appears that they are wishing to obtain legislation which allows them to operate in an easy and fast manner, in a situation of regulatory certainty. Thus, they are aiming at the implementation of a unitary regulation in a European context that reduces the excessive fragmentation of regulations at the local level and enhances transparency and efficiency (Iosio and Valentinuz, 2016). On the other hand, investors have different objectives regarding the regulation as well.

By a study conducted by Wardrop, Zhang, Rau and Gray (2015), it appears that the legislation available until now does not provide a uniform feedback in ECF users.

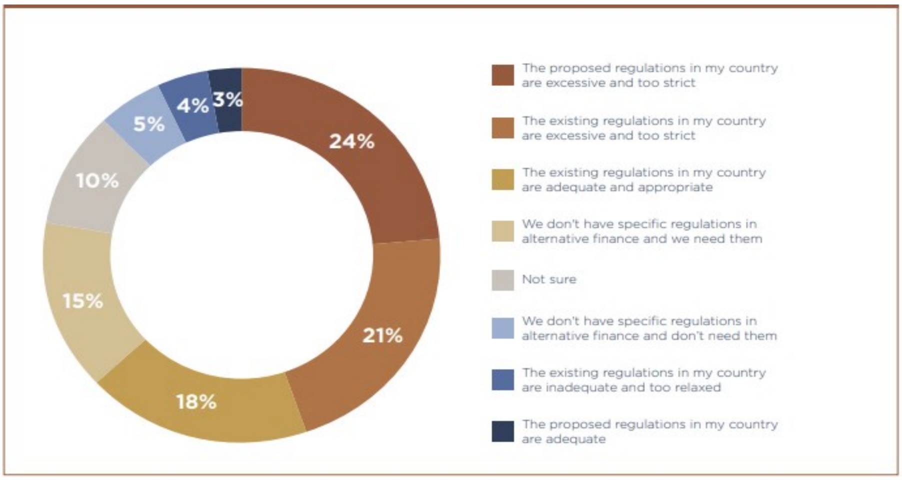


**Figure 3.1:** *Industry perspectives on regulations in a European context,* Wardrop *et al.,* 2015.

By looking at Figure 3.1, it appears the width of the range including various perceptions of ECF users in 2015. In this scenario, the 21% of the interviewed people had the perception that the existing regulations were excessive and too strict, in line with the necessity of relaxing legislation stated above in this chapter. Finally, we can consider what said by Steven Major as chair of European Securities and Market Authority (ESMA) in 2015, who declared the concrete intention of EU to lower companies' dependence on banking credit-system, trying to increase the active participation in capital market also from retail investors, and to develop a European capital market wider and more interconnected. In this direction, setting European provisions would enable online platforms to operate at a European level and in all member states with the requirement of a unique authorization.[23]

On September 30, 2015, the European Commission published its Capital Markets Union (CMU) Action Plan.[24] The plan aims at having benefits for both firms and investors: it wishes to deal with investment shortage by increasing and diversifying the funding sources for European businesses, especially in the case of SMEs, as well as it focused on the development of more options and better returns for savers and investors. The plan's focus stands in crowdfunding regulations. Indeed, European Commission was aiming at being able to act in a timely manner in order to properly discipline equity crowdfunding campaigns, thus requiring convergence of regulatory approaches in the member states. In this direction, CMU was intended as a tool to create an appropriate regulatory system that improves cross-border access to information on the companies looking for credit, quasi-equity and equity structures, with the objective of increasing the adoption of non-bank financing models, including crowdfunding (Klöhn, 2018). The focus of the regulation environment is more on equity crowdfunding than on crowdlending, as, even though there is an active crowdlending market in Europe, it does not seem to be frequently adopted by start-up ventures, perhaps as a consequence of the fact that debt financing is unsuitable for firms without hard assets.

In conclusion, currently there are not any specific crowdfunding regulations at European Union level. Notwithstanding, there are several legal acts that establish the general regulatory framework for equity crowdfunding, such as the prospectus requirements and financial intermediaries' regulation.

*Prospectus requirements*

The standard tool adopted by Securities Regulation in order to limit information asymmetries between issuers and investors is information disclosure requirements. This tool aims at providing investors with as complete as possible information prior to the investment decision. Such information is required to be disclosed in the form of a prospectus. Furthermore, this obligation is normally enforced publicly, most of the time by the state, which requires issuer companies to submit the prospectus with the competent authority before offering the market securities (Klöhn, 2018). Securities laws are generally supplemented by the action of private law, as it is impossible for regulators to verify all the information they receive within a reasonable period of time. More specifically, private law enforcements are specifically employed in order to regulate prospectus liability related to material omissions or misstatements contained in the documents or even in the case of complete failure to submit a prospectus with the competent authority prior to the offer.

As regarding prospectus requirements, the European Union issued two main regulations: the EU Prospectus Directive and the accompanying Prospect Regulation, which are intended to set rules for the public side of the above-mentioned regime and also set out some basic duties for the private law side. The Prospectus Directive is a legal act which needs to be implemented by the member states, as it is not directly applicable in each national legislation; on the other hand, the Prospect Regulation is directly applicable in all member states without any necessity of implementation by the singular nation. Firstly, the Prospectus Directive[25] provides that prior publication of a prospectus is mandatory in order to offer securities in the market. Moreover, it states that the prospectus shall not be published until it has been approved by the competent authority of the home member state. In addition to this, the Directive provides parameters under which the prospectus shall be prepared, indeed, it has to contain all information which, according to the particular nature of the issuer and the securities offered, is needed to enable investors to assess the value of the company, of its assets and liabilities, financial position, profit and losses. Secondly, the Prospect Regulation[26] is enforced in order to set minimum requirements regarding what information must be disclosed, the format of the prospectus, the modalities of disclosure, the methods of publication and dissemination of the document. One of the most relevant characteristics of these European regulations stands in the fact that, once the company's prospectus has been approved by the competent authority of the home member state, it has automatically validity for a public offer in any host EU member states. This scheme of mutual recognition in the European Union is commonly known as the "European passport" (Klöhn, 2018).

As stated previously in the chapter, within the legislative environment, exemptions play a crucial role in determining the effective possibility of relaxing fundraising for SMEs. By looking at the exemptions included in the Prospectus Directive, they allow to be exempted from publishing a prospectus in the case when: (i) the offer is addressed to solely qualified investors; (ii) the offer is addressed also to non-qualified investors which in turn are no more than 150 natural or legal person per member state; (iii) investors purchase securities for a total consideration of at least €100.000 per investor; (iv) the offer securities represents a total consideration of less than €100.000 over a 12-month period (Hornuf and Schwienbacher, 2017). Finally, the Directive allows member states to forgo the requirements of prospectus disclosure as long as the total consideration of the offer is less than €5 million. In this scenario, member states must exempt offers from the prospectus requirement if the total consideration is less than €100.000 and they must require it if the total consideration is €5 million or more. However, there is uncertainty for the offers which stand within that range between €100.000 and €4.99 million: in such cases member states can choose what legislation to adopt, requiring or not prospectus disclosure (Klöhn, 2018). In addition to this, it is important to consider that the Prospectus Directive only refers to securities as stocks (common or preferred) and bonds, thus excluding a big pie of the capital market securities. Such securities offers must be regulated by national laws, which in turn may or may not require prospectus publication prior to the offer. In conclusion, there is absence of a single unified prospectus regime in the EU, but rather there are several different domestic regimes, only partly harmonized by the European Directive.

By looking at start-up ventures in the specific, there is legislation uncertainty among investments contracts when considering what disclosed by Klöhn (2018):

- ❖ When start-ups offer transferable securities as defined by MiFID (Markets in Financial Instruments Directive, contained in European Directive issued in 2004), there is the application of the harmonized regimen, until the total consideration is less than €5 million and whether the member state in which the offer is taking place has chosen to exempt the offer from the prospectus requirement. Whether the consideration is less than €100.000, the exemption applies mandatorily.
- ❖ When start-ups place investment contracts which do not qualify as transferable securities, the EU Prospectus Regulation does not apply. In this case, national law will determine whether there is prospectus requirement. However, this will undermine legislative harmonization at EU level.

*Platforms regulations*

Platforms and financial intermediaries are regulated by provisions contained in the MiFID. Such European Directive was first issued in 2004, and it was then remodeled in 2014, therefore often referred to as MiFID II. Just like the Prospectus Directive, even in the case of MiFID, as a directive, it is not directly applicable, but rather it needs to be implemented by each national member state legislation.

Firstly, MiFID establishes requirements in relation to the authorization of financial intermediaries. In this way, the directive requires the provision of investment services to be subject to prior authorization by the competent authority per member state. After having received the authorization, the intermediary can freely provide investment services within the territories of all EU member states. As previously anticipated, this mechanism is commonly referred as "European Passport" (Klöhn, 2018). In particular, the Directive establishes such authorization aiming at protecting the financial market as well as investors participating in such market, indeed it says that *«persons who provide the investment services and/or perform investment activities covered by this Directive should be subject to authorization by their home Member States in order to protect investors and the stability of the financial system»*.[27]

Furthermore, MiFID establishes organizational requirements, for example concerning the compliance structure of the investment firms or measures to be taken to prevent conflicts of interests. In this way, the Directive makes as sure as possible that, when providing investment services, an intermediary firm acts honestly, fairly and professionally in accordance with the best interests of its clients and in compliance with all principles set by the EU Directive. Moreover, appropriate information shall be provided, regarding investment firm and services, financial instruments proposed and investment strategies, all costs and related charges. In addition, information must be provided in a comprehensible way in such a manner that clients are reasonably able to recognize the nature and the risks of the investment and, more generally, to take an investment decision on an informed basis. Intermediaries investment firms are also required to know their customers, in order to assess the investments more suitable for such customers, her/his investment possibilities as well as loss management capacity. Among this set of rules, there is no specific provision which is expressly directed to crowdfunding platforms. In this scenario, such platforms are considered as firms providing financial services relating to financial instruments. Therefore, the regulatory regime for crowdfunding platforms in Europe is just as divided as the prospectus regime (Klöhn, 2018).

As intermediary platforms are considered as financial intermediaries, specifically in the case of ECF, they must have enough initial capital in order to obtain the authorization. These capital requirements are governed by the EU Capital Requirement Directive (CRD) and the EU Capital Requirements Regulation (CRR). Moreover, ECF platforms which operate under MiFID legislature are subject to anti-money laundering and anti-terrorist financing rules regulated by the Anti-Money Laundering Directive.[28] Whether platform's activity qualifies as concluding distance contracts for financial services, then clients have the right to receive pre-contractual information in addition to a right of withdrawal within 14 days without justification, under the Distance Marketing of Consumer Financial Service Directive.[29] Lastly, whenever platforms or issuers process personal data, they will be governed by EU data protection legislation, namely the European General Data Protection Regulation.[30]

In conclusion, the EU lacks a harmonized regulation which specifically addresses crowd-investing, and the scope of application of EU securities laws regulating securities offers to the public as well as financial intermediation are limited. Indeed, within this legislative environment, there are several national regimes which discipline ECF without any coordination and harmonization. This leads to the necessity for the European legislator to set detailed new rules enhancing cross-border transactions and certainty among both securities issuers and investors. However, it has been shown that entrepreneurs who raise funds through ECF platforms are incentivized to disclose information even when it is not mandatorily required by the legislation, since they try to convince the crowd of investors that projects offered are valuable investment opportunities by virtue of simple reputation mechanisms (Wilson and Testoni, 2014).

*THE ITALIAN LEGISLATIVE ENVIRONMENT: CONSOB REGULATION*

Italy was the first European member state which signed into law regulations specific to equity crowdfunding practices. Indeed, on October 20th, 2012, the *Decreto Legge* called *"Decreto Crescita 2.0*" n. 179/2012 went into effect. Furthermore, starting from July 29, 2013, portals' managers were given the opportunity to register within the register established according to the *Testo Unico della Finanza* (TUF). Therefore, exemptions were established for innovative start-ups and, starting from 2015, also innovative SMEs that offer common equity shares via online portals (Hornuf and Schwienbahcer, 2017). Consequently, the exemptions included in the law enabled innovative start-ups and SMEs to make offerings of up to € 5 million without the obligation to register a prospectus. By looking at the definition of such firms, they are intended as firms which: (i) are not registered with a regulated market or a multilateral trading facility; (ii) the beginning of firm's operations should have taken effect no more than 48 months ago; (iii) the management location has to be located in Italy as well as the main business activities; (iv) the annual turnover in the second year of business does not have to exceed €5 million; (v) the main purpose of the company has to be solely to develop, produce, and sell innovative products or services with a high-technological value; (vi) the firm does not and did not make payouts to shareholders using previous corporate profits; (vii) the firm was not established as part of a merger, de-merger, or sale of a corporation or corporate entity (Iosio and Valentinuz, 2016). Furthermore, innovative start-ups are required to constantly update their web-site page, which must be done at least weekly. The online page has to describe minimum information settled by the legislator, and that include, for instance, the registered office location; a description of the activity carried out; an indication of the educational qualifications and professional experience of the shareholders as well as of staff; a list of industrial and intellectual property rights; a brief description of the activity carried out, including research and development activities and expenses; a list of investee companies; the latest financial statements filed.[31] Within the Italian legislative environment, Consob has the main role in governing and determining rules for ECF. Although it has established disclosure requirements and exemption for innovative start-ups and SMEs issuers, it has not yet defined which exemptions and critical threshold for issues without prospectus would apply for non-innovative start-ups and SMEs. Thus, this may lead to a situation of legal uncertainty for companies which are not classified as innovative according to the criteria provided by the definition. The figure below provides an overall view of ECF legislative evolution in Italy.

| Decreto | Principali innovazioni |
|---|---|
| D.L. 179/2012 'Sviluppo-bis' | • Le *startup* innovative possono raccogliere capitale di rischio su portali autorizzati dalla Consob, in deroga alla disciplina sulle offerte pubbliche<br>• Norme operative in carico ad un apposito Regolamento Consob |
| D.L. 3/2015 ('Decreto Investment Compact') | • Disciplina estesa alle PMI innovative e ai veicoli che investono prevalentemente in *startup* e PMI innovative<br>• Introduzione dell'opzione di dematerializzazione delle quote del capitale di *startup* e PMI innovative |
| Legge 232/2016 ('Legge di Stabilità 2017') | • Disciplina estesa a tutte le PMI secondo la definizione UE |
| Legge 145/2018 ('Legge di Bilancio 2019') | • Facoltà per le piattaforme di *equity crowdfunding* autorizzate da Consob di collocare *minibond* a investitori professionali in una sezione dedicata |

**Figure 3.2:** *Summary of the main legislative innovations introduced on equity crowdfunding from 2012 until today,* Politecnico Milano, 2020.

Consob prepared a specifically dedicated report in order to define and describe processes and regulate equity crowdfunding in Italy. Such specific attention has been dedicated to ECF as, by looking at Consob (2016) definition, it represents a truly innovation in the start-up phase and business developments, since it represents «*the possibility that a start-up or SME is given to present itself to a large audience of potential investors and raise the necessary financial resources for the implementation of the business plan*». Indeed, Consob started its report by declaring that the specific regulation of ECF starts from the idea that this tool has the peculiarity of shifting the emphasis on ideas and on people who, if deserving, can collect the necessary financial resources. Moreover, the validation mechanism of the business model by the online community, in one short-term perspective, could potentially raise the firm's rating so that it can be used by banks for granting credit to entities otherwise difficult to finance. In addition to this, according to Consob's vision on ECF implications, the filter of meritocracy brought by such fundraising tools will ensure that, progressively, science and technology become the real driving force of the economy. At the same time, Consob declared how it is realistic to expect, even on smaller projects, prospectus quality (business plan above all) higher than the current one and this will be accompanied by a growing maturity of entrepreneurial class that will become increasingly sensitive to issues of transparency information and verifiability of data.

Finally, equity crowdfunding has many similarities with an initial public offering (IPO), so it would be fair to see it as a first approach to the financial markets that, over time, can give life to one new generation of companies whose natural outlet is likely to be, firstly, admission to listing on smaller markets (dedicated for example to small and medium-sized enterprises, such as AIM Italia), and subsequently listing on regulated markets major (such as the MTA of the Italian Stock Exchange or equivalent foreign markets).

Broadly speaking, Consob has the duty to regulate and monitor online platforms. As already stated, online platforms are the main tool through which early-stage ventures can reach the crowd and collect funds through ECF. Indeed, the governing of such portals is only allowed to those subjects which have been authorized by Consob and have registered with it, or in alternative subjects which are bank or financial investment companies previously authorized. For subjects authorized by Consob, registration in the appropriate register takes place following the positive confirmation of the existence of the required requisites, including, for example, the legal form of a corporation; the possession by the controlling shareholders of the required integrity requirements; the possession, by the persons who perform administration, management and control functions, of the required integrity and professionality requirements; the presentation of a report on the business activity and on the organization structure (Iosio and Valentinuz, 2016). In addition to this, Consob stated some specific provisions properly issued to manage ECF platforms. Indeed, the managers of online portals registered in the ordinary section of the Consob register, which enjoy a less binding discipline than traditional intermediaries, cannot hold sums of money pertaining to investors, and they cannot carry out financial advisory activities towards investors, just as they are not authorized to directly execute the orders for the subscription of the financial instruments offered on its portals, while they have to transmit them exclusively to banks or financial intermediation companies (Consob, 2016).

The rules proposed by the Italian legislator also aim at protecting investors, focusing on small and non-professional ones. Indeed, with the object of protecting retail investors and making them aware of the characteristics and risks of the proposed investments, the portal registered in the Consob register must provide a variety of information on both itself, as well as on the general characteristics of the investment in risk capital issued by innovative start-ups, and on individual offers. Broadly speaking, Consob (2016) requires that individuals are provided with proper information about the platform, risks of the investment in innovative start-up, and individual offers. In particular, investors are expected to receive information regarding:

- the portal: (i) by who the portal is managed, and the activities carried out by it; (ii) how the orders for the subscription of the financial instruments offered are processed; (iii) transaction costs borne by investors; (iv) the measures prepared by the portal to manage the risks of fraud, conflicts of interest, complaints and the correct processing of personal data; (v) aggregated data on the offers carried out by the portal and the achieved results; (vi) the relevant legislation, the link to the register kept by Consob, to investor education section and to the special register section of companies dedicated to innovative start-ups; (vii) sanctioning or precautionary measures that Consob has adopted against portal management; (viii) initiatives taken towards innovative start-ups in cases of non-compliance with the portal's operating rules.

- ❖ the investment in an innovative start-up: (i) the risk of losing the entire capital invested; (ii) the peculiar illiquidity of the investment, thus the risk of not being able to quickly liquidate the investment; (iii) the lack of dividend distribution as long as the company is an innovative start-up; (iv) tax benefits as well as exemptions to company law and bankruptcy law; (v) the typical contents of a business plan; (vi) the right of withdrawal belonging to retail investors who can exercise it without any additional expense or reason within seven days from the date on online acceptance of the offer.
- ❖ individual offers: (i) a "sheet" with all the information that Consob has listed and related updates; (ii) banks and investment firms to which orders for their execution will be transmitted; (iii) the current account of the innovative start-up where the collected sums will be deposited; (iv) the information and methods for exercising the right of withdrawal from the offer that the Consob regulation attributes to retail investors in cases where facts occur influencing the investment decision (new facts on the offer or changes in the information provided following an error); (v) information on the status of subscriptions to offers, also giving information on the methods publication and updating.

In addition to this, before executing the investment, retail investors must read information belonging to the investor education section, fill an online questionnaire where they declare to be aware of information provided, declare to be economically able to sustain the whole investment in case of loss. Moreover, platforms cannot directly deal with funds raised, but rather they need to rely on a bank account or a financial intermediary, which in turns will register all the investors (Iosio and Valentinuz, 2016).

Here below, Figure 3.3 shows the mechanism which is activated whenever an ECF transaction takes place. The scheme shows how both investors and security issuer rely on the activity of the bank in order to collect the money, even though the overall transaction is executed through the interface of the online platform. They also benefit from the activity of financial consultants, which help in developing the best strategy. In this scenario, Consob works as a supervisory board, monitoring the overall transactions.

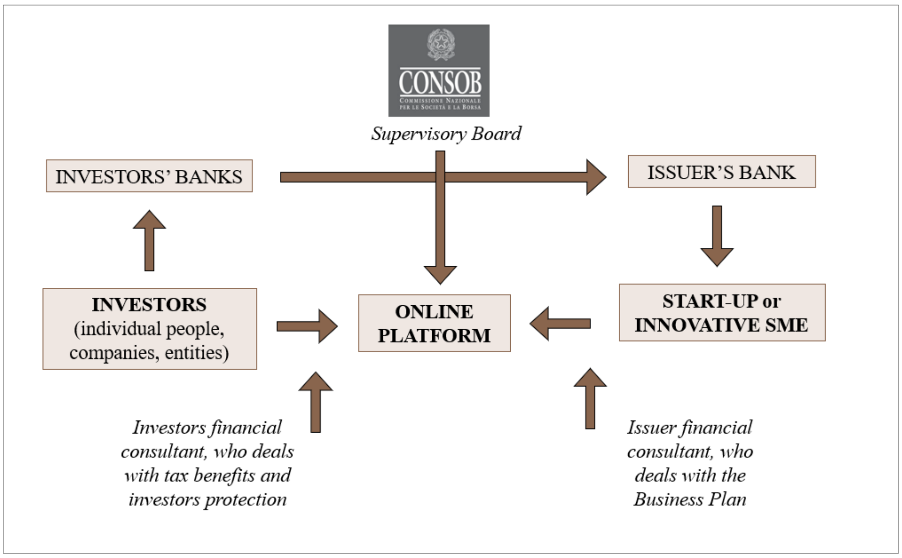


**Figure 3.3:** *Subjects involved in ECF transaction*, own elaboration based on data provided by Consob, 2016.

*DESCRIPTIVE STATISTICS ABOUT ECF IN ITALY*

Following the regulation of ECF through the "*Decreto Crescita*", such fundraising tool started to expand more and more, as an increasing number of SMEs started to implement it. By looking at the data available, it appears that from 2014 until now, the evolution and growth of ECF was almost exponential, both when considering new platforms creation, the number of campaigns and the amount collected. According to this exponential growth and adoption, the *Politecnico of Milano* started to publish every year a report named "Crowdinvesting Observatory", with the aim of studying and highlighting the main trends and figures of the year for both equity and lending crowdfunding.

As observed by several reports, 2020 is being a crucial year for the overall economy and for ECF campaigns as well. Indeed, Covid-19 effects are limiting the access to equity funds for both entrepreneurs and investors. The crisis the world is experiencing has generated upheavals in all short-term macroeconomic data, from industrial production to GDP, from government deficit to public debt, from productive investments to corporate margins. In this scenario, analysts expect medium-term repercussions linked to the survival of many companies, especially SMEs, which are going to face reduction of sales, supply difficulties and lack of liquidity (Politecnico Milano, 2020). However, Italian crowd-investing market reaches the overall value of the mobilized resources equal to €908 million, of which €159 million has been invested through equity crowdfunding, while the remaining part, €749 million, through the lending portals (which can be even split between €410 million to individuals and €339 million to businesses). The Politecnico (2020) reported that the contribution of the last 12 months concerning ECF was equal at €76.6 million, which represented a new historical record. Indeed, as shown in the report, until now there was not any substantially negative impact from the crisis in the crowd-investing market, which in turns has been re-evaluated as a source of "fast" liquidity for businesses, with respect to the slowness of public bureaucracy and of the banking sector. Even the website Crowdfunding Buzz[32] shows the increase in ECF campaigns. The figures here below aim at describing the main trends, by looking at successfully closed campaigns, the amount collected in euro, the average amount collected as well as the average investors that took part in the fundraising.

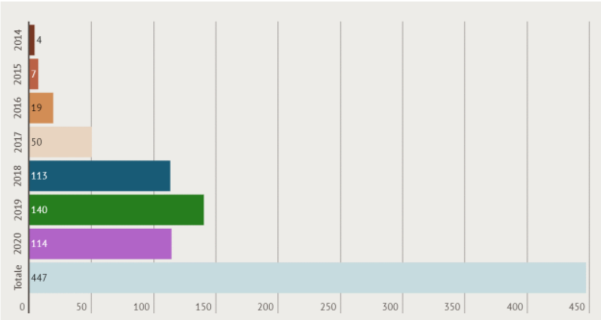


**Figure 3.4:** *Successfully closed ECF campaigns in Italy,* Crowdfunding Buzz, 2020

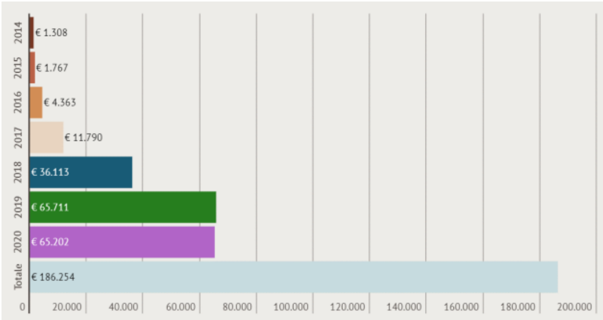


**Figure 3.5:** *Successfully closed ECF campaigns in Italy per euro collected,* Crowdfunding Buzz, 2020.

By looking at Figures 3.4 and 3.5, it appears how, starting from 2014, ECF phenomenon is expanding and becoming more and more adopted by companies. The number of successfully closed campaigns shows a positive trend, even though there is a deceleration experienced in 2020. Indeed, in 2019 there have been 140 successfully closed campaigns, while in 2020 they were 114. However, this slowdown has lower impact on the amount collected in the campaigns, which shows an increasing trend as well, with a lower stop in 2020. In this way, the amount collected in 2019 was € 65.711 thousand, while in 2020 € 65.202 thousand, implying that the lower number of successful campaigns collected a higher average amount of funds. Moreover, this mechanism is shown in Figure 3.6, which describes how the average amount collected per each project was the highest in 2020, compared with the previous years from 2014. Indeed, such an average amount was equal to € 572 thousand in 2020, while it was equal to € 469 thousand in 2019. It is also interesting to highlight investors participation's trend though the last years (Figure 3.7). In 2019, there was the highest average participation, while in 2020 the number of participating investors has reduced. Also, the participation trend shows a positive increase, in compliance with the overall ECF recent expansion following the application of a centralized regulation.

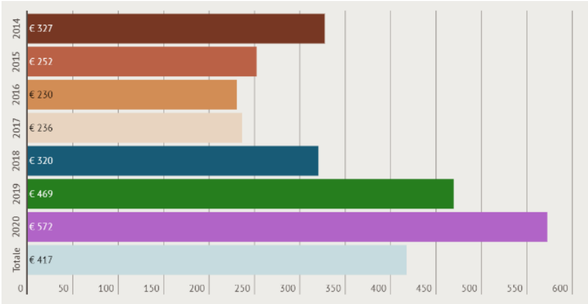


**Figure 3.6***: Successfully closed campaigns per average amount collected in Italy,* Crowdfunding Buzz, 2020.

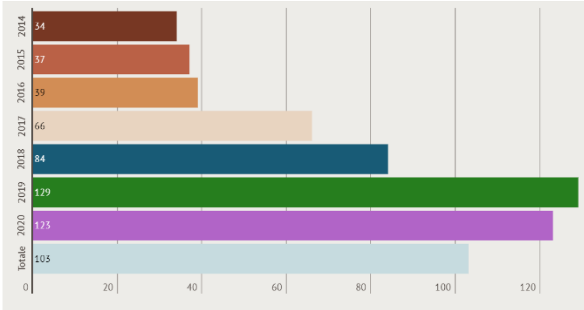


**Figure 3.7***: Successfully closed campaigns per average amount of investors in Italy,* Crowdfunding Buzz, 2020.

Crowdfunding Buzz also provides a graph which shows the trends in amount in euro collected and successfully financed start-ups by dividing the results by quarters, thus leading to a clearer picture of such trends. By looking at Figure 3.8, the red columns describe the amount collected in thousands of euro, while the blue points show the number of companies financed through ECF. By studying the figure, it appears how the ECF Italian market experienced a huge expansion starting from the first three months in 2019, which lasted until the first quarter in 2020. After this, the market shows a heavy slowdown, most probably due to the impacts of Covid-19 in the macroeconomic scenario of the overall world.

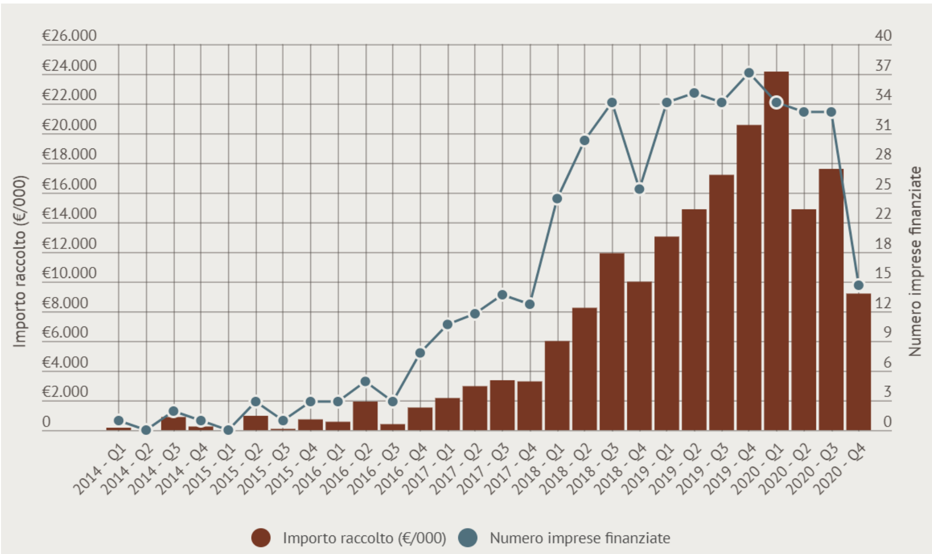


**Figure 3.8***: ECF quarterly trend in Italy,* Crowdfunding Buzz, 2020.

*Authorized platforms in Italy*

As of June 30, 2020, in Italy there were 42 authorized platforms of equity crowdfunding, 7 more than the last year, 2019. Among those authorized, 40 platforms were enrolled in the ordinary section of Consob register; while only 2 were currently inactive, which were Unicaseed.it and Tifosy.com, and were registered in the special section. The number of active platforms in Italy is still one of the highest within the European environment. Moreover, in the last 12 months, 9 new authorization have arrived, namely they are Crowdkasse.it, Crewfunding.it, Mybestinvest.it, Hensoo.it, Capital4solutions.com, Ecrowdengineering.com, Fundyourjump.eu, Activant.eu, Pariterequity.com, while the authorization for Crowd4capital.it and Italyfunding.com was deleted (Politecnico Milano, 2020). Moreover, the Italian panorama benefits from the activity of the *Associazione Italiana Equity Crowdfunding* (AIEC), that works as the exponential representative body of ECF platforms. In this scenario, it appears how many of the platforms are taking advantage of the new opportunities provided by the new legislation and the possibility given to place minibond debt securities. Fundera was the first platform to place minibond offers. Indeed, as of 30 June 2020, there were placed 4 securities for € 1.6 million with annual rates between 4% and 4.50% and 2 more other placements were in progress.

In addition, there are several positioning strategies that platforms can adopt in their fundraisings. Firstly, there is a cluster of portals that decided to verticalize specific sectors, which are for example, real estate, life sciences, energy, impact finance. A second tool is related to the target of investors. Indeed, almost all of the platforms are opened to the overall public of investors, giving the opportunity for each potential investor to observe and evaluate all information provided on individual campaigns. On the other hand, there are platforms, such as Clubdealonline.com, which follow the "club deal" model, so giving the opportunity to evaluate projects and companies only to a selected group of investors (mostly high net worth individuals, family office and institutional), who pay annual entrance fees. Moreover, there is an intermediate model, adopted by Doorway, according to which the open campaigns are visible to everyone, but only selected investors can obtain details in terms of business plan, collection target and evaluation (Politecnico Milano, 2020). Figure 3.9 shows the number of campaigns published in the mostly used platforms, describing the cumulated campaigns and the one executed in the last 12 months. The most active campaigns overall appear to be CrowdFundMe (118 closed campaigns in total), MamaCrowd (100) and OPstart (77).

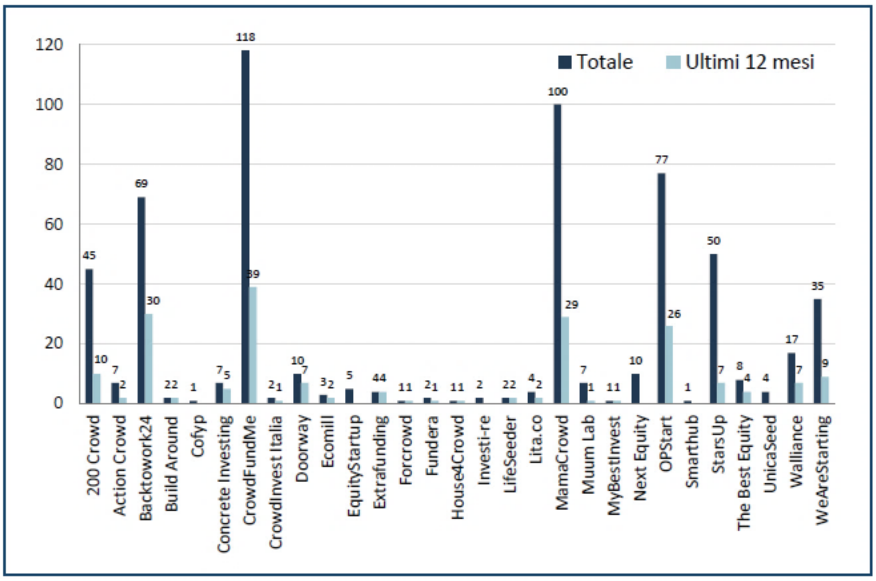


**Figure 3.9:** *Number of campaigns published by authorized equity crowdfunding portals in Italy, as at 30 June 2020: total cumulative value and flow of the last 12 months,* Politecnico Milano, 2020.

In addition, the following figure shows the collected amount per online platforms. In this perspective, the most successful platforms during the last 12 months have been CrowdFundMe, Backtowork24 and MamaCrowd.

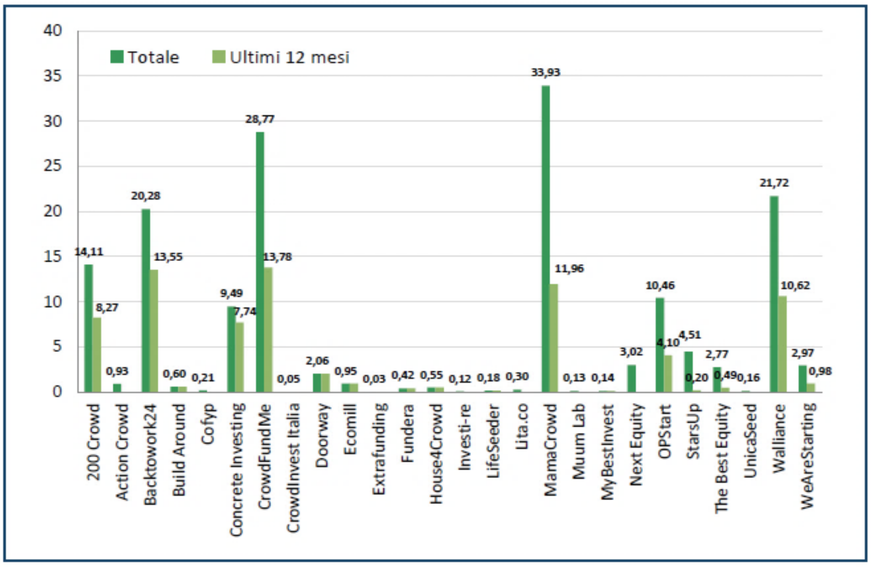


**Figure 3.10:** *Capital raised until 30/6/2020 from Italian equity crowdfunding platforms authorized by Consob, values in € million,* Politecnico Milano, 2020.

In conclusion to this chapter about descriptive statistics in the Italian scenario, it is interesting to point out the impact that the pre-money valuation has on the target amount of the activity and how the sources collected are then going to be exploited in the operating activities of the company. By looking at the pre-money valuation, it appears that for most of the start-ups it results for a value lower than € 1 million. This is in line with the assumption that ECF is mostly adopted by start-ups and innovative SMEs, which consequently face lack of liquidity and working capital, and thus need the fundraising in order to implement their operating activities and their strategy. However, ECF may also be implemented by more mature companies which in turns need to collect liquidity in order to develop an innovative product, or perhaps to re-brand their positioning. Figure 3.11 shows the pre-money valuation for companies during the year 2020, while Figure 3.12 shows the pre-money valuation trend, both in the years starting from 2014, and in the case of the last year, 2019. During the recent years, the trend appears fairly stable, with the majority of companies showing a pre-money valuation lower than € 1 million and between a value of € 1 million and € 5 million. As shown by Crowdfunding Buzz (2020), the higher the pre-money valuation, the higher the target amount which can be potentially collected by the company. In this way, the last graph in Figure 3.12 shows how the last year valuations included a lower percentage of companies valued below € 1 million while there was a higher number of companies valued more than € 10 million.

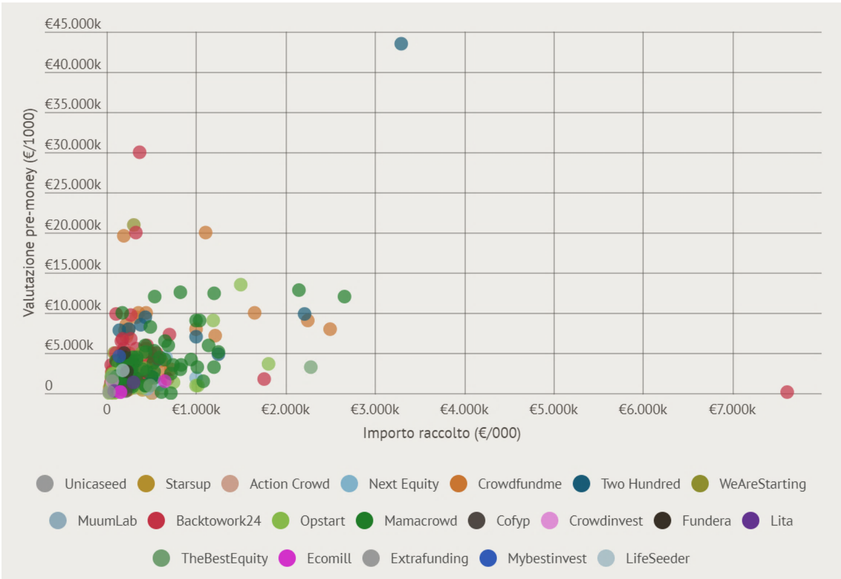


**Figure 3.11:** *Relationship between collection and evaluation of the financed companies,* Crowdfunding Buzz, 2020.

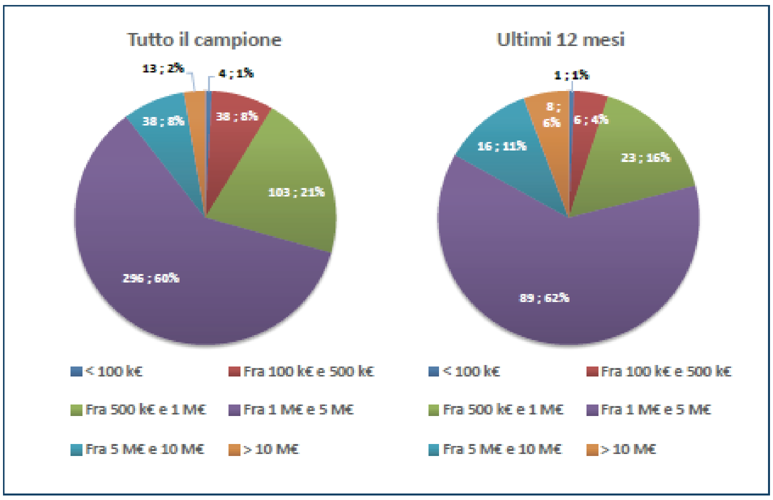


**Figure 3.12:** *Pre-money value attributed to businesses protagonists at the first equity campaign crowdfunding on portals authorized by Consob until 30/6/2020. Vehicles are excluded of investment and the real estate campaigns,* Politecnico Milano, 2020.

Finally, Figure 3.13 shows investment typologies financed through equity raising. The most frequent investment appears to be toward marketing activities, 49%; 30% of the cases there was the objective of financing the creation of an online IT platform or the release of an app; 27% of the funds are mostly directed to R&D expenditures as well as investment toward tangible assets and raw material acquisition; while 23% of business plan were intended to invest in new human resources. In the 16% of the cases the forecasted achievements were not specifically stated in the business plan, and this phenomenon showed an increasing trend during the last 12 months (Politecnico Milano, 2020).

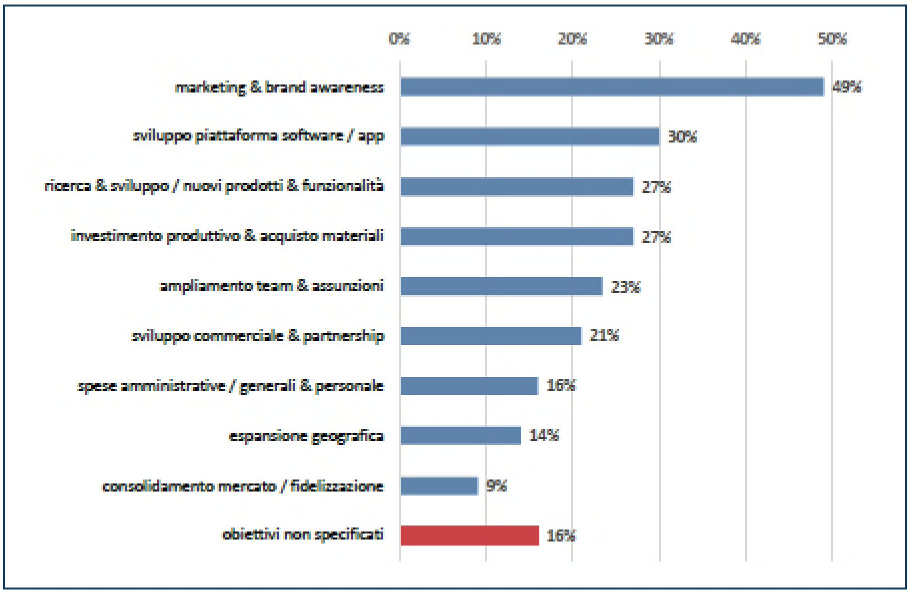


**Figure 3.13:** *Investment objectives cited by companies' protagonists of an equity campaign crowdfunding on portals authorized by Consob until 30/6/2020,* Politecnico Milano, 2020.

*Post-campaign results*

For what concerns post-campaign results, Politecnico of Milano (2020) reported some trends experienced by 547 companies which participated in ECF campaigns during 2020. Among 360 firms which succeeded in the first round, 30 of them have been able to collect further funds in another equity campaign, by employing a different online portal and starting the new fundraising with higher valuation multiples. Moreover, it has been analyzing ECF impact on firms' balance sheets, by considering data on revenues, EBITDA and profit.

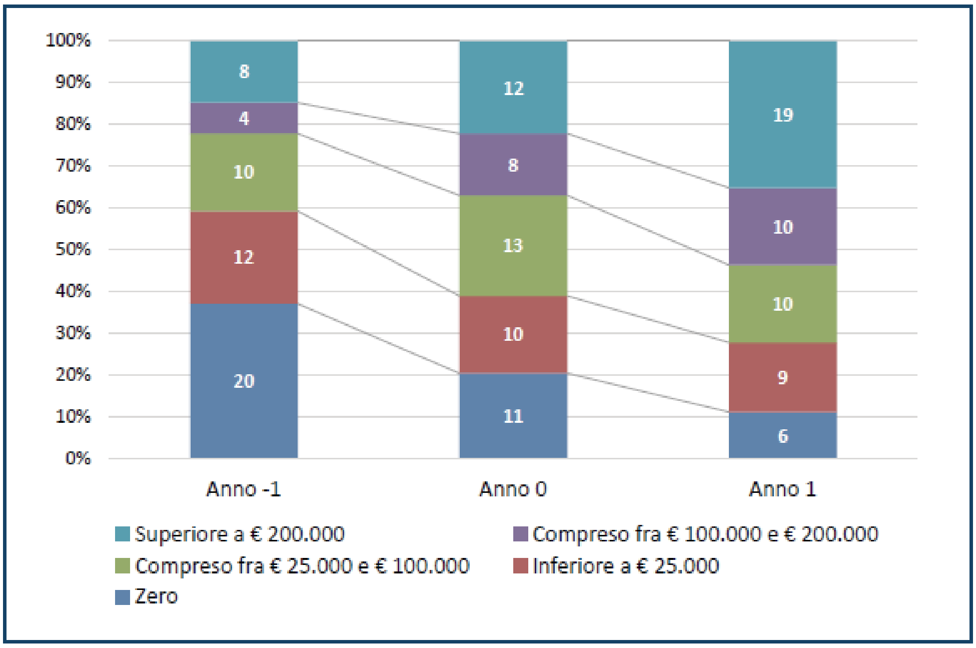


**Figure 3.14:** *Evolution of revenues from turnover for 54 companies' industrialists who have raised through equity crowdfunding since 2014 to 2017. Year 0 is that of the campaign,* Politecnico Milano, 2020.

Figure 3.14 describes revenue trends following the closing of the campaign. Year 0 refers to the year in which the fundraising closed. By looking at the figure, the scenario appears to be divided in two main situations: year 1 in which revenues are fairly stable and do not present any increase; on the opposite there are situations in which year 1 experienced a huge increase in revenues. Broadly speaking, companies with revenues almost equal to 0 went from 11% to 6% in the Year 1, which may be due to positive effects generated by the ECF campaign.

Figure 3.15 focuses on Earnings Before Interests, Tax, Depreciation, Amortization (EBITDA). Even in this case, the situation appears split in two main scenarios: one scenario in which companies increase their EBITDA, and an opposite one in which EBITDA remains of a low amount as a consequence of high expenses which basically set aside revenues generated.

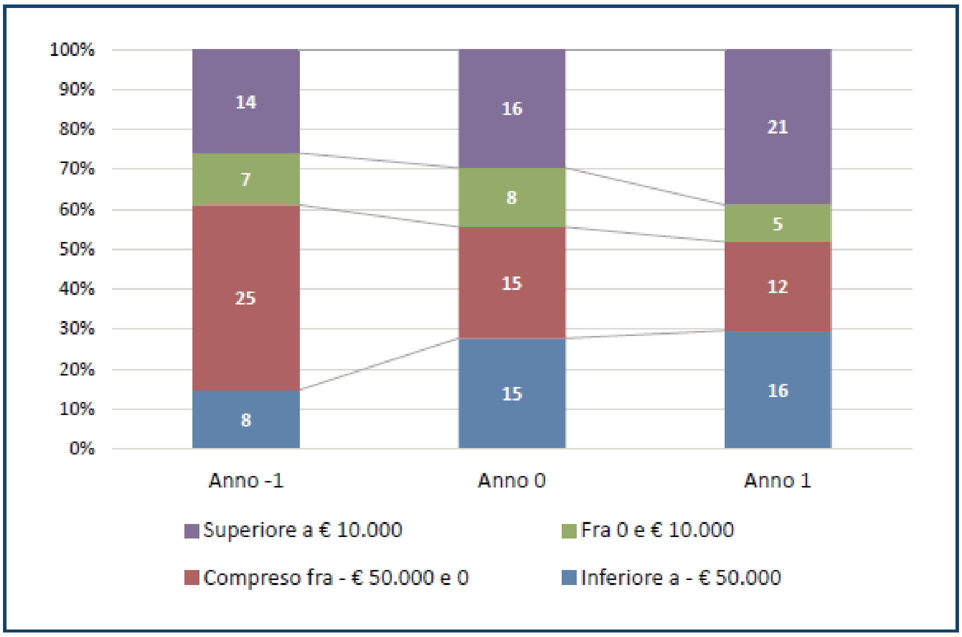


**Figure 3.15:** *Evolution of EBITDA for 54 companies' industrialists who have raised through equity crowdfunding since 2014 to 2017. Year 0 is that of the campaign,* Politecnico Milano, 2020.

The last figure shows the trend regarding profit generation after the ECF campaign. In this case it is observed that even the number of profitable companies does not change (18) in the year before campaign (Year -1) and year after (Year 1), probably due to significant investments realized with the capital raised which are amortized in the balance sheet.

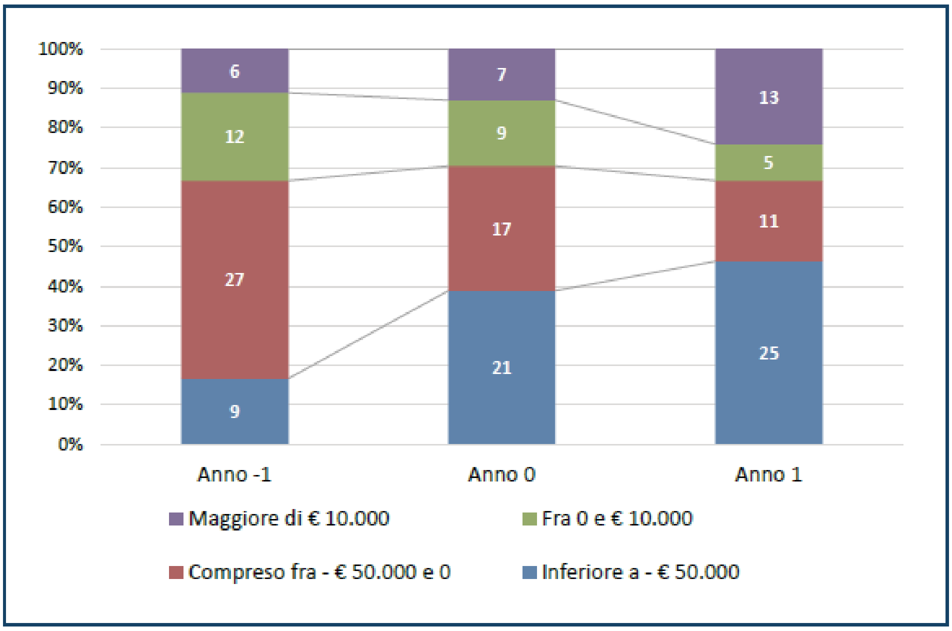


**Figure 3.16:** *Evolution of profits for 54 companies' industrialists who have raised through equity crowdfunding since 2014 to 2017. Year 0 is that of the campaign,* Politecnico Milano, 2020.

## CHAPTER IV - POST-CAMPAIGN RESULTS: ANALYSIS ON CASE STUDIES

The final chapter of the thesis aims at offering an analysis of post-campaign outcomes. It focuses on the current financial situation of companies which undertook fundraising through ECF campaigns during the year 2017. The analysis takes into consideration companies which successfully collected equity in 2017 in order to be able to draw a significant picture of the post-campaign results, taking into consideration the main economic variables in the two years following the closing of the campaign. Moreover, the analysis proposed will include a comparison of current financial statements with the business plan objectives described during the campaign development, aiming at verifying the existence of eventual incongruences with such disclosure.

### *METHODOLOGY AND DATA COLLECTION*

The proposed analysis has been structured in three main steps. Since the analysis was engaged for studying ECF in the Italian economic environment, Consob authorized platforms have been taken into consideration. Thereafter, only those which were actively operating by the end of 2017 have been examined. Indeed, 2017 has been chosen as the last period available for the analysis in order to be able to collect financial data for at least two years following the closing of the ECF campaign, considering that at the time of the writing of this essay it has been possible to study companies' financial statements until the end of 2019.

Following the research, data on active platforms have been collected and reorganized in a list, which lead to focus on those platforms which contained successfully closed campaigns, i.e. those campaigns which have been able to obtain at least the minimum target amount declared at the beginning of the campaign and that successfully completed the capital increase. As regarding such campaigns, it have been identified 52 successfully closed fundraising, engaged by 50 companies. Indeed, "DropTO Srl" and "Nano Srl" companies ended up closing two campaigns in the same year 2017, relying on the platform Opstart.it for both the rounds. Thereafter, the data collected thanks to such previous research have been organized in an excel sheet, thus creating a list containing the successful fundraisings closed during the selected period. Afterwards, each single campaign has been implemented with more detailed information, which have been searched by looking through the respective ECF platforms. In the end, data collected have been organized in a further excel sheet, which contained all available information useful for the preliminary step of the research described in this essay. By looking deeper in detail, such information include data on: (i) legal information on the company, such as business name and industry; (ii) the trimester in 2017 in which the campaign was running; (iii) the portal which hosted the campaign; (iv) parameters of the fundraising, such as minimum and maximum amount and percentage of equity offered; (v) the final amount collected; (vi) the company pre-money valuation and, where available, the class of shares offered.

Following, the second step of the analysis included the development of a research on the documentation provided by start-ups when starting the fundraising campaign through the online platforms. This documentation included information potentially needed to investors in order to establish the value of the start-up and decide whether to invest in it or not, and it is basically summarized in the business plan. As described in the first chapter of this essay, campaign founders are required to provide preliminary information which potentially enable investors to properly evaluate start-up value and related risks, and consequently the online platform has the duty to make such documentation public and easily available in the web page of the ECF campaign. Among documents provided by entrepreneurs there is legal information about the capital increase, the by-law, the chamber view as well as the business plan. Nonetheless, since the time the campaign closed, entrepreneurs are no longer required to keep such documents publicly available in the web page of the campaign. For this reason, not all the preliminary information and business plan could be taken into consideration at the time of the writing of this thesis. Furthermore, as there is absence of a mandatory structure according to which present preliminary financial and strategic documents as well as business plans, not all the documentation provided through the platforms presented the same parameters. For this reason, the analysis on financial data has been developed taking into consideration two of the most available performance indicators, which are Revenues and EBITDA.

The final step of the analysis included the collection of financial and economic performance of companies which closed a successful campaign in 2017. Collection of data has been realized through online data center *Aida.*[33] In order to have a broad picture of companies' performances, it has been downloaded data from 2018 and 2019. Afterwards, such data have been collected in the excel sheet and commented. Lastly, all the figures relative to the main selected KPIs have been extrapolated from the companies' financials and some descriptive graphs and tables have been elaborated.

*THE SAMPLE*

Year 2017 was confirmed as the turning point for equity crowdfunding in Italy: as anticipated in the first paragraph, in the 12 months, 50 companies, of which 41 innovative startups, 8 SMEs and 1 UCITS, were financed on the platforms. Total deposits were almost 12 million euros (11.75) thanks to 3.240 investors (Crowdfunding Buzz, 2018). As disclosed by

Crowdfunding Buzz (2018), in 2016 there were 19 financed companies for a total amount of 4.36 million euros and with the participation of 750 investors. Fundraising in 2017 raised an average value of € 235.000 per campaign, against an initial average target of € 125.000, therefore almost the double of what companies were expecting at the launch of their round. The crowd contributed more and more to this result: indeed, investors per campaign in 2017 were 65 against 39 in the previous year, although, as a natural consequence, their average investment was more limited (€ 3.600 against € 5.800 in 2016).

As shown in Table 4.1, active platforms in 2017 were 22, while the ones which hosted a successfully closed campaign were 10 (highlighted in orange in the table), including: Starsup.it, 200crowd.com, Crowdfundme.it, Muumlab.com, Mamacrowd.com, Wearestarting.it, Backtowork24.com, Opstart.it, Cofyp.com, Walliance.eu. At the time of this essay, two of the listed portals are no longer active. They appear highlighted in yellow in Table 4.1, and are Crowd4capital.it and Italyfunding.com (Politecnico Milano, 2018). The remaining platforms are still operating in the alternative finance market and running ECF campaigns. Moreover, in 2017 there have been 80 projects, 50 of them were successfully closed, while the remaining 30 never hit the target amount requested, with a success rate for the year equal to 62,50%.

| Web site | Owner firm | Authorization date |
|---|---|---|
| Unicasee.it | Unica SIM | Special section |
| Tifosy.com | Tifosy Limited | Special section |
| Starsup.it | Starsup Srl | 18/10/2013 |
| Actioncrowd.it | Action crowd Srl | 26/02/2014 |
| 200crow.com | The Ing Project Srl | 18/06/2014 |
| Nextequity.it | Next equity crowdfunding marche Srl | 16/07/2014 |
| Crowdfundme.it | Crowdfundme Spa | 30/07/2014 |
| Muumlab.com | Muum lab Srl | 06/08/2014 |
| Mamacrowd.com | Siamosoci Srl | 06/08/2014 |
| Fundera.it | Fundera Srl | 10/09/2014 |
| Ecomill.it | Ecomill Srl | 29/10/2014 |
| Wearestarting.it | Wearestarting Srl | 16/12/2014 |
| Backtowork24.com | Backtowork24 Srl | 14/01/2015 |
| Investi-re.it | Baldi Finance Spa | 28/01/2015 |
| **Crowd4capital.it** | **Roma Venture Consulting Srl** | **08/10/2015** |
| Opstart.it | Opstart Srl | 11/11/2015 |
| Cofyp.com | Cofyp Srl | 14/04/2016 |
| Clubdealonline.com | Clubdeal Srl | 08/03/2017 |
| Walliance.eu | Walliance Spa | 30/03/2017 |
| Europacrowd.it | Europa HD Srl | 07/06/2017 |
| **Italyfunding.com** | **Italyfunding Srl** | **06/09/2017** |
| Ideacrowdfunding.it | Idea Crowdfunding Srl | 29/11/2017 |

**Table 4.1:** *Platforms authorized by Consob in Italy in 2017,* own elaboration based on data provided by Politecnico Milano, 2018.

By looking at Figure 4.1, it appears clearly that 2017 has been the most active year in terms of ECF campaigns successfully closed. For this reason, this final chapter of the essay is going to focus on successful ECF campaigns solely closed during 2017, which ended up being 52 including 50 different start-ups, which are more than double with respect to the successful campaigns closed in 2016. This represents an even further confirmation of what previously stated, as regarding the exponential growth which ECF adoption is experiencing in Italy. By looking at the success rate, it shows a positive trend which started its consolidation from the year 2014 and went from 40% in 2014 to 62,50% in 2019.

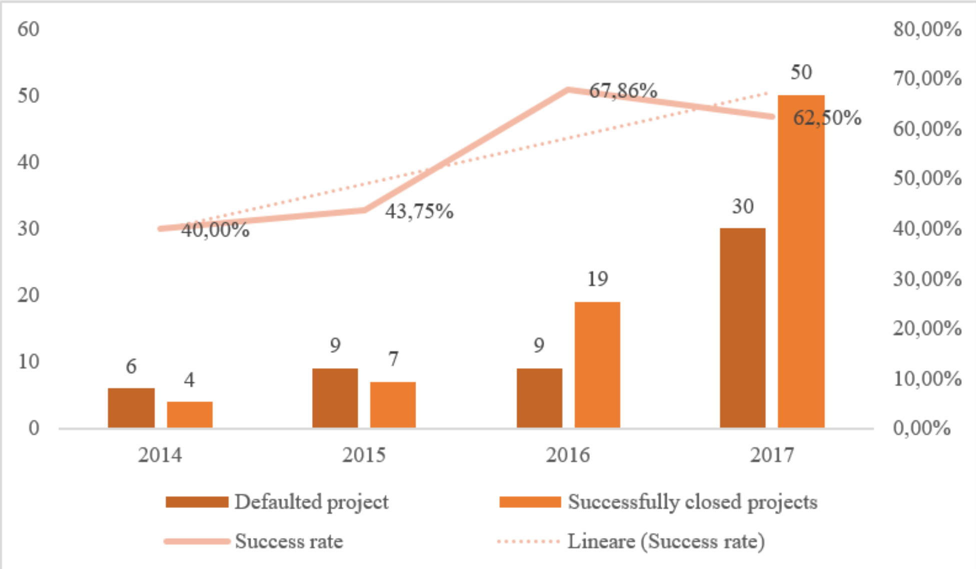


**Figure 4.1:** *Successfully closed campaigns between 2014 and 2017,* own elaboration based on data provided by Politecnico Milano, 2018.

In conclusion, the sample analyzed in this chapter includes the companies which carried out the 52 positively ECF campaigns closed in 2017. They have been briefly described in order to better understand their main business and industry, as follows:

| | |
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| *1. WeBeers Srl* | It is an innovative start-up founded in Milan in 2015 with the aim of creating a virtual meeting point where artisanal-beer lovers could find and buy best beers thanks to a subscription model which led to tailored purchases. The 2017 fundraising through 200Crowd.com hit the target amount equal to € 250.000 provided by 20 investors, in exchange for 25,00% of company equity. |
| *2. Diamass Srl* | Diamass is an innovative project developed by Sensor Health Srl inventors, which tried to obtain a tool able to help people who suffer from glycemia. Diamass is a patch (plaster) equipped with micro-needles that continuously measures the blood glucose of people with diabetes by sending real-time data to an external support. In 2017, the campaign was hosted by Crowdfundme.it and hit its maximum target amount, collecting € 250.000 (2,00% of equity) provided by 85 investors. |
| *3. FruitAma Srl* | It is a project belonging to Dreama Srl, founded through the platform Opstart.it. Dreama Srl is a young company headquartered in Bergamo specialized in the production of jams and marmalades in tubes, known and marketed under the FruitAma brand. The target amount of the campaign closed in 2017, was of € 148.000 in exchange of shares with vote right, representing 21,14% of company equity. |
| *4. FightEatClub Srl* | The main goal of this start-up, belonging to Borass Srl, is providing culinary challenges online, among amateur cooks, thus creating a sort of web talent. Moreover, the start-up creates digital video through which sponsors can promote their products. It raised through Opstart.it, in 2017, € 53.000 with a minimum target request of € 50.000. Thanks to the campaign, the company gave away 9,09% of its equity. |

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| *5. Green Koala Srl* | GK Srl is a start-up operating in the food industry, focusing on the home-delivery of Heatly and Bio food through its online restaurant. The campaign, hosted by Opstart.it, raised € 115.000, with a minimum target amount of € 100.000, in exchange for 10,53% of company equity. Investors taking part in the fundraising were 13. |
| *6. Mak Capital* | Not found. |
| *7. Verso Srl* | Verso Srl is an innovative start-up born in 2017 and specialized in the development of the latest generation of interactive systems. Its developers produced a ring-device which helps interacting with smartphones and computers. The campaign of 2017 on Mamacrowd.com closed at € 160.910, raised from 115 backers for a 9,09% of the start-up's equity. |
| *8. DropTO Srl* | DropTo Srl is a start-up operating in IT and digital technologies, which aims at developing a social network and an app mobile provided with Augmented Reality. DropTo app leads to create multimedia files such as short movies, and digitally share them in the place where they were created. DropTo owners ran two campaigns in 2017, both successfully closed and hosted by Opstart.it. The total amount collected was € 250.000, in exchange for 9,09% of equity in the second round and 14,89% in the first one. |
| *9. FamilyNation Srl* | Family Nation is an innovative SME associated with the Nana Bianca digital incubator in Florence. It operates in the e-commerce sector, providing products for children and maternity selected according to quality, design and sustainability parameters. The campaign ran in Mamacrowd.com raised € 399.892 thanks to 53 backers, which received in exchange 2,35% of company equity. |
| *10. Babaiola Srl* | It is an innovative start-up which offers a travel social platform mainly focused on LGBT community in Italy, helping them plan holidays and sharing experiences. The campaign hit the target collecting € 94.750 in exchange for 3,40% of equity. 71 investors took part in the fundraising, obtaining both series A and B shares. |
| *11. Qaplà Srl* | Qaplà.it is an online platform which enables e-commerce customers (both B2C and B2B) to keep monitoring the delivery phase of their products. Indeed, the start-up leads to monitor more than 52 delivery carriers, enabling its clients to save both money and time when trying to contact the express-delivery companies. In 2017, it raised € 151.741 through Mamacrowd.com platform and thanks to 50 backers. The minimum target amount requested was € 45.000 in exchange for 2,66% of equity. |
| *12. The Digital Box Spa* | Founded in 2013, the main goal of this start-up was changing Digital Marketing in an innovative way, thanks to ADA online platform, which hosted Artificial Intelligence devices. The company relies on a distribution model which uses re-sellers. The campaign in 2017 raised € 824.103 (2,33% of equity), provided by 164 investors. |
| *13. Revoluce Srl* | The idea was born within the innovative start-up Stantup Srl, led by a group of young people from Campania, with the aim of revolutionizing the energy market by launching innovative products and services with very high technological value. The main innovation stands in the way energy is paid for: in a rechargeable manner, as in the case of the purchase of telephone credit. The campaign in 2017, hosted by Muumlab.com, hit the target amount of € 50.000, sustained by 43 investors who received 4,00% of company equity. |
| *14. Biogenera Spa* | The main challenge of Biogenera Spa was to develop a new era of personalized DNA drugs and the specific drug for baby tumors. The start-up was founded in Bologna in 2008. The fundraising through 200crowd.com collected € 381.000 thanks to 87 investors who received 1,17% of equity. |
| *15. Cubepit Srl* | It is an innovative start-up, part of Seri Spa, which relies on the implementation of 3D printing. The passion and in-depth study of the two founders in the 3D printing sector led to the creation of the first platform for the secure distribution of 3D model printing licenses. The ECF campaign carried out by 200crowd.com raised €75.500 and experienced the participation of 28 investors which received 10,00% of company equity. |
| *16. Ermes Cyber Security Srl* | Ermes Cyber Security is an innovative startup and spin-off of the Politecnico di Torino born in April 2017. The start-up operates in the IT and digital technologies industry sector. In 2017, it collected € 249.950 through an ECF campaign held by Mamacrowd.com. 21 investors took part in the campaign, receiving 8,33% of company equity in exchange for the liquidity injections. |
| *17. Green Energy Srl* | Green Energy Storage Srl is an innovative start-up born in 2015, which obtained an exclusive agreement for Europe with Harvard University. The main focus of the start-up is providing green energy by implementing new advanced technologies. In 2017, it raised € 1.000.000 through Mamacrowd.com, and saw the participation of 290 investors which received 2,70% of company equity. |

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| *18. Yocabè Srl* | Yocabè Srl is the first online and global distributor for fashion brands, with a particular focus on medium-sized brands, which form the backbone of the fashion system internationally. It raised € 132.499 in 2017, through an ECF campaign hosted by Mamacrowd.com and backed by 2 investors, which obtained 7,79% of company equity. |
| *19. Orwell Srl* | Orwell Srl is an innovative start-up which operates in the digital technology industry sector. The main goal of Orwell Srl stands in the development, production and marketing of Virtual Reality and Mixed Reality applications, created through highly innovative software and 3D simulations in terms of user experience. Thanks to an ECF campaign in 2017, the company collected € 200.000 through the platform Opstart.it, in exchange for 10,50% of company equity. |
| *20. Smiling Srl* | Smiling Srl is an online platform which leads clients to create and distribute advertising videos, on news, information, sports, news, entertainment, fashion, travel, cooking, etc. In 2017 it carried out an ECF campaign through Backtowork24.com online platform, and collected €103.500 involving 11 backers, which obtained 2,50% of company equity. |
| *21. Taskhunters Srl* | It is an innovative start-up company and it is the leading platform in Europe that allows university students to carry out temporary jobs (tasks) for individuals and companies, in compliance with the laws and regulations on labor law. Through the ECF campaign hosted by Crowdfundme.it, the start-up obtained € 200.000 provided by 105 investors. Backers received 5,40% of equity in terms of both series A and series B shares. |
| *22. LittleSea Srl* | LittleSea is an innovative SME that has developed Babelee: a technology - for which an international patent application has been filed - unique in the world, capable of generating automatic videos starting from unstructured data present in company databases. This means that any company can generate a video for their internal or external communication. It raised € 84.000 in exchange for 2,87% of equity, through an ECF campaign executed by the platform Wearestarting.it. |
| *23**.** Nano Srl* | Nano Srl conducted two ECF campaigns in 2017, both of which received huge success and positive response from investors. Nano Srl has as object the design, production and marketing of innovative drinks obtained through a high-level technological process. Its offer is characterized by a product line called Diferente, that offers alcohol-free drinks, able to generate the same taste as alcoholic beverages. Both the two ECF campaigns were managed through Opstart.it, while the first one obtained € 137.500, the second one collected € 252.800, in exchange of respectively 12,66% and 13,00% of company equity. |
| *24. Glass to Power Srl* | Glass to Power (G2P) G2P is a spin-off of the University of Milan Bicocca that produces transparent photovoltaic windows, which is a patented innovation that basically ensures that the windows themselves produce energy. In 2017 the company organized an ECF campaign through the platform Crowdfundme.it, that raised € 183.750 in exchange for 10,90% of company equity and involving 54 backers. |
| *25. Paladin True Srl* | Paladin True Srl is an innovative start-up which leads its clients to rent products and objects through an online platform. Moreover, they can receive the product rented directly at home or wherever they established it. Through the ECF campaign sustained in Crowdfundme.it, the start-up raised € 95.456 thanks to 60 investors, which received in exchange 4,80% of company equity. |
| *26. Crowdfundme Spa* | In 2017, the online platform successfully closed an ECF campaign in order to increase its corporate equity. The minimum target amount requested was of € 150.000, while it experienced an overfunding raising an amount of € 278.345 provided by 122 investors (5,70% of company equity). |
| *27. FindMyLost Srl* | FindMyLost operates in digital technologies, and more in detail, it is the first Lost & Found social to find your lost objects wherever you are, 24/7. In 2017, the start-up sustained an ECF campaign through the platform 200crowd.it, where it raised € 153.000 rather than the € 100.000 established as a minimum amount. The campaign experienced the participation of 30 investors, which in exchange for their capital received 6,00% of company equity. |
| *28. TakeOff Srl* | Take Off mainly aims at acting as the only interlocutor for the creation of start-ups through an integrated multidisciplinary approach, aiming at sustaining start-ups through a path of growth, thus guaranteeing them a greater probability of success. Through Starsup.it, in 2017 it hit the target amount raising € 504.500, in exchange for 98,00% of equity. The ECF campaign saw the participation of 13 investors. |

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| *29. Alea Srl* | Alea Srl is a company founded in Polcenigo in 1995 and registered as an Innovative SME by February 2017. It mainly deals with the development of software and iOS / Android applications; its main software is the Push to Talk system marketed under the Talkway brand. Through the successfully closed ECF campaign hosted by the platform Crowdfundme.it, Alea Srl raised € 390.950. 87 investors took part in the campaign and received 2,90% of company equity in exchange for their liquidity injections. |
| *30. BorsinoRifiuti Srl* | Borsino Rifiuti is an innovative start-up and, more particularly, it is an authorized waste management intermediary. On the website and in the physical points of Borsino Point, individuals and companies can transfer their waste to authorized Concessionaires & Environmental Managers. It raised € 192.370 through the platform Crowdfundme.it, which saw the participation of 142 investors who received in exchange 6,30% of equity. |
| *31. Bloovery Srl* | Bloovery is an innovative start-up described as the first digital flower and plant wholesaler. It executed home-delivery for flowers ordered through the app. It raised € 64.850 in 2017, thanks to the ECF campaign hosted by Crowdfundme.it in which 8,50% of equity has been exchanged for the capital of 31 investors. |
| *32. Graphene XT Srl* | Graphene XT is an innovative start-up based in Bologna, which aims at employing graphene in order to revolutionize industry and everyday life. Its owners rely on a patented technology which allows to transform graphene into the desired product. Thanks to Mamacrowd.com, the company raised € 530.000, a much larger amount than the minimum target requested of € 80.000, showing a complete overfunding. The ECF campaign saw the participation of 153 investors, which received 2,88% of company equity. |
| *33. Yakkyo Srl* | Yakkyo Srl operates in e-commerce. In particular, it provides the opportunity for individual clients to purchase Chinese products directly from Chinese suppliers, thanks to the intermediation of its online platform. Indeed, the start-up allows customers to buy wholesale products from China with one click, including certified products at factory prices delivered directly to clients' homes. The ECF campaign hosted by Mamacrowd.com raised € 260.116 through the participation of 46 investors and the exchange of 4,00% of company equity. |
| *34. Hymy Group Srl* | HYMY manufactures 100% Made Italy modular bags. The bags created by designer Stefano Galandrini are built by composing and interchanging the different parts that form the external and internal structure. In 2017, the company conducted an ECF campaign through the platform Cofyp.com, raising € 213.750 in exchange for 47,50% of company equity. The investors taking part in the campaign were 8. |
| *35. Winelivery Srl* | Winelivery Srl is an innovative start-up which operates in the food and beverage sector. It offers home-delivery services for alcoholic drinks and wine, focusing on the speed of the delivery. The ECF company hosted by Crowdfundme.it raised € 150.000, much more than the minimum target requested of € 50.000. 143 backers took part in the campaign, receiving in exchange 11,11% of company equity. |
| *36. AmbiensVR Srl* | Ambiens VR Srl is an innovative start-up which offers innovative products thanks to the adoption of Virtual Reality (VR) systems. The start-up is the virtual reality portal for architecture dedicated to real estate professionals. The main goal is revolutionizing project communication, offering a unique, immersive and interactive perspective in virtual environments, by adopting devices such as the smartphone. The ECF campaign successfully closed in Mamacrowd.com obtained € 224.758 from 28 investors. The percentage of equity exchanged was 12,16%. |
| *37. Raft Srl* | Raft Srl is an innovative start-up offered by a young team of owners which wanted to give the possibility to many amateur sportsmen (especially tennis players) to feel like real professionals, providing them with the web and mobile platform www.raftennis.com, a tool through which to participate and / or organize tennis tournaments on the model of ATP professionals and WTA. The company raised € 45.000 through the ECF campaign in Opstart.it, giving away 30,00% of company equity. |
| *38. Keisdata Srl* | Keisdata is a company based in Lombardia and founded in 1994, with a consolidated experience in the Risk Management and Knowledge Management sector. The company has developed a software, called KRC-solution. The main goal of the company is reducing operating risk through the implementation of the software. It raised € 210.000, the double of the minimum target requested, through an ECF campaign held by Backtowork24 in 2017, including 8 investors who received 2,00% of company equity. |
| *39. Parterre Srl* | Parterre is a platform based on smartphone applications that collect data from the public using a mix of entertainment and information derived from social networks. The particular feature of the project is the collection of precise data that can be analyzed in real time, thanks to the specific structure of the voting data. In 2017, the start-up collected € 100.000, hitting |

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| | the minimum target requested for its ECF campaign through Mamacrowd.com, involving 68 investors and giving away 7,55% of company equity. |
| *40. Cynny Spa* | The innovative start-up has the main goal of producing, also on behalf of third parties, and selling software applications, websites and web services of any type. Moreover, it provides professional assistance in the case og big data management. In 2017 it increased its equity through an ECF campaign, collecting € 341.824 in exchange for 0,10% of its equity. The campaign, held by Crowdfundme.it platform, saw the participation of 192 investors. |
| *41. Oreegano Srl* | Oreegano Srl is an innovative start-up which offers an online community where users can find and share healthy and bio receipts. It raised € 140.250 from 76 investors, which obtained 6,40% of company equity. The ECF campaign was held by the platform Crowdfundme.it. |
| *42. Scuter Srl* | Scuter Srl is an innovative start-up which offers Scuter, namely an intelligent vehicle thought to be shared in order to make more comfortable urban mobility. Scuter relates to a technological device. In 2017, the start-up raised € 240.663 from 49 investors through the ECF platform Mamacrowd.com. The new shareholders obtained 5,26% of company equity. |
| *43. Felfil Srl* | Founded in 2015, Felfil Srl is an innovative start-up which focuses on 3D printing. Its main product consists in Felfil Evo, a plastic extruder capable of producing the 3D printable filament from cheap industrial pellets or by recycling plastic materials. In 2017 Felfil started an ECF campaign in Mamacrowd.com, which successfully raised € 100.000 from 52 investors. Thanks to the campaign, the start-up gave away 6,94% of its equity. |
| *44. Luche Srl* | Not found. |
| *45. HK Srl* | Horticultural Knowledge Srl started an ECF campaign in 2017 in order to inject liquidity in its start-up PerFrutto. PerFrutto is an integrated system capable of predicting the quantity of fruit at harvest and the number of fruits for each size class well in advance and accurately. The campaign hosted by Mamacrowd.com collected € 266.550, provided by 36 investors which obtained 8,05% of company equity in exchange. |
| *46. Sharewood Srl* | The start-up Sharewood Srl offers an online platform which helps its clients to find the most suitable experience for them, including renting and travelling. It is based on the idea of sharing economy, which includes sharing of experiences as well as of objects, such as bicycles. The start-up increased its capital by € 247.255 thanks to an ECF campaign through the platform Crowdfundme.it. 176 investors took part in it, receiving 2,40% of company equity. |
| *47. SkyMeeting Spa* | SkyMeeting Spa is the owner company of the innovative start-up SkyAccounting, operating in the IT and digital sector. The start-up provides for cloud billing and accounting software for accountants, companies and VAT numbers. It successfully closed an ECF campaign in 2017, where it took part 21 investors. It raised €159.000 in exchange for 6,50% of company equity. |
| *48. DiveCircle Srl* | DiveCircle is the first entirely dedicated OTA (Online Travel Agency) which entirely focuses on underwater world and correlated sports. Indeed, it provides experiences underwater with professional support. In 2017, it raised € 80.000 through the platform Backtowork24.com, in exchange for 7,85% of company equity. |
| *49. Safeway Helmets Srl* | The main product of this innovative start-up is the technological helmet, which is provided with light signals and technological tools that help the rider safety. The company raised € 400.000 in 2017 through the ECF platform Starsup.it, giving away 31,39% of its equity shares. 41 investors took part in the fundraising. |
| *50. InfinityHub Spa* | InfinityHub is a managerial, financial and commercial accelerator of Cleantech companies, born in Trento. The start-up develops and markets services and products for families and businesses with high added value, focused on energy efficiency and the production of energy from renewable sources. The ECF campaign sustained in 2017 through the platform Wearestarting.it, raised € 105.000 in exchange for 9,09% of company equity. |

*ECF CAMPAIGN OVERALL OUTCOMES IN 2017*

By looking at companies' brief description provided above, it is possible to see that the sample includes companies operating in a variety of industries. Figure 4.2 aims at summarizing such information, showing the number of companies associated with each industry sector. By looking at the figure, it appears that there is basically a dominant industry sector relating to ECF campaigns in 2017: IT and digital technologies. Indeed, it is the sector which included 18 successfully closed campaigns. The second sector appears to be food and beverage, which perhaps includes the development of platforms or communities aiming at exchanging culinary experiences and selling food and drinks. In this scenario, the most exploited sub-sectors are wine and drinks, and bio and healthy food. Moreover, the two most exploited sectors cover themselves more than 50% of the total sample, underlying the digital nature of the market. However, start-ups normally operate in transversal markets. In this scenario, it appears that the most exploited reference market by start-ups which rely on ECF fundraising is the ICT one.

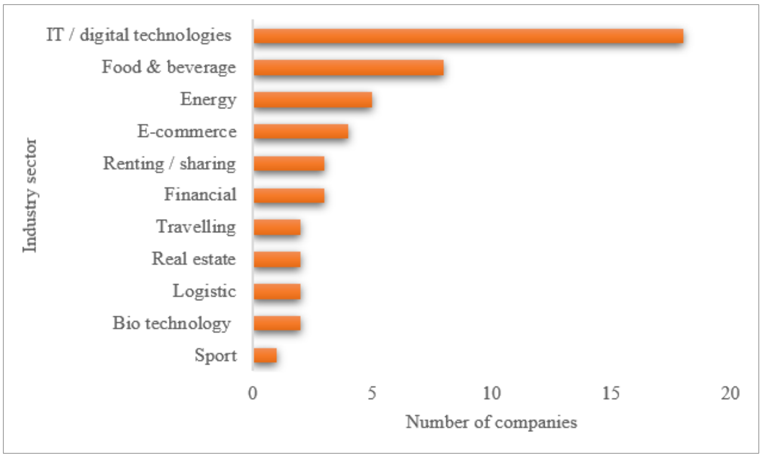


**Figure 4.2:** *Industry sector for successful campaigns,* own elaboration based on data provided by online platforms.

Here below, Table 4.2 shows all the main parameters and outcomes regarding the 52 ECF fundraisings undertook in 2017. The companies sustaining these campaigns were 50, since, as it is possible to observe through the table, two start-ups undertook two successfully closed ECF campaigns during the same year. Such companies are underlined in bold, and specifically are DropTO, which concluded the first campaign in July and the second one in November 2017; and Nano Srl, which experienced its first success in January and one more in July 2017. Information and data contained in Table 4.2 have been obtained from the websites of the platforms through which the campaign have been completed. It happened for two companies, namely Mak Capital Srl and Luche Srl, that the campaign pages were not available anymore, as well as the company website, thus preventing from the collection of any information related to such campaigns. In the case where information was not available, the expression N.A. indicates that. Whenever possible, missing information on the ECF fundraising has been searched from the capital increase legal documents supplied by the company.

| Company | Platform | Minimum Target | Amount raised | Overfunding | % of equity offered | Pre-money value | # of investors | Minimum chip |
|---|---|---|---|---|---|---|---|---|
| WeBeers Srl | 200 Crowd | 250.000 € | 250.000 € | 100% | 25,00% | 750.000 € | 20 | N.A |
| Diamass Srl | Crowfundme | 100.000 € | 250.000 € | 250% | 2,00% | 4.900.000 € | 85 | 250,00 € |
| FruitAma Srl | Opstart | 148.000 € | 148.000 € | 100% | 21,14% | 552.000 € | N.A. | 250,00 € |
| FightEatClub Srl | Opstart | 50.000 € | 53.000 € | 106% | 9,09% | 500.000 € | N.A. | 250,00 € |
| Green Koala Srl | Opstart | 100.000 € | 115.000 € | 115% | 10,53% | 850.000 € | N.A. | 250,00 € |
| Mak Capital | Walliance | 500.000 € | N.A. | N.A. | 20,00% | 2.000.000 € | 118 | N.A |
| Verso Srl | Mamacrowd | 60.000 € | 160.910 € | 268% | 9,09% | 600.000 € | 115 | 499,80 € |
| **DropTO Srl** | **Opstart** | 100.000 € | 200.000 € | 200% | 9,09% | 1.000.000 € | N.A. | 250,00 € |
| FamilyNation Srl | Mamacrowd | 80.000 € | 399.892 € | 500% | 2,35% | 3.000.000 € | 53 | 498,67 € |
| Babaiola Srl | Crowfundme | 60.000 € | 94.750 € | 158% | 3,40% | 1.700.000 € | 71 | 250,00 € |
| Qaplà Srl | Mamacrowd | 45.000 € | 151.741 € | 337% | 2,66% | 1.650.000 € | 50 | 799,97 € |
| The Digital Box Spa | Mamacrowd | 300.047 € | 824.103 € | 275% | 2,33% | 12.580.000 € | 164 | 937,28 € |
| Revoluce | MuumLab | 50.000 € | 50.000 € | 100% | 4,00% | 1.200.000 € | 43 | N.A |
| Biogenera Spa | 200 Crowd | 100.000 € | 381.000 € | 381% | 1,17% | 8.500.000 € | 87 | N.A |
| Cubepit | 200 Crowd | 50.000 € | 75.500 € | 151% | 10,00% | 450.000 € | 28 | N.A |
| Ermes Srl | Mamacrowd | 100.000 € | 249.950 € | 250% | 8,33% | 1.100.000 € | 21 | 4.996,76 € |
| Green Energy Srl | Mamacrowd | 250.000 € | 1.000.000 € | 400% | 2,70% | 9.000.000 € | 290 | 899,95 € |
| Yocabè Srl | Mamacrowd | 132.500 € | 132.499 € | 100% | 7,79% | 1.570.000 € | 2 | 19.998,97 € |
| Orwell Srl | Opstart | 100.000 € | 200.000 € | 200% | 10,50% | 850.000 € | N.A. | 250,00 € |
| Smiling Srl | BacktoWork24 | 100.000 € | 103.500 € | 104% | 2,50% | 3.900.000 € | 11 | 250,00 € |
| Taskhunters Srl | Crowfundme | 80.000 € | 200.000 € | 250% | 5,40% | 1.400.000 € | 105 | 250,00 € |
| LittleSea Srl | WeAreStarting | 150.000 € | 84.000 € | 56% | 2,87% | 5.000.000 € | 14 | N.A. |
| **Nano Srl** | **Opstart** | 200.000 € | 252.800 € | 126% | 13,00% | 1.340.000 € | N.A. | 250,00 € |
| Glass to Power Srl | Crowfundme | 183.750 € | 183.750 € | 100% | 10,90% | 1.500.000 € | 54 | 250,00 € |
| Paladin True Srl | Crowfundme | 50.000 € | 95.456 € | 191% | 4,80% | 990.000 € | 60 | 250,00 € |
| Crowdfundme Spa | Crowfundme | 150.000 € | 278.345 € | 186% | 5,70% | 2.500.000 € | 122 | 250,00 € |
| **DropTO Srl** | **Opstart** | 105.000 € | 150.000 € | 143% | 14,89% | 600.000 € | N.A. | 250,00 € |
| FindMyLost Srl | 200 Crowd | 100.000 € | 153.000 € | 153% | 6,00% | 1.500.000 € | 30 | N.A |
| TakeOff Srl | Starsup | 500.000 € | 504.500 € | 101% | 98,00% | 10.000 € | 13 | 500,00 € |
| Alea Srl | Crowfundme | 150.000 € | 390.950 € | 261% | 2,90% | 5.000.000 € | 87 | 500,00 € |
| BorsinoRifiuti Srl | Crowfundme | 80.000 € | 192.370 € | 240% | 6,30% | 1.200.000 € | 142 | 250,00 € |
| Bloovery Srl | Crowfundme | 60.000 € | 64.850 € | 108% | 8,50% | 650.000 € | 31 | 250,00 € |
| Graphene XT Srl | Mamacrowd | 80.000 € | 530.000 € | 663% | 2,88% | 2.700.000 € | 153 | 899,10 € |
| Yakkyo Srl | Mamacrowd | 100.000 € | 260.116 € | 260% | 4,00% | 2.400.000 € | 46 | 1.941,75 € |
| Hymy Group Srl | Cofyp | 213.750 € | 213.750 € | 100% | 47,50% | 236.250 € | 8 | N.A |
| Winelivery Srl | Crowfundme | 50.000 € | 150.000 € | 300% | 11,11% | 1.200.000 € | 143 | 250,00 € |
| AmbiensVR Srl | Mamacrowd | 180.000 € | 224.758 € | 125% | 12,16% | 1.300.000 € | 28 | 1.949,46 € |
| Raft Srl | Opstart | 45.000 € | 45.000 € | 100% | 30,00% | 105.000 € | N.A. | 150,00 € |
| Keisdata Srl | BacktoWork24 | 100.000 € | 210.000 € | 210% | 2,00% | 4.900.000 € | 8 | N.A |
| Parterre Srl | Mamacrowd | 100.000 € | 100.000 € | 100% | 7,55% | 1.224.500 € | 68 | 249,48 € |
| Cynny Spa | Crowfundme | 100.000 € | 341.824 € | 342% | 0,10% | 99.900.000 € | 192 | 252,00 € |
| Oreegano Srl | Crowfundme | 80.000 € | 140.250 € | 175% | 6,40% | 1.170.000 € | 76 | 500,00 € |
| Scuter Srl | Mamacrowd | 150.000 € | 240.663 € | 160% | 5,26% | 2.700.000 € | 49 | 999,65 € |
| Felfil Srl | Mamacrowd | 50.000 € | 100.000 € | 200% | 6,94% | 670.000 € | 52 | 499,82 € |
| Luche Srl | BacktoWork24 | 75.000 € | N.A. | N.A. | 5,00% | 1.425.000 € | N.A. | N.A. |
| HK Srl | Mamacrowd | 70.000 € | 266.550 € | 381% | 8,05% | 800.000 € | 36 | 5.000,00 € |
| Sharewood Srl | Crowfundme | 75.000 € | 247.255 € | 330% | 2,40% | 3.050.000 € | 176 | 250,00 € |
| SkyMeeting Spa | Starsup | 150.000 € | 159.000 € | 106% | 6,50% | 2.157.700 € | 21 | 500,00 € |
| DiveCircle Srl | BacktoWork24 | 80.000 € | 80.000 € | 100% | 7,85% | 940.000 € | N.A. | N.A. |
| Safeway Helmets Srl | Starsup | 200.000 € | 400.000 € | 200% | 31,39% | 437.000 € | 41 | 500,00 € |
| Infinityhub Spa | WeAreStarting | 105.000 € | 105.000 € | 100% | 9,09% | 1.050.000 € | N.A. | N.A. |
| **Nano Srl** | **Opstart** | 100.000 € | 200.000 € | 200% | 12,66% | 690.000 € | N.A. | 250,00 € |

**Table 4.2**: *Post-campaign outcomes,* own elaboration based on data provided by online platforms.

By focusing again on Table 4.2, it summarizes the main parameters and observable outcomes deriving from a successfully closed ECF campaign. The project which has been mostly funded appears to be Green Energy Srl, which raised € 1.000.000, with a pre-money valuation of € 9.000.000, followed by The Digital Box Spa, which collected approximatively € 824.000, starting with a pre-money value of € 12.580.000. Both the campaigns were executed through the platform Mamacrowd.com. On the other hand, Raft Srl was the company which collected the lowest amount of money, € 45.000, and which showed one of the lowest pre-money valuations, equal to € 105.000. The average amount collected appears to be almost equal to € 228.000, while the average target requested at the beginning of the campaigns resulted in € 126.700. By looking at the trend of such average results, it appears that the average amount collected remained fairly stable in the period from 2016 to 2017, going from a value of € 237.000 to a value of € 228.000. In addition to this, the highest majority of companies belonging to the sample showed overfunding, with an average overfunding percentage of 203%. Among the sample, 17,31% of companies raised 100% of the minimum target requested, while 82,69% of the start-ups experienced overfunding, collecting more than 100% of the initially requested capital. The industry sectors which includes the majority of companies showing the highest percentages of overfunding are, once again, IT and digital technologies, followed by the energy sector. Indeed, Graphene XT Srl experienced 663% overfunding. It also appears the huge success of Family Nation Srl, a company operating in the e-commerce sector and which provides children and maternity clothes, which obtained 500% overfunding. The calculus of overfunding is based on the figure minimum target. For what concerns the percentage of equity offering, it shows an average value of 10,80%. This value appears to be low on average, implying the willingness of start-up owners to keep control and vote rights over their businesses. The start-up which offered the highest percentage of equity was TakeOff Srl, which gave to its investors 98% of its equity. The number of investors has not always been available in platforms websites, however they range from a minimum participation of 2 investors (Yocabè Srl through Mamacrowd.com) to a maximum participation of 290 backers (Green Energy Srl through Mamacrowd.com, as well). For what concern the participation trend of investors, it increased by +160% from 2016 to 2017, providing further evidence of the huge expansion ECF is experiencing.

Table 4.3 shows the trend of the average minimum target, the effective amount collected, overfunding percentage, % of equity offered, pre-money valuation, investors and minimum chip requested to take part in the campaign. In order to compute this trend, it have been considered also data deriving from campaigns closed in 2015 and 2016. By looking at different years, it appears how the average pre-money valuation of companies approaching ECF fundraising has been much higher in 2017, implying that such start-ups already had a positive valuation and perhaps were already creating positive value. Moreover, overfunding in 2017 has been much higher, showing an average value of 203%, almost the double than the overfunding average percentage in 2015, which was 107%. Higher percentages of overfunding may also work as marketing tools, as the perception of overfunded campaigns is much better among non-professional investors. Indeed, in case of overfunding, such investors perceive high quality from such projects and thus they are more interested in investing.

|  | *Minimum target* | *Amount raised* | *Overfunding* | *% of equity offered* | *Pre-money valuation* | *Investors* | *Minimum chip* |
|---|---|---|---|---|---|---|---|
| **2015** | 188.140,00 € | 250.827,00 € | 107% | 28% | 1.589.070,00 € | 36 | 477,00 € |
| **2016** | 171.118,00 € | 237.512,00 € | 132% | 17% | 1.480.886,00 € | 45 | 737,00 € |
| **2017** | 126.700,00 € | 228.000,00 € | 203% | 11% | 3.988.412,50 € | 72 | 1.195,57 € |
| **Average trend 2015-2017** | **161.986,00 €** | **238.779,67 €** | **147%** | **19%** | **2.352.789,50 €** | **51** | **803,19 €** |

**Table 4.3:** *Average post-campaign outcomes in the period 2015-2017,* own elaboration based on data provided by online platforms.

For what concerns the average amount collected by each platform in 2017, it appears that Starsup.it has been the platform which received most of the funds, even though it sustained only three ECF campaigns. Indeed, the three campaigns sustained by Starsup.it collected an average amount equal to € 354.500. Following, we can find the platform Mamacrowd.com, with an average amount collected equal to € 320.922, which 14 campaigns. Mamacrowd.com has been the platform hosting the highest number of campaigns. Figure 4.4 shows the number of closed campaigns by each active platform in 2017.

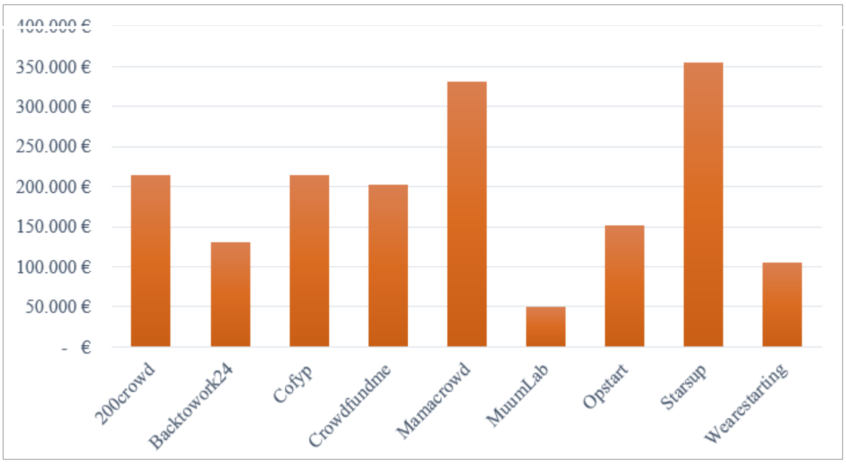


**Figure 4.3:** *Average amount raised per platform in 2017,* own elaboration based on data provided by online platforms.

In order to have a broader picture, it is interesting to see how the platforms which on average raised the highest amount of capital are not the same which closed the highest number of successful campaigns. Indeed, as shown in Figure 4.4, Starsup.it only hosted 3 successful projects, while the second most successful platform in terms of number of campaigns closed has been Crowdfundme.it, which, on the other hand, collected on average € 200.000, positioning immediately after Cofyp.it, that hosted just one successful campaign. Moreover, by looking at Figure 4.4., it appears that the platform Backtowork24.com concluded only 4 successful campaigns while Walliance.eu reports 1 successfully closed campaign. It is important to consider, though, that two of the firms which hit the target in 2017 through the above-mentioned platforms are now not active anymore, or at least there is absence of actual companies' websites or information.

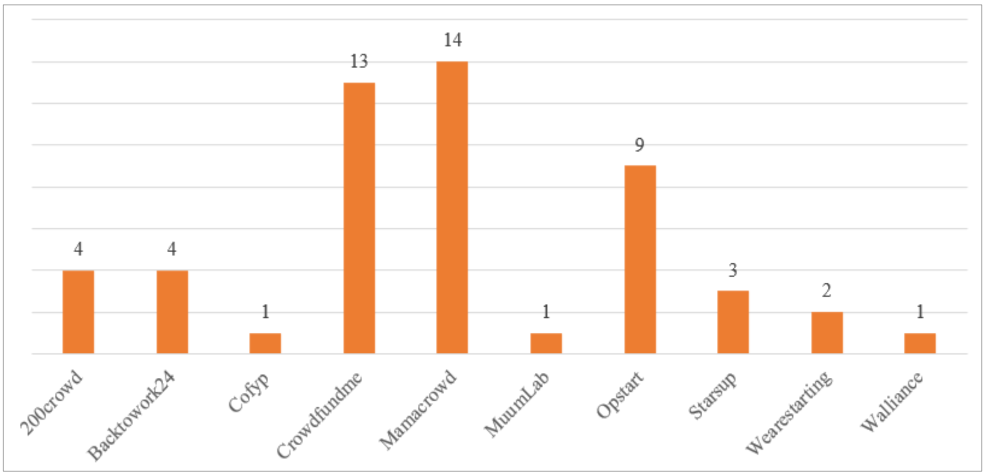


**Figure 4.4:** *Number of successfully closed campaigns per platform in 2017,* own elaboration based on data provided by online platforms.

In addition, in order to consider a more comprehensive picture of the ECF phenomenon in 2017, Figure 4.5 provides a representation of the successfully closed campaigns divided by trimester among 2017. By looking at the figure, it appears that the period which experienced the highest number of closed campaigns has been the last trimester, going from 01/10/2017 to 31/12/2017, with 14 funded projects. On the other hand, the first period of the year was the one with the lowest amount of funded campaigns.

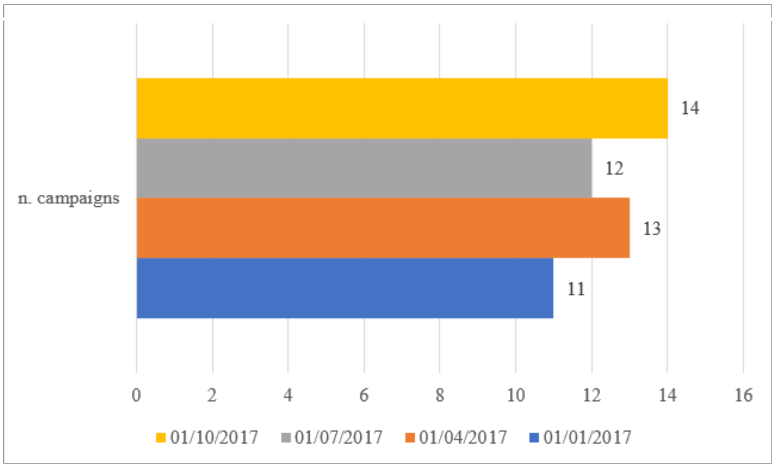


**Figure 4.5:** *Number of successfully closed campaigns per trimester in 2017,* own elaboration based on data provided by online platforms.

In conclusion to this section, it appears that the platforms that have contributed most are Mamacrowd (€4.7 million), Crowdfundme (€ 2.6 million) and Opstart (€ 1.4 million), whose total collection in 2017 constitutes 75% of the market. Another 7 platforms each raised less than 1 million (200Crowd, Starsup, Walliance, Equinvest, Cofyp, WeAreStarting and MuumLab). It should also be noted that the first two platforms are also those that mostly involved the crowd, with a number of investors per campaign clearly above the market average (namely 81 investors for Mamacrowd.com and 101 investors for Crowdfundme.it, respectively). The only other platform that has performed better in this sense is Walliance.eu

(118 investors, moreover in the only campaign closed in 2017) which is also the only "vertical" platform dedicated to real estate.

*CASE STUDIES ANALYSIS: BUSINESS PLAN vs ACTUAL PERFORMANCE*

The remainder of this chapter focuses on the illustration of case studies, by studying start-up profiles and business plans disclosed during the ECF campaign and comparing them with financial results actually generated during operating activities. Such comparison aimed at looking whether there were any discrepancies between what disclosed in the business plan and what companies have actually achieved. By starting from the initial sample described above, it has been taken into consideration each company for which both forecasted business plan and actual financial reports were available. Moreover, in order to make the results comparable, only companies that presented both 2018 and 2019 financial reports by the time of the writing of this essay have been considered. As previously anticipated, the main parameters observed in order to establish the success of performance and value creation trend of the companies are Revenues and EBITDA. Furthermore, for each company considered in this paragraph, a brief description has been provided, illustrating the main strategy at the basis of the company's activity, the market in which it operates and the KPIs on which it bases its competitive advantage, and the main performance forecasts described in the business plan. Besides, further research has been done by looking at start-up balance sheets. Afterwards, incidence of intangibles and tangibles over invested capital (IC) has been computed. Finally, it has been provided a qualitative description of the start-ups, by identifying the reference market and the business model. However, data available until now on the companies forming the sample are still too little, as well as the time period is too short, thus making the expectation of any statistically significant results too ambitious.

*FruitAma Srl*

*Vision and strategy:* FruitAma Srl (belonging to Dreama Srl) aims at producing, selling and marketing food-based or fruit. Indeed, the start-up's range of products offered not only includes jams and marmalades, but also spreadable creams based on cocoa and hazelnuts, in order to increase market share. The main idea on which FruitAma is based relies on the easy portability of the product. Indeed, jams tubes are thought in order to be easily transported by clients, and of easy use. The portability and lightness of the product make it so appreciated by those who prefer the convenience and freshness of the tube over the jar.

*Market and competitive advantage:* the competitive advantage sustained by FruitAma relies on quality of Italian ingredients, innovative packaging, anti-waste thanks to 100gr size, glutenfree, recyclable, since both the plastic cap and the aluminum tube make the product 100% recyclable. The market in which the start-up operates is showing huge expansion, as there is more and more attention for quality and healthiness of ingredients by customers. In 2015 in Italy such a market had a value of € 263,1 million, with about 44,6 million kg of product sold.

*Business Plan:* by looking at the business plan provided in the intermediary platform, it appears that FruitAma shares its experience with companies such as Zuegg and Rigoni, both developed from a family-based idea. Revenues and sales projections are estimated starting from market data, which in 2017 showed for dietary and artisan jams a performance of +10,40% and +29% respectively. The main target market for FruitAma products are families, and more in detail those families composed by one or two members. Indeed, the company focuses on small sized products. In 2016 the majority of sales were realized through retail clients (80%), while in 2017 70% of sales were realized through wholesales, with minimal online sales (5%) and gross distribution (10%). Following the capital raising campaign, FruitAma Srl planned to increase its sales through gross distribution, reaching 25% of total sales, and to expand its market position, by starting commercial relations with foreign markets (20% of total sales in 2018). In its business plan, the start-up proposed to invest in foreign expansion, new products offering and consolidation in the domestic market.

| **Company** | **Status** | | |
|---|---|---|---|
| FruitAma | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | n.a. | 600.000 | 1.250.000 |
| Actual results | n.a. | 140.342 | 235.908 |
| Delta | - | -459.658 | -1.014.092 |
| ***% of realization*** | **-** | ***23%*** | ***19%*** |
| ***% of variation*** | **-** | ***-77%*** | ***-81%*** |
| | **EBITDA** | | |
| Business plan | n.a. | 43.000 | 89.000 |
| Actual results | n.a. | -49.417 | -244.099 |
| Delta | - | -92.417 | -333.099 |
| ***% of realization*** | | ***-115%*** | ***-274%*** |
| ***% of variation*** | | ***-215%*** | ***-374%*** |

**Table 4.4**: *Business plan projections and actual results of FruitAma Srl,* own elaboration based on financial reports.

| **.€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | n.a. | *n.a.* | 107.612 | *77%* | 88.342 | *37%* |
| Intangible assets | n.a. | *n.a.* | 5.762 | *4%* | 3.486 | *1%* |
| Financial assets | n.a. | | 0 | | 0 | |
| Fixed capital | n.a. | | 113.374 | | 91.828 | |
| Working capital | n.a. | | 121.625 | | 81.205 | |
| *Invested capital* | *n.a.* | | *234.999* | | *173.033* | |
| *Cash and similar* | *n.a.* | *n.a.* | *6.095* | *4%* | *1.350* | *1%* |
| ***Intangibles / IC*** | **-** | | ***2%*** | | ***2%*** | |
| ***Tangibles / IC*** | **-** | | ***46%*** | | ***51%*** | |

**Table 4.5**: *Invested capital and cash and similars of FruitAma Srl,* own elaboration based on financial reports.

The company FuritAma Srl is still active. By looking at Table 4.4, it appears that it is not producing value as it aimed. Indeed, both revenues and EBITDA generation are lower than expected by the business plan projections, both during 2018 and 2019. Revenues showed an increasing trend from 2018 to 2019, but EBITDA generation did not follow such pattern. However, according to what was declared in the business plan, the company developed its website, where clients can directly purchase their products. Moreover, in 2018 the company participated in international food congresses, both in Singapore and in Chicago, following the internationalization plan forecasted. In addition to this, further resources have been invested in the implementation and improvement, as well as the promotion, of the ChocoAma product line. Thanks to such a product line, the company aimed at expanding its market share and increasing its product offering, by including spreadable creams. By starting from this data, it is reasonable to assume that the firm invested resources on geographical expansion as well as improvement in product offering. According to data collected and by looking at Table 4.5, it appears that intangibles assets investments remained fairly stable in the period 2018-2019, while tangibles over IC rate increased in the same period going from 46% to 51%.

*Verso Srl*

*Vision and strategy:* the start-up main goal is the creation of Verso ONE, a wearable device in the shape of a ring that allows people to interact in an accurate, realistic and natural way with smartphones, computers and other technological devices. In this way, Verso ONE is the first product which provides its clients new ways to interact with video games, music, sport, virtual reality, design and art, without writing a line of code.

*Market and competitive advantage:* the business model implemented by Verso Srl is a blend between wearable products (technological devices which can be worn by people) and gesture controllers. Both the markets are experiencing a huge expansion. According to the business plan, the market sector in which Verso is operating is going to experience a +1500%.

*Business plan:* the distribution takes place through the website and selected commercial partners, while post-purchase services are carried out directly by Verso Srl. The product offered by Verso is expected to build its competitive advantage by providing an easy-to-use product, which properly understands and follows human moves and communicates them to the devices. Moreover, the clients are looking for an efficient app through which to communicate with product developers. The product is thought to satisfy the target market, which is composed by musicians, video-gamers, professional designers, video-makers. The main competitors identified are those companies which produce wearable devices. According to the business plan provided, the capital raised is going to be invested in human resources (25%), R&D (40%), marketing expenditures (30%), machinery (5%).

| **Company** | **Status** | | |
|---|---|---|---|
| Verso | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 480.000 | 1.600.000 | 3.700.000 |
| Actual results | 35.000 | 299 | 20.795 |
| Delta | -445.000 | -1.599.701 | -3.679.205 |
| ***% of realization*** | ***-*** | ***0%*** | ***1%*** |
| ***% of variation*** | ***-*** | ***-100%*** | ***-99%*** |
| | **EBITDA** | | |
| Business plan | 18.000 | 671.500 | 1.592.400 |
| Actual results | 4.730 | -58.201 | -3.448 |
| Delta | -13.270 | -729.701 | -1.595.848 |
| ***% of realization*** | ***26%*** | ***-9%*** | ***0%*** |
| ***% of variation*** | ***-74%*** | ***-109%*** | ***-100%*** |

**Table 4.6:** *Business plan projections and actual results of Verso Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 0 | *0%* | 0 | *0%* | 816 | *4%* |
| Intangible assets | 2.596 | *7%* | 31.151 | *10418%* | 54.580 | *262%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 2.596 | | 31.151 | | 55.396 | |
| Working capital | 11.264 | | 16.032 | | 22.676 | |
| *Invested capital* | *13.860* | | *47.183* | | *78.072* | |
| *Cash and similar* | *168.309* | *5%* | *75.267* | *25173%* | *27.459* | *132%* |
| ***Intangibles / IC*** | ***19%*** | | ***66%*** | | ***70%*** | |
| ***Tangibles / IC*** | ***0%*** | | ***0%*** | | ***1%*** | |

**Table 4.7:** *Invested capital and cash and similars of Verso Srl,* own elaboration based on financial reports.

By looking at 2019 financial results, the start-up closed the year with a positive revenues value. However, revenues generation experienced a huge decrease the year after the ECF campaign (-99%), while during 2019 the company has been able to generate revenues equal to € 20.795. According to the business plan projections, in such a year the firm already expected highly positive results deriving from operations, thus showing a percentage of realization equal to 1%. Moreover, it showed an impressive negative EBITDA value in 2018, which is supposed to be due to huge investments in R&D resources destinated to improve its product immediately after the closing of the ECF campaign. Indeed, EBITDA value improved during 2019, although it was completely not in line with business plan projections yet (variation rate equal to -100%). By studying intangible assets at the balance sheet, they showed a huge increase from 2017 to 2018 (representing almost 66% of IC). By looking at the firm's website and social network pages, it appears how the company has invested further resources in marketing and communication, in order to better reach target customers. In July 2020, the company started to promote a reward crowdfunding campaign, looking for users willing to try and promote the innovated products.

*Family Nation Srl*

*Vision and strategy:* Family Nation operates in e-commerce and its main goal is to offer quality, Italian branded and eco-friendly clothes for both children and mother-to-be. It operates through B2C and B2B channels and is aiming at entering the Chinese market immediately following the capital raising campaign.

*Market and competitive advantage:* FamilityNation.it had 23.000 registered clients (2017) which purchase online for an average value per order of €75. Moreover, the start-up based its competitive advantage on the adoption of technological tools to improve customer experience as well as customer care, and to make as easy as possible the utilization of the app in order to make purchases. In this way, it has developed an app for mobile devices which eases e-commerce, without the necessity of using a computer.

*Business plan:* according to its business plan, Family Nation Srl is expecting +120% growth in its revenues. The start-up relies on a lean warehouse business model, which leads to the reduction of warehouse costs while keeping a high level of efficiency in orders delivered. Moreover, the start-up is going to enhance the creation of a community of users, which not only share purchases but also experiences and ideas. This leads to the creation of a strong brand identity and therefore brand loyalty. The capital raised through the fundraising is going to be invested in marketing expenses, technological and R&D as well as in the expansion towards Chinese market.

| **Company** | **Status** | | |
|---|---|---|---|
| Family Nation | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 2.055.000 | 4.570.000 | 6.000.000 |
| Actual results | 2.196.029 | 3.181.793 | 4.248.143 |
| Delta | 141.029 | -1.388.207 | -1.751.857 |
| ***% of realization*** | ***107%*** | ***70%*** | ***71%*** |
| ***% of variation*** | ***7%*** | ***-30%*** | ***-29%*** |
| | **EBITDA** | | |
| Business plan | n.a | 500.000 | 1.200.000 |
| Actual results | 80.634 | 92.774 | 257.550 |
| Delta | n.a. | -407.226 | -942.450 |
| ***% of realization*** | ***-*** | ***19%*** | ***21%*** |
| ***% of variation*** | ***-*** | ***-81%*** | ***-79%*** |

**Table 4.8:** *Business plan projections and actual results of Family Nation Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 8.179 | *0%* | 12.061 | *0%* | 30.884 | *1%* |
| Intangible assets | 280.138 | *13%* | 459.350 | *14%* | 586.403 | *14%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 288.317 | | 471.411 | | 617.287 | |
| Working capital | 362.352 | | 650.124 | | 1.040.178 | |
| *Invested capital* | *650.669* | | *1.121.535* | | *1.657.465* | |
| *Cash and similar* | *220.754* | *10%* | *256.075* | *8%* | *130.107* | *3%* |
| ***Intangibles / IC*** | ***43%*** | | ***41%*** | | ***35%*** | |
| ***Tangibles / IC*** | ***1%*** | | ***1%*** | | ***2%*** | |

**Table 4.9:** *Invested capital and cash and similars of Family Nation Srl,* own elaboration based on financial reports.

Family Nation Srl is a still active company. By looking at the financial results, the company generated highly positive revenues both in 2018 and 2019. In those years, revenue value was equal to € 3 million and € 4 million, showing an increasing trend and a percentage of realization respectively equal to 70% and 71%. The same happened for EBITDA, which was equal to € 92.774 in 2018 and € 257.550 in 2019. However, such positive results still are not in compliance with business plan projections, which were expecting higher value creation immediately after the ECF campaign closing, starting from 2018. Indeed, variation rates related to EBITDA are negative and equal to -81% in 2018 and -79% in 2019. As it appears from the income statement, the most part of costs was due to raw materials and consumption, which cost € 3 million in 2019. By looking at long-term investments, immediately after the ECF campaign closed the company started to invest funds in intangible assets. In 2019 intangible assets had a value equal to € 586.403, representing 35% of invested capital. Such a category mainly refers to marketing and communications expenses and R&D. Indeed, both the website and the Facebook page of the start-up are constantly updated, in order to establish a direct communication with clients and to create a user's community, as declared in the 2017 business plan. By looking at documents available until now, there is no evidence of the realization of geographical expansion toward Chinese market.

*Qaplà Srl*

*Vision and strategy:* Qaplà Srl aims at easing deliveries for companies, in particular it focuses on the post-shipment control and on promptly action in case of problems. Basically, Qaplà operates in improving customer service and reducing time and costs for clients in case of bad management of deliveries.

*Market and competitive advantage:* Qaplà Srl works as an intermediary platform between delivery firms and clients, letting the last to keep tracking of the process. Moreover, clients need to have fast and efficient delivery, both qualities guaranteed by the Qaplà team. In addition to this, the start-up works as an intermediary between e-commerce platforms and marketplaces. According to the business plan provided by the company, the e-commerce market sector was expected to experience an increase of +16% in 2017 in Italy and +13,6% in Europe. In Italy, it has been estimated 15,3 million deliveries per month, representing a huge market opportunity for the start-up. The main competitors in the Italian scenario are Gsped and ShippyPro.

*Business plan:* the business model adopted includes revenues generation following shipping and customer services utilized by clients. According to the business plan presented, the capital raised is going to be invested in R&D, human resources, marketing expenditures.

| **Company** | **Status** | | |
|---|---|---|---|
| Qaplà | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 186.504 | 448.919 | 908.629 |
| Actual results | 165.392 | 360.790 | 553.072 |
| Delta | -21.112 | -88.129 | -355.557 |
| ***% of realization*** | ***89%*** | ***80%*** | ***61%*** |
| ***% of variation*** | ***-11%*** | ***-20%*** | ***-39%*** |
| | **EBITDA** | | |
| Business plan | -61.545 | -7.732 | 202.036 |
| Actual results | -13.033 | 12.842 | 10.439 |
| Delta | -48.512 | -20.574 | -191.597 |
| ***% of realization*** | ***21%*** | ***-166%*** | ***5%*** |
| ***% of variation*** | ***79%*** | ***266%*** | ***-95%*** |

**Table 4.10:** *Business plan projections and actual results of Qaplà Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 590 | *0%* | 3.107 | *1%* | 7.998 | *1%* |
| Intangible assets | 59.218 | *36%* | 80.800 | *22%* | 80.742 | *15%* |
| Financial assets | 0 | | 0 | | 107 | |
| Fixed capital | 59.808 | | 83.907 | | 88.847 | |
| Working capital | -1.695 | | 19.747 | | -51.986 | |
| *Invested capital* | *58.113* | | *103.654* | | *36.861* | |
| *Cash and similar* | *117.528* | *71%* | *25.397* | *7%* | *56.713* | *10%* |
| ***Intangibles / IC*** | ***102%*** | | ***78%*** | | ***219%*** | |
| ***Tangibles / IC*** | ***1%*** | | ***3%*** | | ***22%*** | |

**Table 4.11:** *Invested capital and cash and similars of Qaplà Srl,* own elaboration based on financial reports.

Qaplà Srl is a still active innovative company, which both in 2018 and 2019 generated positive revenues results, which have increased starting from the year after the ECF campaign. For what concerns EBITDA value, it appears how the company had been overperforming expectations in 2018 but has not been able to keep on this path the year after. Indeed, in 2019 the variation rate was only equal to -95%, while it was 266% in 2018. However, the e-commerce market sector showed a huge expansion during 2020, thus both revenues and EBITDA results are expected to grow. By looking at the balance sheets, it appears that intangible assets investments have increased in 2018 and kept mainly constant in 2019. As declared in the business plan, such resources have been invested mainly in R&D and communication expenses. Indeed, the start-up currently has a very active social page. The current pandemic situation has raised the necessity to even improve the delivery service and the tracking service offered to retail business. However, with the resources available until 2019, the company has not been able to meet business plan projections yet.

*The Digital Box Spa*

*Vision and strategy:* The Digital Box Spa aims at changing the way through which Digital Marketing is perceived and implemented by entrepreneurs. The start-up employs a high level of digital technology, in order to create marketing campaigns through smartphones and mobile devices. It has already obtained a market share in Italy, Spain and Brazil and aims at expanding in Latin America, France, UK, Germany, Portugal and Romania. The strategy includes the offer of ADA, an online platform for Mobile Engagement which eases the direct communication with clients.

*Market and competitive advantage:* according to the business plan proposed by the start-up, the IT market for communication and marketing technologies was experiencing a huge expansion, reaching 67,2 million dollars in 2019. The market segment in which ADA is positioned is that of the Mobile Engagement Automation Platform, that is a category of software that allows companies to create and maintain the relationship with customers over time (Engagement) through automation tools (Marketing Automation). In this way, ADA competitive advantage is linked to its high technology and simple and intuitive way to use. The distribution channel is based on resellers, which lead high scalability by contacting marketing agencies and retailer companies, which then directly communicate with clients.

*Business plan:* by looking at the business plan, it appeared that the capital raised through ECF campaign was planned to be invested in market expansion towards Northern Europe, to enhance marketing and communication division, and towards the implementation of new tools for controlling operations, administrative and legal expenses, and development of the Patent Pending procedure for the patenting of ADA algorithms. The main part of revenues was expected to be generated in the Italian market, followed by Spain and extra-Europe.

| **Company** | **Status** | | |
|---|---|---|---|
| The Digital Box | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 7.329.000 | 13.983.000 | 25.984.000 |
| Actual results | 2.559.341 | 2.737.637 | 2.665.632 |
| Delta | -4.769.659 | -11.245.363 | -23.318.368 |
| ***% of realization*** | ***35%*** | ***20%*** | ***10%*** |
| ***% of variation*** | ***-65%*** | ***-80%*** | ***-90%*** |
| | **EBITDA** | | |
| Business plan | 1.254.000 | 4.168.000 | 10.641.000 |
| Actual results | 383.776 | 235.452 | 9.526 |
| Delta | -80.634 | -3.932.548 | -10.631.474 |
| ***% of realization*** | ***31%*** | ***6%*** | ***0%*** |
| ***% of variation*** | ***-6%*** | ***-94%*** | ***-100%*** |

**Table 4.12:** *Business plan projections and actual results of the Digital Box Spa,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 26.183 | *1%* | 23.993 | *1%* | 25.239 | *1%* |
| Intangible assets | 202.507 | *8%* | 331.152 | *12%* | 643.860 | *24%* |
| Financial assets | 2.400.971 | | 2.795.961 | | 2.431.393 | |
| Fixed capital | 2.629.661 | | 3.151.106 | | 3.100.492 | |
| Working capital | 643.465 | | 355.881 | | 332.560 | |
| *Invested capital* | *3.273.126* | | *3.506.987* | | *3.433.052* | |
| *Cash and similar* | *588.700* | *23%* | *110.431* | *4%* | *931.597* | *35%* |
| ***Intangibles / IC*** | ***6%*** | | ***9%*** | | ***19%*** | |
| ***Tangibles / IC*** | ***1%*** | | ***1%*** | | ***1%*** | |

**Table 4.13:** *Invested capital and cash and similars of The Digital Box Spa,* own elaboration based on financial reports.

By looking at the income statement results, in the period 2017-2019 the company generated positive value, with revenues stream equal to € 2.665.635 in 2019 and EBITDA € 9.526. However, such results are not in line with forecasted value estimated in the business plan projections, which probably were over-optimistic. Indeed, the revenue variation rate in 2019 was negative and equal to -90%. Following the ECF campaign, the company started investments in the R&D division, in order to improve its product ADA. Such investments appear in the balance sheet, where it is possible to observe the increase in intangible assets value, that went from a value of € 202.507 in 2017 to a value of € 643.860 in 2019, representing respectively 9% and 19% of IC. By investing in software improvement, in 2018 The Digital Box was able to participate in a FED event in Milan (*Forum dell'Economia Digitale*). In particular, the start-up has been invited to discuss customer engagement and artificial intelligence in digital marketing, thus proving the success generated by its technology. Moreover, in 2019 the company has been selected to participate in Euronext Techshare, which represents an opportunity for starting an IPO in the Italian or European market.

*Ermes Cyber Security Srl*

*Vision and strategy:* Ermes Cyber Security Srl operates in the cyber security sector, in particular it offers a platform to allow companies to regain control on the information they have exposed on the Web and gives them the opportunity to defend themselves from all risks generated by Web trackers. In this context, the team of Ermes has conceived and engineered one platform distributed, able to totally block the spill of information to the Web tracker. In this way, the start-up bases its strategy on the offering of improved web-traffic filtering and protection of all corporate devices, wherever they are located (at home or at the office) and connected with every kind of internet connection (WiFi or cable).

*Market and competitive advantage:* the services provided by the start-up consist of patented algorithms. With respect to its main competitors (Zscaler, Cisco, Check Point), Ermes Srl provided higher technological services protected by 2 patents. By looking at the business plan disclosed, it appears that the cyber security market was considered the hottest in the technology sector, with a market worth $77 billion in 2015, and growth estimates of up to $170 billion in 2020. Ermes' team defined such a market as a blue ocean, giving an idea of the huge possibility for expansion and creation of profit for the start-up.

*Business plan:* according to the business plan, the main part of the capital raised through ECF was planned to be invested in the final development of Ermes software. Afterwards, the start-up aimed at exploiting a geographical expansion, reaching North America (USA and Canada) and part of Asia (Russia, China and Japan).

| **Company** | **Status** | | |
|---|---|---|---|
| Ermes Cyber Security | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 21.880 | 862.080 | 4.932.500 |
| Actual results | 84.213 | 246.775 | 527.961 |
| Delta | 62.333 | -615.305 | -4.404.539 |
| ***% of realization*** | ***385%*** | ***29%*** | ***11%*** |
| ***% of variation*** | ***285%*** | ***-71%*** | ***-89%*** |
| | **EBITDA** | | |
| Business plan | -178.540 | 300.090 | 1.103.920 |
| Actual results | 21.345 | 3.488 | 6.663 |
| Delta | -199.885 | -296.602 | -1.097.257 |
| ***% of realization*** | ***-12%*** | ***1%*** | ***1%*** |
| ***% of variation*** | ***112%*** | ***-99%*** | ***-99%*** |

**Table 4.14:** *Business plan projections and actual results of Ermes Cyber Security Srl* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 10.227 | *12%* | 19.008 | *8%* | 35.968 | *7%* |
| Intangible assets | 61.936 | *74%* | 260.368 | *106%* | 545.203 | *103%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 72.163 | | 279.376 | | 581.171 | |
| Working capital | -3.181 | | 304 | | 39.762 | |
| *Invested capital* | *68.982* | | *279.680* | | *620.933* | |
| *Cash and similar* | *215.864* | *256%* | *131.312* | *53%* | *597.687* | *113%* |
| ***Intangibles / IC*** | ***90%*** | | ***93%*** | | ***88%*** | |
| ***Tangibles / IC*** | ***15%*** | | ***7%*** | | ***6%*** | |

**Table 4.15:** *Invested capital and cash and similars of Ermes Cyber Security Srl,* own elaboration based on financial reports.

Ermes Cyber Security is a still operating company. As it appears from its income statement, both revenues generation and EBITDA margin show a positive and increasing trend, with a value of respectively € 527.961 and € 6.663 in 2019. However, such results are still not in line with business plan projections, and present high deviations from what was expected. On the other hand, as it appears through the balance sheet, the start-up has invested a relevant amount of resources in intangible assets, starting immediately after the ECF campaign closing. Indeed, intangible assets had a value of € 279.680 in 2018, representing 93% of invested capital. For what concerns further investments in geographical expansion forecasted in the business plan, at the beginning of 2020 the company publicly declared its expansion in the Spanish market.

*Green Energy Storage Srl*

*Vision and strategy:* Green Energy Storage has developed an organic storage system for renewable energy based on quinone, a molecule found in rhubarb and other plants. In this way, the start-up aims at providing renewable energy in a flexible way. Moreover, company's technologies are improved by the collaboration with Harvard University, as well as partnership with the University of Rome Tor Vergata, the Bruno Kessler Foundation of Trento and Industrie De Nora.

*Market and competitive advantage:* GES products are characterized by high scalability, due to the separation of power components and energy components, long life cycle, safety and sustainability. Scalability allows the production of both small domestic devices and big devices for companies. Market of renewable energy needs a way through which maintains energy produced and creates a flexible way of utilization. In this way, Green Energy Storage is one of the pioneer companies providing such service. The market of storage systems is expected to grow and reach a market share of about $400 billion by 2022. In such a market, Europe plays a crucial role, representing 32% of the total ($160 billion).

*Business plan:* as it appears by the business plan provided, the start-up already received €2 million from the EU through the program Horizon 2020. In addition to this, the Provincia of

Trento provided €3 million in order to lead the start-up to improve its products. Thanks to the ECF campaign, GES is looking for geographical expansion in the USA and Latin America, Asia and MENA (Middle East and North Africa) markets. Moreover, part of the funds raised are going to be invested in R&D division, marketing and administrative expenses.

| **Company** | **Status** | | |
|---|---|---|---|
| Green Energy Storage | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | n.a. | 2.560.000 | 15.800.000 |
| Financial results | 1.073.816 | 1.009.042 | 1.216.169 |
| Delta | n.a. | -1.550.958 | -14.583.831 |
| ***% of realization*** | **-** | ***39%*** | ***8%*** |
| ***% of variation*** | **-** | ***-61%*** | ***-92%*** |
| | **EBITDA** | | |
| Business plan | n.a | -1.310.000 | 2.160.000 |
| Financial results | 116.228 | -245.225 | 397.397 |
| Delta | n.a. | -1.064.775 | -1.762.603 |
| ***% of realization*** | **-** | ***19%*** | ***18%*** |
| ***% of variation*** | **-** | ***81%*** | ***-82%*** |

**Table 4.16:** *Business plan projections and actual results of Green Energy Storage Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 234.886 | *22%* | 298.172 | *30%* | 239.783 | *20%* |
| Intangible assets | 1.374.275 | *128%* | 2.057.732 | *204%* | 2.639.877 | *217%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 1.609.161 | | 2.355.904 | | 2.879.660 | |
| Working capital | -297.448 | | -350.822 | | -804.144 | |
| *Invested capital* | *1.311.713* | | *2.005.082* | | *2.075.516* | |
| *Cash and similar* | *1.419.410* | *132%* | *591.222* | *59%* | *1.398.219* | *115%* |
| ***Intangibles / I.C.*** | ***105%*** | | ***103%*** | | ***127%*** | |
| ***Tangibles / I.C.*** | ***18%*** | | ***15%*** | | ***12%*** | |

**Table 4.17:** *Invested capital and cash and similars of Green Energy Storage Srl,* own elaboration based on financial reports.

By looking at financial reports, the start-up appears as a well performing company. During the two years following the ECF campaign, the company generated positive value, showing revenues value equal to € 1.216.169 in 2019 and an average growth rate in revenues equal to +7% in the period 2017-2019. EBITDA results overperformed expectations in 2018, but the company has not been able to keep on this pattern during 2019 (EBITDA variation rate equal to -82% in 2019). By looking at company development and product's improvement, it appears how the start-up is still working on a technology capable of storing renewable energy. In this direction, during 2018, the start-up started a second ECF campaign, successfully closed as it happened in the case of the first one. During 2020 the firm started a partnership with Harvard University in order to obtain the patent for the developed technology. In this way, in 2020 GES Srl started the first production of flow batteries, consolidating its figure of pioneer in renewable energy market. Such production may improve revenue results, which are still not in line with those values forecasted in the business plan projections.

*Yocabè Srl*

*Vision and strategy:* Yocabè Srl is an innovative start-up which provides online e-commerce for medium-sized quality brands of international fashion. At the heart of Yocabè strategy there is the technological platform that allows the management of a global multi-shop multi-brand model aiming at optimizing all the core processes of e-commerce. The growth strategy is based on acquisition of new brands and products and increasing marketplaces. According to its business model, the company generates 12% revenues on each transaction.

*Market and competitive advantage:* the main customer target of the start-up is represented by those companies which generate revenues between € 5 and 50 million. Currently, Yocabè operates in many of European countries, including Italy, France, Germany, Spain, UK. With respect to the main competitors, Yocabè shows competitive advantage as it allows partners to generate sales at an international level without initial investments (no need for infrastructure and personnel), with a lower risk (stores already started) and with a more efficient economy of scale (the multi-brand approach makes it easier scalable operations).

*Business plan:* according to the business plan provided, the funds raised through ECF are going to be invested to accelerate the acquisition and sale of brands with the aim, for 2017, of 34 brands (from 8 in 2016) and the opening of new stores, about 20 in total, on the main European marketplaces.

| **Company** | **Status** | | |
|---|---|---|---|
| Yocabè | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 186.408 | 757.514 | 2.967.635 |
| Actual results | 842.598 | 2.005.405 | 2.236.322 |
| Delta | 656.190 | 1.247.891 | -731.313 |
| ***% of realization*** | ***452%*** | ***265%*** | ***75%*** |
| ***% of variation*** | ***352%*** | ***165%*** | ***-25%*** |
| | **EBITDA** | | |
| Business plan | 26.688 | -222.871 | -576.201 |
| Actual results | -82.109 | -77.409 | -94.980 |
| Delta | -108.797 | -145.462 | -481.221 |
| ***% of realization*** | ***-308%*** | ***35%*** | ***16%*** |
| ***% of variation*** | ***-408%*** | ***65%*** | ***84%*** |

**Table 4.18:** *Business plan projections and actual results Yocabè Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 1.273 | *0%* | 2.265 | *0%* | 7.216 | *0%* |
| Intangible assets | 0 | *0%* | 21.765 | *1%* | 199.612 | *9%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 1.273 | | 24.030 | | 206.828 | |
| Working capital | -69.894 | | -286.013 | | -273.615 | |
| *Invested capital* | *-68.621* | | *-261.983* | | *-66.787* | |
| *Cash and similar* | *271.663* | *32%* | *294.273* | *15%* | *650.322* | *29%* |
| ***Intangibles / IC*** | ***0%*** | | ***8%*** | | ***299%*** | |
| ***Tangibles / IC*** | ***2%*** | | ***1%*** | | ***11%*** | |

**Table 4.19:** *Invested capital and cash and similars of Yocabè Srl*, own elaboration based on financial reports.

Yocabè is a still active company. For what concerns economic results, the start-up is generating highly positive revenues (€ 2.236.322 in 2019, average growth rate for the period 2017-2019 equal to +75%). However, it is not able to produce positive net income (2019 EBITDA equal to € -94.980), but still overperforming business plan projections. It is reasonable to suppose that a high amount of resources is still being invested to create a sustainable competitive advantage in the market, and a positive economic result will require a longer-term horizon. Nowadays, it is expanding its market position, by acquiring new clients and collaborating with a higher number of fashion brands sold through its marketplace. In 2019, the company counted 15 employees and collaboration with 25 fashion brands, including partnership with Diadora, Superga, K-way, Carrera, Robe di Kappa. As established in the business plan disclosed during the ECF campaign, the company carried out geographical expansion, and it is now operating in marketplaces in Canada, Mexico, and USA, as well as in Europe. From the closing of the capital raising campaign, the company handled almost 130.000 orders. As it appears by looking at the balance sheet, the company is constantly investing resources in intangible assets, which include both the improvement of software, the acquisition of new marketplaces, as well as the incrementation of marketing and communication. In 2019, intangible asset investments have experienced high growth, reaching a value equal to almost € 200.000. The willingness for further expansion appears even more evident if considering a further fundraising concluded in 2019. Indeed, thanks to round bridge financing, the start-up increased its liquidity by € 600.000, supported by Cross Border Growth Capital.

*Orwell Srl*

*Vision and strategy:* Orwell Srl is an innovative start-up which operates in the digital and communication technologies sector. According to its strategy, it produces and commercializes Virtual Reality and Mixed Reality applications, created through highly innovative 3D software and simulations in terms of user experience.

*Market and competitive advantage:* founders of the start-up benefit from a huge experience and knowledge with respect to VR and 3D software. By looking at the business plan, the market for such products was expected to experience an intense growth. Indeed, an increase in active users of 503% was estimated by 2018, going from the current $ 43 million to over $ 215 million. By speaking about revenues, they were estimated to reach $4.6 bn in 2018 for the VR-software sector, while $5.2 billion revenues were expected for the hardware sector.

*Business plan:* capital raised will be committed, in line with the business development plan, to the continuation of the activities on special projects today at the experimental development stage. At the same time, the go-to-market will be carried out in the new target markets, judged to have high potential for the VR proposal and which are not yet managed in a structured manner by competitors. According to the business plan, the market expansion will be carried out following two main directions: computer graphics and virtual reality. The target customer segment is composed by players, users aged between 24-45 and technology lovers.

| **Company** | **Status** | | |
|---|---|---|---|
| Orwell | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | n.a. | 1.256.087 | 2.883.711 |
| Actual results | 380.669 | 511.027 | 312.014 |
| Delta | n.a. | -745.060 | -2.571.697 |
| ***% of realization*** | - | ***41%*** | ***11%*** |
| ***% of variation*** | - | ***-59%*** | ***-89%*** |
| | **EBITDA** | | |
| Business plan | n.a. | 606.506 | 1.763.376 |
| Actual results | 13.666 | -765 | 2.527 |
| Delta | n.a. | -607.271 | -1.760.849 |
| ***% of realization*** | - | ***0%*** | ***0%*** |
| ***% of variation*** | - | ***-100%*** | ***-100%*** |

**Table 4.20:** *Business plan projections and actual results Orwelll Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 19.151 | *5%* | 27.556 | *5%* | 21.354 | *7%* |
| Intangible assets | 26.898 | *7%* | 167.020 | *33%* | 186.287 | *60%* |
| Financial assets | 12.381 | | 8.939 | | 7.501 | |
| Fixed capital | 58.430 | | 203.515 | | 215.142 | |
| Working capital | 129.281 | | 69.476 | | -6.978 | |
| *Invested capital* | *187.711* | | *272.991* | | *208.164* | |
| *Cash and similar* | *61.894* | *16%* | *17.450* | *3%* | *2.798* | *1%* |
| ***Intangibles / IC*** | ***14%*** | | ***61%*** | | ***89%*** | |
| ***Tangibles / IC*** | ***10%*** | | ***10%*** | | ***10%*** | |

**Table 4.21:** *Invested capital and cash and similars of Orwell Srl,* own elaboration based on financial reports.

By looking at Orwell's income statement, it appears that its economic results are still not in line with business plan projections, which were probably too optimistic. Indeed, business plan forecasts expected revenues equal to almost € 3 million in 2019, while they ended up being equal to € 321.014. Besides, EBITDA expectations saw a value equal to € 1.763.376 in 2019, while the actual financial result ended up equal to € 2.527, showing a variation rate equal to -100%. However, by looking at the renewed website, it appears that the company is operating in both 3D computer graphic and VR sector, which is in line with what declared in the business plan. During 2016 the main part of services was directed to Real Estate clients, while by 2019 Orwell offer includes services to architects and designers, museums and art galleries, events and advertising. In 2017 the company provided personalized experiences for exhibitions, events, museums and fairs. Examples of this type are those made for the exhibition on the painter Gustav Klimt in Florence, a success with 80.000 tickets, or the Da Vinci Experience.

*Little Sea Srl*

*Vision and strategy:* Little Sea Srl is an innovative start-up which developed Babelee, a new patented technology able to generate automatic videos starting from unstructured data present in company databases. This represents a huge opportunity in terms of marketing and communication, since it is possible to create specific advertising videos for each client, based on its preferences and needs. Videos are generated by taking information and data from the Web and from each single database. Indeed, according to a research conducted by Cisco in 2015, 64% of users who watched a video of a product are more enticed to buy it.

*Market and competitive advantage:* the market for digital marketing technologies is expected to grow in the long term, thanks to the huge expansion of smartphones and mobile devices owned by users, and the Internet as well. In this new scenario, technologies are expected to adapt to users, and to show them precisely what they are looking for. In 2018, it is expected that over 80% of total online traffic will be represented by video viewing. Research by consulting firm Forrester predicts a 300% increase in AI investments in 2017 compared to 2016.

*Business plan:* according to the business plan provided, Little Sea Srl is going to invest in geographical expansion, exploiting the Asian market as first. Indeed, in the opinion of the owners, Asian people are more sensitive to video contents than European people, and this could potentially represent a huge opportunity to gain market share.

| Company | Status | | |
|---|---|---|---|
| Little Sea | Active | | |
| € | 2017 | 2018 | 2019 |
| | **REVENUES** | | |
| Business plan | 534.000 | 1.592.000 | 3.260.000 |
| Actual results | 260.210 | 394.154 | 448.745 |
| Delta | -273.790 | -1.197.846 | -2.811.255 |
| ***% of realization*** | ***49%*** | ***25%*** | ***14%*** |
| ***% of variation*** | ***-51%*** | ***-75%*** | ***-86%*** |
| | **EBITDA** | | |
| Business plan | 87.965 | 576.640 | 1.590.425 |
| Actual results | 4.149 | 33.690 | 63.965 |
| Delta | -83.816 | -542.950 | -1.526.460 |
| ***% of realization*** | ***5%*** | ***6%*** | ***4%*** |
| ***% of variation*** | ***-95%*** | ***-94%*** | ***-96%*** |

**Table 4.22:** *Business plan projections and actual results Little Sea Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 4.867 | *2%* | 6.248 | *2%* | 5.105 | *1%* |
| Intangible assets | 369.736 | *142%* | 519.111 | *132%* | 587.278 | *131%* |
| Financial assets | 5.000 | | 5.000 | | 5.000 | |
| Fixed capital | 379.603 | | 530.359 | | 597.383 | |
| Working capital | 40.350 | | 91.448 | | 41.143 | |
| *Invested capital* | *419.953* | | *621.807* | | *638.526* | |
| *Cash and similar* | *207.449* | *80%* | *85.309* | *22%* | *1.742* | *0%* |
| ***Intangibles / IC*** | ***88%*** | | ***83%*** | | ***92%*** | |
| ***Tangibles / IC*** | ***1%*** | | ***1%*** | | ***1%*** | |

**Table 4.23**: *Invested capital and cash and similars of Little Sea Srl,* own elaboration based on financial reports.

By looking at Little Sea financial reports, it appears that the company is experiencing a positive trend in economic results. Revenue flows went from a value of €394.154 in 2018 to an amount equal to € 448.745 in 2019. The same positive trend encompasses EBITDA, which was equal to € 33.690 in 2018 and € 63.965 in 2019. However, such results are not following business plan projections, which were expecting an EBITDA equal to € 1.590.425 in 2019, implying a negative deviation equal to -96%. Nonetheless, the company is still investing resources in the development of its activities, trying to improve its AI software. Intangible assets represented almost 92% of invested capital in 2019, while tangibles represented 1%. Such investments brought positive results, as it appears by looking at company successes. Indeed, in 2018 the company received the Best International Technology Transfer Project Award, awarded in Russia at the Skolkovo Startup Village. Moreover, in 2019 the company started a new project, encompassing AI in the financial market. The project included the provision of videos constantly updated in order to describe financial market data, such as quotas and companies' prices. Moreover, clients with special necessities can personalize their videos, including only data on their portfolios. In July 2020 the company's majority of shares (91,07%) was acquired by Doxee, a multinational company leader in the offer of products in the field of

Customer Communications Management (CCM), Paperless and Digital Customer Experience. The transfer will be completed in January 2021.

*Crowdfundme Spa*

*Vision and strategy:* Crowdfundme Spa is one of the main active platforms for ECF campaigns in the Italian scenario. It offers innovative start-ups and SMEs the possibility to overcome the funding gap through the participation of online non-professional investors.

*Market and competitive advantage:* revenues are based on the success-fee oriented business model. In other words, the platform gains fee whenever the start-ups reach the minimum target. Among its KPIs, the platform highlighted high correlation between number of registrations and € invested, and average investment constant of about €1.600.

*Business plan:* according to the business plan provided by the company, it is expected an increase in number of investors per ECF campaign, mainly due to larger start-up/PMI offers proposed, leading to an increase in users and registrations.

| **Company** | **Status** | | |
|---|---|---|---|
| Crowdfundme | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 144.609 | 399.482 | 712.703 |
| Actual results | 186.487 | 390.185 | 420.795 |
| Delta | 41.878 | -9.297 | -291.908 |
| ***% of realization*** | ***129%*** | ***98%*** | ***59%*** |
| ***% of variation*** | ***29%*** | ***-2%*** | ***-41%*** |
| | **EBITDA** | | |
| Business plan | -25.023 | 6.482 | 197.703 |
| Actual results | -35.404 | -106.446 | -846.213 |
| Delta | 10.381 | -112.928 | -1.043.916 |
| ***% of realization*** | ***141%*** | ***-1642%*** | ***-428%*** |
| ***% of variation*** | ***-41%*** | ***-1742%*** | ***-528%*** |

**Table 4.24:** *Business plan projections and actual results Crowdfundme Spa,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 2.327 | *1%* | 2.549 | *1%* | 3.311 | *1%* |
| Intangible assets | 69.167 | *37%* | 526.697 | *135%* | 808.003 | *192%* |
| Financial assets | 899 | | 899 | | 899 | |
| Fixed capital | 72.393 | | 530.145 | | 812.213 | |
| Working capital | -50.293 | | -315.776 | | -264.547 | |
| *Invested capital* | *22.100* | | *214.369* | | *547.666* | |
| *Cash and similar* | *347.766* | *186%* | *80.456* | *21%* | *687.450* | *163%* |
| ***Intangibles / IC*** | ***313%*** | | ***246%*** | | ***148%*** | |
| ***Tangibles / IC*** | ***11%*** | | ***1%*** | | ***1%*** | |

**Table 4.25**: *Invested capital and cash and similars of Crowdfundme Spa,* own elaboration based on financial reports.

The company results showed a positive trend in revenue generation, meaning the continuity of activity albeit not in line with projections disclosed during the ECF campaign. However, EBITDA results do not follow such a positive trend, indeed in 2019 registered EBITDA was negative and equal to € -846.213. For what concern this last year, it has been a peculiar period for the company, since on 25th March of 2019 it carried out its first IPO in the AIM, Italian capital market. Indeed, it is reasonable to suppose that high costs have been sustained in order to implement the quotation. By making this, Crowdfundme Spa is the only Italian ECF platform quoted in the capital market.

*Take Off Srl*

*Vision and strategy:* TakeOff Srl is an incubator for start-ups, registered in the innovative SME register. It provides professional skills, offices and physical spaces, and collects capital to be invested in start-ups.

*Market and competitive advantage:* the start-up is based in 10 Italian cities, and aimed at expanding in 9 more by 2017. It had company headquarters in the UK, and aimed at geographical expansion in Canada, USA, Switzerland, Malta, Russia, Cech Republic and Bulgaria by 2017. Indeed, the start-up relied on high resources, both in terms of capital and assets, and in terms of knowledge and skills of its team. By looking at the market scenario, it appears that in 2016 there were 8.836 start-ups around the world, helped by 387 incubators. In the same year, Italian incubators invested € 2.290.000 in start-ups, the most of which were located in Lombardia, Emilia-Romagna, Lazio and Veneto. The increase in the number of start-ups is also pushed by law benefits.

*Business plan:* according to the business plan provided, the company is going to improve its corporate structure and its operations, in order to implement an exit strategy by 2020, which includes an IPO. In this way investors can make their investment liquid.

| **Company** | **Status** | | |
|---|---|---|---|
| Take Off | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 70.000 | 215.000 | 275.000 |
| Actual results | 138.806 | 1.275.023 | 1.572.718 |
| Delta | 68.806 | 1.060.023 | 1.297.718 |
| ***% of realization*** | ***198%*** | ***593%*** | ***572%*** |
| ***% of variation*** | ***98%*** | ***493%*** | ***472%*** |
| | **EBITDA** | | |
| Business plan | 25.250 | 81.300 | 102.200 |
| Actual results | 31.592 | 373.272 | 505.414 |
| Delta | 6.342 | 291.972 | 403.214 |
| ***% of realization*** | ***125%*** | ***459%*** | ***495%*** |
| ***% of variation*** | ***25%*** | ***359%*** | ***395%*** |

**Table 4.26**: *Business plan projections and actual results TakeOff Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 0 | *0%* | 24.011 | *2%* | 22.000 | *1%* |
| Intangible assets | 800 | *1%* | 0 | *0%* | 506.000 | *32%* |
| Financial assets | 504.500 | | 551.500 | | 598.500 | |
| Fixed capital | 505.300 | | 575.511 | | 1.126.500 | |
| Working capital | 15.333 | | 537.680 | | 139.692 | |
| *Invested capital* | *520.633* | | *1.113.191* | | *1.266.192* | |
| *Cash and similar* | *24.159* | *17%* | *216* | *0%* | *39.854* | *3%* |
| ***Intangibles / IC*** | ***0%*** | | ***0%*** | | ***40%*** | |
| ***Tangibles / IC*** | ***0%*** | | ***2%*** | | ***2%*** | |

**Table 4.27:** *Invested capital and cash and similars of TakeOff Srl,* own elaboration based on financial reports.

Take Off Srl is a still active and well performing company, which keeps on operating as an incubator for start-ups. By looking at its economic results, it appears how they overperformed projections declared in the business plan. Indeed, business plan forecasts have been probably computed in a conservative way, as actual financial results showed a percentage of realization higher than 100% for both revenues generation and EBITDA. Revenues in 2019 appear to be equal to € 1.572.718, while they were expected to value € 275.000, implying a percentage of realization equal to 572%. In the same way, EBITDA generation showed a very positive result, letting to 395% of variation, with an actual EBITDA almost five times higher than the one expected. In compliance with such a positive trend in value creation, the company opted for a second round of ECF during 2018, concluding it successfully as it happened for the first one. During this second ECF round, the start-up collected € 203.500 provided by 12 investors. As it appears from financial reports, the company is currently operating in Italy, UK and Bulgaria and it aims at investing in further geographical expansion towards China, India, Russia, USA and United Arab Emirates.

*Alea Srl*

*Vision and strategy:* Alea Srl operates in ITC and digital technologies. It is highly specialized in the development of smartphone applications for communication in real time and developed the Talkway brand. Talkway is a professional Push To Talk (PTT) app through which companies can replace traditional radio transmitters. Through the Talkway system, emergency communications can be easily carried out through the smartphones, thus easing the process. Moreover, the new technology guarantees geolocation and a web platform for supervision and monitoring by the operations center.

*Market and competitive advantage:* in 2016, the company started a partnership with Vodafone and after that with TIM too, both interested in its PTT technology. Alea Srl bases its competitive advantage on the production and commercialization of Talkway, which represents an innovative technology for PTT market sector. The main competitors identified are companies such as Zello, Tassta and YouCo. However, Talkways is the best fit for SME enterprises, as it does not imply high costs for implementation and can easily be used through employees' smartphones. Target consumers are police, armed forces, civil protection, private security, large industrial facilities, chemical and pharmaceutical industries, construction sites, oil platforms, ships of the Merchant and Military Navy.

*Business plan:* according to the business plan provided, raised capital is going to be invested in HR, R&D and legal consultants (90%), while 10% for the purchase of the necessary equipment with particular regard to the possibility of offering the Mission Critical Push To Talk (MCPTT) version at competitive prices compared to other international players. By looking at revenue's generation, they are expected to derive mainly from industrial consumers (50%), 30% by police departments while 20% by private security.

| **Company** | **Status** | | |
|---|---|---|---|
| Alea | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 600.000 | 900.000 | 1.500.000 |
| Actual results | 22.595.565 | 17.808.780 | 18.480.809 |
| Delta | 21.995.565 | 16.908.780 | 16.980.809 |
| ***% of realization*** | ***3766%*** | ***1979%*** | ***1232%*** |
| ***% of variation*** | ***3666%*** | ***1879%*** | ***1132%*** |
| | **EBITDA** | | |
| Business plan | 170.000 | 350.000 | 700.000 |
| Actual results | 2.920.706 | 1.397.752 | 2.142.155 |
| Delta | 2.750.706 | 1.047.752 | 1.442.155 |
| ***% of realization*** | ***1718%*** | ***399%*** | ***306%*** |
| ***% of variation*** | ***1618%*** | ***299%*** | ***206%*** |

**Table 4.28:** *Business plan projections and actual results Alea Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 8.301.959 | *37%* | 7.826.055 | *44%* | 7.651.994 | *41%* |
| Intangible assets | 118.481 | *1%* | 105.997 | *1%* | 104.123 | *1%* |
| Financial assets | 295 | | 295 | | 610.295 | |
| Fixed capital | 8.420.735 | | 7.932.347 | | 8.366.412 | |
| Working capital | 1.744.429 | | 1.841.255 | | 2.350.982 | |
| *Invested capital* | *10.165.164* | | *9.773.602* | | *10.717.394* | |
| *Cash and similar* | *3.361.555* | *15%* | *2.304.146* | *13%* | *2.727.277* | *15%* |
| ***Intangibles / IC*** | ***1%*** | | ***1%*** | | ***1%*** | |
| ***Tangibles / IC*** | ***82%*** | | ***80%*** | | ***71%*** | |

**Table 4.29:** *Invested capital and cash and similars of Alea Srl,* own elaboration based on financial reports.

Alea Srl is a still active and impressively well performing company. Economic results generated by the start-up showed high value generation, supported by a positive trend and meaning stability of activity and efficiency in operating activities. During year 2019, both revenues and EBITDA results overperformed those expected by the business plan, respectively reaching the value of € 18.480.809 and € 2.142.155. As disclosed in the business plan, financial resources obtained during the ECF campaign have been invested in order to enhance the product offered. In this way, Talkway has become one of the most adopted products within the whole Italian scenario. During 2019, Alea's shareholders participated to TCCA Control Room Workshop meeting, where they had the possibility to discuss about challenges of control rooms in broadband networks in collaboration with 65 representatives of the public safety community, such as Airbus, DAMN Cellular Systems, Ericsson, Nokia, and most of the European Police Institutions. It also took part in the TCCA project in order to establish the importance of mission for critical service interoperability and the increasing adoption of 4G/LTE-based services by critical users. Moreover, in September 2019 the company participated in the fourth MCX Plugtests organized by the ETSI (European Telecommunications Standards Institute).

*Graphene XT Srl*

*Vision and strategy:* Graphene XT operates in the nano technology sector, focusing on R&D on graphene. Graphene is expected to be the most utilized material in the near future, thanks to its resistance, light weight, versatility. The company is specialized in the production of graphene in liquid suspension in water through a patented proprietary process. Potential clients of the company are all those companies which require graphene in order to produce their products. Moreover, Graphene XT has obtained numerous patents for its technology.

*Market and competitive advantage:* the world market of graphene is in full development and will be one of the protagonists of the industrial revolution 4.0. The global graphene market is projected to reach $ 675 million in 2020 with an annual growth rate of 58.7%. Moreover, the company has already agreed various partnerships with, for example, Italian multinational Oil & Gas in the drilling sector, Cariaggi Lanificio Spa for high fashion wool yarns. Currently, the main competitors are Directa Plus (Italy), Vorbeck (USA), AGM (UK).

*Business plan:* by looking at the business plan, it appears that the company consumer target is going to be each innovative company looking for exploiting graphene in its R&D division. The market served is the B2B market. Capital raised is going to be invested to expand commercial employees, to acquire new machinery, to increase R&D activity, to improve brand identity and brand awareness in clients.

| Company | Status | | |
|---|---|---|---|
| Graphene XT | Active | | |
| € | 2017 | 2018 | 2019 |
| **REVENUES** | | | |
| Business plan | n.a. | 560.000 | 1.120.000 |
| Actual results | n.a. | 118.193 | 157.609 |
| Delta | n.a. | -441.807 | -962.391 |
| ***% of realization*** | - | *21%* | *14%* |
| ***% of variation*** | - | *-79%* | *-86%* |
| **EBITDA** | | | |
| Business plan | n.a. | 309.450 | 768.900 |
| Actual results | n.a. | -72.020 | -68.642 |
| Delta | n.a. | -381.470 | -837.542 |
| ***% of realization*** | - | *-23%* | *-9%* |
| ***% of variation*** | - | *-123%* | *-109%* |

**Table 4.30**: *Business plan projections and actual results Graphene XT Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 29.376 | *n.a.* | 19.065 | *3%* | 11.060 | *1%* |
| Intangible assets | 44.860 | *n.a.* | 37.145 | *7%* | 26.911 | *2%* |
| Financial assets | 0 | | 447 | | 0 | |
| Fixed capital | 74.236 | | 56.657 | | 37.971 | |
| Working capital | 12.675 | | 3.808 | | 36.689 | |
| *Invested capital* | *86.911* | | *60.465* | | *74.660* | |
| *Cash and similar* | *383.685* | *n.a.* | *309.114* | *55%* | *234.975* | *21%* |
| ***Intangibles / IC*** | ***52%*** | | ***61%*** | | ***36%*** | |
| ***Tangibles / IC*** | ***34%*** | | ***32%*** | | ***15%*** | |

**Table 4.31:** *Invested capital and cash and similars of Graphene XT Srl,* own elaboration based on financial reports.

For what concerns economic results, they are still not in line with those forecasted by the business plan projections and EBITDA results are still negative, even though they have increased from 2018 to 2019. Even revenues are increasing, with an average growth rate equal to +33% for the period 2017-2019. By looking at Graphene XT social media page, it immediately appears the constant communication with clients. Indeed, the page is constantly updated, with both technical information and more soft information in order to create a sort of brand community. Indeed, resources invested in this kind of communication strategies are in line with plans disclosed in the preliminary documents during the ECF campaign. Moreover, by taking a look at the company's website, it is possible to see the increasing in product range, as declared in the business plan. Indeed, thanks to R&D investments taken, the company currently offers 8 different graphene-derived products, each of them peculiar for special purposes. Furthermore, the company now serves different market industries, including engineering, aerospace, railway, textile, energy, petrochemical, optical, construction, automotive, sports, electronics, nautical.

*Yakkyo Srl*

*Vision and strategy:* Yakkyo describes itself as the Amazon for businesses dedicated to SMEs who want to buy from China. The company aims at easing the traditional search process by solving all import-related problems such as language barriers, minimum order, shipping and customs clearance procedure. The business model relies on two channels through which clients can buy online products: Yakkyo MyBOT and the online form.

*Market and competitive advantage:* China appears to be one of the main commercial partners of Europe. Indeed, the market for imports of products from China into Europe has been growing steadily in recent years with a total value in 2015 of € 350 billion in EU-7 (Belgium, England, Germany, Italy, Spain, Holland, and France). The company relies on its innovative technology which leads clients to easily import from China, also through the implementation of AI.

*Business plan:* by looking at the business plan, it appears that the company aims at strengthening the Google Adwords campaigns as well as advertising on Linkedin and profiled DEM campaigns. Furthermore, funds are going to be used to improve marketing and communication as well as to increase to market share and acquire new customers.

| **Company** | **Status** | | |
|---|---|---|---|
| Yakkyo | Active | | |
| **€** | **2017** | **2018** | **2019** |
| **REVENUES** | | | |
| Business plan | n.a. | 3.116.229 | 19.160.347 |
| Actual results | 892.309 | 1.525.322 | 2.348.246 |
| Delta | n.a. | -1.590.907 | -16.812.101 |
| ***% of realization*** | **-** | ***49%*** | ***12%*** |
| ***% of variation*** | **-** | ***-51%*** | ***-88%*** |
| **EBITDA** | | | |
| Business plan | n.a. | 327.099 | 1.349.553 |
| Actual results | 3.857 | 316.987 | 179.909 |
| Delta | n.a. | -10.112 | -1.169.644 |
| ***% of realization*** | **-** | ***97%*** | ***13%*** |
| ***% of variation*** | **-** | ***-3%*** | ***-87%*** |

**Table 4.32:** *Business plan projections and actual results Yakkyo Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 0 | *0%* | 3.363 | *0%* | 5.728 | *0%* |
| Intangible assets | 1.127 | *0%* | 140.357 | *9%* | 463.484 | *20%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 1.127 | | 143.720 | | 469.212 | |
| Working capital | 89.514 | | 3.629 | | 46.527 | |
| *Invested capital* | *90.641* | | *147.349* | | *515.739* | |
| *Cash and similar* | *462.191* | *52%* | *633.715* | *42%* | *995.565* | *42%* |
| ***Intangibles / IC*** | ***1%*** | | ***95%*** | | ***90%*** | |
| ***Tangibles / IC*** | ***0%*** | | ***2%*** | | ***1%*** | |

**Table 4.33:** *Invested capital and cash and similars of Yakkyo Srl,* own elaboration based on financial reports.

Yakkyo Srl is still an operating company. However, by looking at its website, its name has changed into Yakkyofy. By looking at the economic results, those achieved by the start-up are still not in line with business plan projections. Revenues in 2019 were equal to € 2.348.246, but still the variation rate was negative (-88%), meaning that the company was unable to meet its expectations. Under the name of Yakkyofy, the company sustained a second ECF round during 2020 to further increase its capital. During the last three years, the company has experienced an expansion phase, ending up in 2020 with the launch of its app for mobile devices. Indeed, the app is available in Shopify store, an online store directed to B2B transactions. The successfully closed ECF campaign in 2020 is a representation of investors' trust in the company's strategy. In addition to this, during 2020 the company developed Yakkyofy plugin WordPress, thus offering its clients more competitive prices. It is reasonable to assume that the company is still investing an important part of its resources in order to achieve strategic goals, such as the launch of the app, the direct communication with clients, the offering of more competitive prices and the establishment of its competitive positioning, thus creating the base for its sustainable competitive advantage. By looking at balance sheets, both tangibles and intangibles have increased. During 2019, the last category represented 90% of invested capital.

*Ambiens VR Srl*

*Vision and strategy:* AmbiensVR is the platform that brings architecture and design into virtual reality, creating interactive environments available on smartphones. The main focus is to provide an innovative way to communicate projects to clients, offering an interactive vision through virtual elements.

*Market and competitive advantage:* AmbiensVR takes part in the market for professional-grade graphic design software, a very rich (around $ 16 billion globally) and stable market. This market is about to experience the revolution of Virtual Reality which is, in fact, the natural evolution of the three-dimensional representation widespread today. The main customer targets are designers, real estate agencies, manufacturers of furniture and suppliers.

*Business plan:* the declared goal is to proceed simultaneously with two acquisition strategies, one offline (fairs and events) and one online. Revenues flows are basically derived from two products: Virtual Reality and Graphics Software.

| Company | Status | | |
|---|---|---|---|
| AmbiensVR | Active | | |
| € | 2017 | 2018 | 2019 |
| **REVENUES** | | | |
| Business plan | 260.086 | 706.987 | 2.203.968 |
| Actual results | 66.997 | 179.146 | 167.535 |
| Delta | -193.089 | -527.841 | -2.036.433 |
| ***% of realization*** | ***26%*** | ***25%*** | ***8%*** |
| ***% of variation*** | ***-74%*** | ***-75%*** | ***-92%*** |
| **EBITDA** | | | |
| Business plan | -203.717 | -171.814 | 1.258.572 |
| Actual results | -77.676 | 72.954 | 23.162 |
| Delta | -126.041 | -244.768 | -1.235.410 |
| ***% of realization*** | ***38%*** | ***-42%*** | ***2%*** |
| ***% of variation*** | ***62%*** | ***142%*** | ***-98%*** |

**Table 4.34:** *Business plan projections and actual results AmbiensVR Srl,* own elaboration based on financial reports.

| € | 2017 | *on revenues* | 2018 | *on revenues* | 2019 | *on revenues* |
|---|---|---|---|---|---|---|
| Tangible assets | 4.206 | *6%* | 10.933 | *6%* | 9.438 | *6%* |
| Intangible assets | 75.527 | *113%* | 161.889 | *90%* | 141.753 | *85%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 79.733 | | 172.822 | | 151.191 | |
| Working capital | -3.400 | | 8.937 | | 20.811 | |
| *Invested capital* | *76.333* | | *181.759* | | *172.002* | |
| *Cash and similar* | *64.381* | *96%* | *8.499* | *5%* | *37* | *0%* |
| ***Intangibles / IC*** | ***99%*** | | ***89%*** | | ***82%*** | |
| ***Tangibles / IC*** | ***6%*** | | ***6%*** | | ***5%*** | |

**Table 4.35:** *Invested capital and cash and similars of AmbiensVR Srl,* own elaboration based on financial reports.

By looking at economic results, it immediately appears how the optimistic business plan projections have not been achieved yet. Indeed, revenue generation showed a percentage of realization only equal to 8% (2019 revenues equal to € 167.535 rather than € 2 million expected), while EBITDA 2% (2019 EBITDA equal to € 23.162 rather than € 1 million expected). At the same time, both categories showed negative variation rates (respectively equal to -92% and -98%), meaning that the company negatively deviated from its projection values. However, the start-up made investments in marketing and communication, as it is possible to assume by looking both at its website and social media page. From the Facebook page it appears the creation of a community of users, and the development of a brand identity connected with AmbiensVR products and related lifestyles.

*Raft Srl*

*Vision and strategy:* the start-up offers innovative products and services in the sporting field, technological services for companies and sport associations, organization and management of events in general, merchandising promotion and exploitation activities. The most innovative product is the online platform which leads the organization of tennis championships for amateur players, thought to replicate professional matches but affordable for every kind of player aiming at matching with other players.

*Market and competitive advantage:* by looking at the current competitors, Raft Srl identified the basis of its competitive advantage on the quality of its offer, the customer experience and customer care provided. Indeed, there are already several online platforms which organize sport championships, but none of them is focused on tennis. Moreover, the platform not only focuses on tennis (1.400.000 players in Italy in 2016), but it includes all the sports which are played with a racket, such as badminton (5.000), paddle (10.000), ping pong (13.000), beach tennis (300.000).

*Business plan:* funds raised will lead the improvement of the website page, the development of new websites focused on other sports rather than tennis, and in activities towards the expansion into new geographical markets.

| **Company** | **Status** | | |
|---|---|---|---|
| Raft | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 18.200 | 47.110 | 98.169 |
| Financial results | 5.000 | 8.022 | 15.757 |
| Delta | -13.200 | -39.088 | -82.412 |
| ***% of realization*** | ***27%*** | ***17%*** | ***16%*** |
| ***% of variation*** | ***-73%*** | ***-83%*** | ***-84%*** |
| | **EBITDA** | | |
| Business plan | 12.750 | 39.010 | 90.069 |
| Financial results | -1.075 | 2.538 | 7.124 |
| Delta | -13.825 | -36.472 | -82.945 |
| ***% of realization*** | ***-8%*** | ***7%*** | ***8%*** |
| ***% of variation*** | ***-108%*** | ***-93%*** | ***-92%*** |

**Table 4.36:** *Business plan projections and actual results Raft Srl,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 1.382 | *28%* | 1.075 | *13%* | 768 | *5%* |
| Intangible assets | 27.537 | *551%* | 37.853 | *472%* | 29.588 | *188%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 28.919 | | 38.928 | | 30.356 | |
| Working capital | 10.604 | | 20.399 | | 24.585 | |
| *Invested capital* | *39.523* | | *59.327* | | *54.941* | |
| *Cash and similar* | *29.660* | *593%* | *984* | *12%* | *39* | *0%* |
| ***Intangibles / I.C.*** | ***70%*** | | ***64%*** | | ***54%*** | |
| ***Tangibles / I.C.*** | ***3%*** | | ***2%*** | | ***1%*** | |

**Table 4.37***: Invested capital and cash and similars of Raft Srl,* own elaboration based on financial reports.

The company is still active. Both revenues and EBITDA are showing a positive trend, even if not as much as forecasted by business plan projections, showing variation rates respectively equal to -84% and -92%. Currently the company has a very active webpage, as the result of communication investments. Indeed, the team achieved to create an active community of users, consequently creating a stronger brand awareness among players. Moreover, matches organized by the platform have become nationally known, thus increasing even more website visibility. By looking at intangible assets' resources, during 2018 they appeared to be more than half of invested capital (64% of IC), as a consequence of high investments in both R&D and marketing and communication activities. In this way, players participation has shown an important increase, meaning that the company is performing well, even though EBITDA results are still too low.

*Cynny Spa*

*Vision and strategy:* Cynny Spa is an innovative enterprise which offers a platform to create and share video and multimedia contents on the most famous social networks. It operates through two different divisions: B2C division, through the product MorphCast (software which creates video contents); B2B division, through the product CynnySpace (online cloud to storage data).

*Market and competitive advantage:* the product focuses on the "mobile video" segment which, according to recent market data, is the Internet channel that is showing exponential growth (+63% CAGR by 2020). The biggest competitors identified are Snapchat, Instagram and Facebook. However, Cynny bases its competitive advantage on its innovative software, which is capable of creating new videos starting from photos and expressions. Moreover, the product offered by the start-up can potentially be adopted in creating efficient advertising contents, tailor made for each single client. The target consumers are mainly young people, including the so-called millennials.

*Business plan:* by looking at the business plan provided, capital raised is going to be invested mainly in R&D expenditures (almost 100%). Among the goals described for the medium-long term horizon, Cynny aims at acquiring 20 million users for the platform MorphCast and to develop a photo-sharing platform, acquiring 122 million users.

| Company | Status | | |
|---|---|---|---|
| Cynny | Active | | |
| € | 2017 | 2018 | 2019 |
| | **REVENUES** | | |
| Business plan | n.a. | 4.643.840 | 66.558.261 |
| Actual results | 1.169.437 | 863.731 | 482.744 |
| Delta | n.a. | -3.780.109 | -66.075.517 |
| ***% of realization*** | - | ***19%*** | ***1%*** |
| ***% of variation*** | - | ***-81%*** | ***-99%*** |
| | **EBITDA** | | |
| Business plan | n.a. | 188.769 | 35.818.095 |
| Actual results | -1.356.779 | -1.065.790 | -453.338 |
| Delta | n.a. | -1.254.559 | -36.271.433 |
| ***% of realization*** | - | ***-565%*** | ***-1%*** |
| ***% of variation*** | - | ***-665%*** | ***-101%*** |

**Table 4.38:** *Business plan projections and actual results Cynny Spa,* own elaboration based on financial reports.

| € | 2017 | on revenues | 2018 | on revenues | 2019 | on revenues |
|---|---|---|---|---|---|---|
| Tangible assets | 47.598 | *4%* | 28.708 | *3%* | 16.938 | *4%* |
| Intangible assets | 1.159.551 | *99%* | 1.963.665 | *227%* | 2.332.659 | *483%* |
| Financial assets | 1.808.933 | | 1.772.037 | | 80.598 | |
| Fixed capital | 3.016.082 | | 3.764.410 | | 2.430.195 | |
| Working capital | -134.837 | | 73.402 | | -103.655 | |
| *Invested capital* | *2.881.245* | | *3.837.812* | | *2.326.540* | |
| *Cash and similar* | *76.889* | *7%* | *462.780* | *54%* | *21.673* | *4%* |
| ***Intangibles / IC*** | ***40%*** | | ***51%*** | | ***100%*** | |
| ***Tangibles / IC*** | ***2%*** | | ***1%*** | | ***1%*** | |

**Table 4.39:** *Invested capital and cash and similars of Cynny Spa,* own elaboration based on financial reports.

By looking at Table 4.38, it immediately appears the low percentage of realization of financial results compared with business plan projections. During the last year, the company has not been able to generate positive EBITDA. Besides, 2019 results accounted for revenues value equal to € 482.744, while they were expected to end up equal to almost € 66 million. It is possible to assume that the company is still facing operating inefficiencies, facing costs higher than revenues value. As declared in the business plan, the company invested the majority of resources collected during the ECF campaign in order to improve and develop its R&D activities. Indeed, intangible assets value reported in the balance sheet showed an increased value. Such assets category had a value equal to € 1.963.665 in 2018 while it had a value of € 2.332.659 in 2019. Such investments have increased company value, which during 2018 was perceived as one of the most valuable start-ups funded through ECF. Indeed, in 2018 the company developed M-roll, an innovative software for digital advertising which allows users to make videos able to interact in real time with the emotions of the viewer. Moreover, in order to obtain the resources needed to go to the market with the new product, during 2018 the company carried out a second ECF campaign through the platform Crowdfundme.it. Always in

2018, the company started partnerships with Nucco Brain and Unit9 agencies, which are key international intermediaries between digital content developers and marketing agencies.

*Felfil Srl*

*Vision and strategy:* Felfil's mission is to make 3D printing ecological and economical. The project wants to allow anyone to independently produce their own print filament starting from industrial granulate or by recycling plastic materials. The first step in this direction was made through the offering of Felfil Evo, a plastic extruder capable of producing 3D printable filament.

*Market and competitive advantage:* the 3D printer market is continuing its transformation from a niche market to a global market with a large user base between businesses and consumers. Sales of 3D printers in 2015 were in the order of 240 thousand units, with growth compared to the previous year by over +60%; and by the end of 2016, there were expected to be approximately 496 thousand units with a growth of +103% compared to 2015, and the trend was expected to double every year to reach the figure of 5.6 million units in 2019. The project goal pursued from Felfil was to create a high-performance machine at an advantageous price.

*Business plan:* relying on the capital raised, the start-up aimed at expanding its market share, by acquiring new users and by incrementing marketing and communications activities. Customers are divided into B2C and B2B targets, and they both could purchase through the online platform Indiegogo. Resources raised are going to be invested in R&D (45%), marketing (35%), operations (15%), general and administrative expenses (5%).

| **Company** | **Status** | | |
|---|---|---|---|
| Felfil | Active | | |
| **€** | **2017** | **2018** | **2019** |
| **REVENUES** | | | |
| Business plan | 11.000 | 110.500 | 359.500 |
| Financial results | 85.550 | 96.068 | 143.037 |
| Delta | 74.550 | -14.432 | -216.463 |
| ***% of realization*** | ***778%*** | ***87%*** | ***40%*** |
| ***% of variation*** | ***678%*** | ***-13%*** | ***-60%*** |
| **EBITDA** | | | |
| Business plan | -900 | -35.900 | -67.700 |
| Financial results | 8.537 | 15.632 | 17.780 |
| Delta | -9.437 | -51.532 | -85.480 |
| ***% of realization*** | ***-949%*** | ***-44%*** | ***-26%*** |
| ***% of variation*** | ***1049%*** | ***144%*** | ***126%*** |

**Table 4.40:** *Business plan projections and actual results Felfil Srl,* own elaboration based on financial reports.

| € | 2017 | on revenues | 2018 | on revenues | 2019 | on revenues |
|---|---|---|---|---|---|---|
| Tangible assets | 2.889 | *3%* | 2.202 | *2%* | 1.514 | *1%* |
| Intangible assets | 30.922 | *36%* | 32.069 | *33%* | 25.379 | *18%* |
| Financial assets | 0 | | 0 | | 0 | |
| Fixed capital | 33.811 | | 34.271 | | 26.893 | |
| Working capital | 6.164 | | 6.311 | | -14.342 | |
| *Invested capital* | *39.975* | | *40.582* | | *12.551* | |
| *Cash and similar* | *84.792* | *99%* | *79.584* | *83%* | *100.962* | *71%* |
| ***Intangibles / IC*** | ***77%*** | | ***79%*** | | ***202%*** | |
| ***Tangibles / IC*** | ***7%*** | | ***5%*** | | ***12%*** | |

**Table 4.41:** *Invested capital and cash and similars of Felfil Srl,* own elaboration based on financial reports.

As it appears by its financial reports, Felfil Srl is a well performing company, albeit its revenues generation is still not in line with business plan projections (realization rate equal to 40%). However, EBITDA results overperformed projections (actual results equal to € 17.780), positively deviating by 126% in 2019. By looking from a broader perspective, it appears that the company has been constantly increasing its value generation during the period 2017-2019. Indeed, economic results previously of the ECF company were negative, while from 2018, the start-up generated positive net profit. This may be seen as a positive implementation of the resources collected, that had been mainly invested in the enhancement of the product offered through investments in R&D division and the improvement of marketing and communication activities, as it is demonstrated now by the constantly updated and easy-to-use website page. Currently, Felfil Evo is a valuable product offered to both designers and engineers, aerospace engineers and biomedical scientists.

*SkyMeeting Spa*

*Vision and strategy:* SkyMeeting Spa is an innovative start-up which operates through its software SkyAccounting. Such software works as billing and accounting cloud software for accountants, companies and VAT numbers: through its implementation, clients and accountants can potentially share all documentation in real time and on the same platform, drastically reducing costs and allowing both parties to always be aligned with their work. The company already offers six different products according to the needs of the company served (SME, corporate, multinational corporate, small corporate, free-lance workers, accountants).

*Market and competitive advantage:* nowadays there is an expansion of Internet-based accounting services. Such services are normally divided into firm-oriented and accounting-oriented service. However, SkyMeeting encompasses both the categories. According to the business plan presented by the start-up, the software market for cloud systems for companies and accountants was expected to show a development trend of 300% over the next three years. The target for the SkyAccounting offer was estimated to be equal to approximately 4.5 million companies and 116.245 accountants in Italy. SkyMeeting bases its competitive advantage on the constant sharing of data between client firms, accountants and banks, as well as quality and security of its software, and the professional knowledge owned by its operators. The main competitors identified are Zucchetti, Team System, Innovare 24, Passepartout, Ranocchi Lab.

*Business plan:* according to the business plan provided, future investments will be done towards the improvement of the online software, marketing and communications, and the development of a Premium service. The development of the business plan is structured in four phases, each of them include high promotion of the service.

| **Company** | **Status** | | |
|---|---|---|---|
| SkyMeeting | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 1.005.885 | 2.345.897 | 5.612.670 |
| Actual results | 730.432 | 828.629 | 1.143.461 |
| Delta | -275.453 | -1.517.268 | -4.469.209 |
| ***% of realization*** | ***73%*** | ***35%*** | ***20%*** |
| ***% of variation*** | ***-27%*** | ***-65%*** | ***-80%*** |
| | **EBITDA** | | |
| Business plan | 405.625 | 1.266.879 | 2.735.180 |
| Actual results | 285.942 | 361.536 | 386.385 |
| Delta | -119.683 | -905.343 | -2.348.795 |
| ***% of realization*** | ***70%*** | ***29%*** | ***14%*** |
| ***% of variation*** | ***-30%*** | ***-71%*** | ***-86%*** |

**Table 4.42:** *Business plan projections and actual results SkyMeeting Spa,* own elaboration based on financial reports.

| **€** | **2017** | ***on revenues*** | **2018** | ***on revenues*** | **2019** | ***on revenues*** |
|---|---|---|---|---|---|---|
| Tangible assets | 37.467 | *5%* | 33.079 | *4%* | 30.543 | *3%* |
| Intangible assets | 2.339.834 | *320%* | 2.253.346 | *272%* | 2.270.623 | *199%* |
| Financial assets | 25.886 | | 25.886 | | 25.888 | |
| Fixed capital | 2.403.187 | | 2.312.311 | | 2.327.054 | |
| Working capital | 184.286 | | 49.537 | | 477.069 | |
| *Invested capital* | *2.587.473* | | *2.361.848* | | *2.804.123* | |
| *Cash and similar* | *419* | *0%* | *2.470* | *0%* | *22.039* | *2%* |
| ***Intangibles / IC*** | ***90%*** | | ***95%*** | | ***81%*** | |
| ***Tangibles / IC*** | ***1%*** | | ***1%*** | | ***1%*** | |

**Table 4.43:** *Invested capital and cash and similars of SkyMeeting Spa,* own elaboration based on financial reports.

SkyMeeting Spa is a well performing company, and its software SkyAccouting is collecting more and more appreciation among clients. As it appears by the financial results, company value creation is following a positive trend, with an average revenues growth rate equal to +26%. Indeed, both revenues generation and EBITDA results have increased starting from 2018, year following the closing of the ECF campaign. During the last financial year available, the company accounted for revenues amount equal to € 1.143.461, showing a percentage of realization of 20% with respect to business plan projections. In the same way, EBITDA value accounted in 2019 was equal to € 386.385, meaning 14% of realization of business plan goals.

Despite the company is still not reaching target results declared, it is showing a growth trend and its value started to be recognized by both clients and investors. Indeed, during 2019 the company closed a second round ECF campaign through the platform BacktoWork24.com, successfully hitting the target amount. According to the updated business plan, the resources collected are going to further improve SkyAccouting software.

*Infinity Hub Spa*

*Vision and strategy:* the innovative start-up offers solutions for green energy affordable to both companies and families. The main goal of the company is to become the focus point for all green-energy creation activities and Cleantech companies in the geographical areas around Trento. The operating arm of YHUB are local businesses, artisans, startups and innovative SMEs in the area, which will be guided to settle in the local Hubs, giving them the opportunity to become part of the Infinityhub "incubation and support for innovation" project.

*Market and competitive advantage:* the market for green and renewable energy is experiencing a huge expansion. In 2015, Green Energy reported that 100% of the energy utilized will be totally renewable by 2050, thus creating high opportunities for companies operating in such a market sector. The competitive advantage is based on the idea to make green and renewable energy affordable for every kind of user. In this way, the most optimistic sector in which to invest is the home-building one.

*Business plan:* InfinityHub aims at acting as a global contractor especially for structures such as hotels, hospitals, *Rsa*, large sports facilities, shopping centers and providing them with green energy. According to the business plan, capital raised would be invested in human resources improvement and enlargement, including both software engineers and financial and accountants' workers, and marketing and communication specialists. Moreover, the company aimed at implementing a database containing all data collected during its operating activities.

| **Company** | **Status** | | |
|---|---|---|---|
| Infinity Hub | Active | | |
| **€** | **2017** | **2018** | **2019** |
| | **REVENUES** | | |
| Business plan | 5.037.724 | 10.530.156 | 10.892.252 |
| Actual results | 120.801 | 725.923 | 1.479.711 |
| Delta | -4.916.923 | -9.804.233 | -9.412.541 |
| ***% of realization*** | ***2%*** | ***7%*** | ***14%*** |
| ***% of variation*** | ***-98%*** | ***-93%*** | ***-86%*** |
| | **EBITDA** | | |
| Business plan | 1.587.011 | 4.901.609 | 5.096.791 |
| Actual results | 15.642 | 102.587 | 74.926 |
| Delta | -1.571.369 | -4.799.022 | -5.021.865 |
| ***% of realization*** | ***1%*** | ***2%*** | ***1%*** |
| ***% of variation*** | ***-99%*** | ***-98%*** | ***-99%*** |

**Table 4.44:** *Business plan projections and actual results Infinity Hub Spa,* own elaboration based on financial reports.

| € | 2017 | on revenues | 2018 | on revenues | 2019 | on revenues |
|---|---|---|---|---|---|---|
| Tangible assets | 0 | *0%* | 0 | *0%* | 0 | *0%* |
| Intangible assets | 30.629 | *25%* | 24.190 | *3%* | 64.074 | *4%* |
| Financial assets | 12.800 | | 51.340 | | 164.957 | |
| Fixed capital | 43.429 | | 75.530 | | 229.031 | |
| Working capital | 103.132 | | 251.122 | | 133.011 | |
| *Invested capital* | *146.561* | | *326.652* | | *362.042* | |
| *Cash and similar* | *10.850* | *9%* | *32.450* | *4%* | *3.008* | *0%* |
| ***Intangibles / IC*** | ***21%*** | | ***7%*** | | ***18%*** | |
| ***Tangibles / IC*** | ***0%*** | | ***0%*** | | ***0%*** | |

**Table 4.45:** *Invested capital and cash and similars of Infinity Hub Spa,* own elaboration based on financial reports.

Infinity Hus Spa is a still well performing company. As it appears by the income statement, revenues showed an increasing trend, albeit still completely not in line with business plan projections. Indeed, revenue forecasts for 2019 were expecting the realization of almost € 11 million revenues, which perhaps was a too optimistic scenario for the second year immediately after the injections of liquidity and the realization of new investments. The same reasoning applies to EBITDA value, which in 2019 negatively deviated by -99% from projections, with an EBITDA result equal to € 74.926 rather than € 5 million. In order to understand the revenue model, it is important to understand the position of Infinity Hub, which plays the role of global contractor, thus assuming all the burdens and costs related to the implementation of the order, guarantees the organization and the success of the entire process. Consequently, the company profits are made by applying fees to the operating companies. Besides, thanks to the big expansion of the green energy market, the company experienced an important growth and during 2019 it started a second round ECF campaign through the platform Crowdfundme.it.

*RESULTS*

This final paragraph stresses out the main observable results coming from the analysis of the 50 companies forming the sample. From a preliminary research, 11 start-ups have not been found and for this reason they have considered defaulted for this case study. Such companies are: Webeers Srl, Diamass Srl, Babaiola Srl, Revoluce Srl, Biogenera Srl, Cubepit Srl, Nano Srl, FindMyLost Srl, Hymy Group Srl, Parterre Srl, Luche Srl. The remaining companies that do not appear in the financial focus are those for which the business plan projections are not available anymore in the ECF platform, thus making impossible the comparison between financial forecasts and actual results. For what concern complete case-studies, Table 4.46 shows the main achieved results, collecting percentages which represent the realization rate with respect to revenue generation. Such rate has been computed as the ratio between realized revenues and the amount of forecasted sales during the year. For instance, the 198% related to TakeOff Srl for the year 2017 is meaning that during 2017 TakeOff sales' value amounted to

+198% of what the company was expecting to achieve in its business plan projections. The expression not available (n.a.) means that business plan projections or financial results were not available for such a year, thus making impossible the calculus of the rate. The cumulative variation rate has been computed by considering the cumulative revenues projections and actual results, and then by computing the ratio between delta in cumulative revenues and cumulative revenues projections. Despite 3 years being a short period of time, the cumulative variation rate aimed at describing on a cumulative view the level by which companies have been able to realize planned objectives in terms of revenue generation. For instance, for what concerns Alea Srl, during the period it positively deviated from declared goals by +1863%, being able to overperform projections. The last column illustrates the average growth rate in revenues related to each company.

| REVENUES realization rate | 2017 | 2018 | 2019 | Cumulative variation rate | Avg growth rate 2017-2019 |
|---|---|---|---|---|---|
| Alea Srl | 3766% | 1979% | 1232% | 1863% | *-9%* |
| TakeOff Srl | 198% | 593% | 572% | 433% | *421%* |
| Yocabè Srl | 452% | 265% | 75% | 30% | *75%* |
| Crowdfundme Spa | 129% | 98% | 59% | -21% | *59%* |
| Family Nation Srl | 107% | 70% | 71% | -24% | *39%* |
| Qaplà Srl | 89% | 80% | 61% | -30% | *86%* |
| Felfil Srl | 778% | 87% | 40% | -33% | *31%* |
| SkyMeeting Spa | 73% | 35% | 20% | -70% | *26%* |
| Orwell Srl | n.a. | 41% | 11% | -71% | *-2%* |
| Yakkyo Srl | n.a. | 49% | 12% | -79% | *62%* |
| FruitAma Srl | n.a. | 23% | 19% | -80% | *421%* |
| Little Sea Srl | 49% | 25% | 14% | -80% | *33%* |
| Green Energy Storage Srl | n.a. | 39% | 8% | -82% | *7%* |
| Raft Srl | 27% | 17% | 16% | -82% | *78%* |
| The Digital Box Spa | 35% | 20% | 10% | -83% | *2%* |
| Graphene XT Srl | n.a. | 21% | 14% | -84% | *33%* |
| Ermes Cyber Security Srl | 385% | 29% | 11% | -85% | *153%* |
| AmbiensVr Srl | 26% | 25% | 8% | -87% | *80%* |
| Infinity Hub Spa | 2% | 7% | 14% | -91% | *302%* |
| Cynny Spa | n.a. | 19% | 1% | -96% | *-35%* |
| Verso Srl | n.a. | 0% | 1% | -99% | *3378%* |
| ***Median*** | ***98%*** | ***35%*** | ***14%*** | ***-80%*** | ***59%*** |
| ***Median adjusted**** | ***89%*** | ***32%*** | ***14%*** | ***-80%*** | ***59%*** |
| *Minimum rate* | *2%* | *0%* | *1%* | *-99%* | *-35%* |
| *Maximum rate* | *3766%* | *1979%* | *1232%* | *1863%* | *3378%* |

**Alea Srl and TakeOff Arl have been excluded from the calculus*

**Table 4.46**: *Summary on revenues results from 2017 to 2019,* own elaboration based on financial reports.

Table 4.46 illustrates revenues results by starting from the most high-performing companies. By looking at it, it appears that on average the highest realization rate has been realized by Alea, which in turns presented very conservative business plan projections. Indeed, most of the companies disclosed very optimistic business plan forecasts, and consequently they have been unable to achieve the results projected. Focusing now on 2019, this last year is assumed to be the one in which companies started to create higher value, as investments have been mainly made the year immediately after the closing of the ECF campaign. In such period, the highest realization rates have been realized by Alea Srl (1232%), as previously, and Take Off Srl (572%), which both realized a percentage of realization higher than 100%; while the lowest results obtained in terms of revenues realization rates in 2019 refer to Verso Srl (1%), Cynny Spa (1%), Green Storage Srl (8%) and AmbiensVR Srl (8%), which realized realization rates lower than 10%. Three out of four "bad performing" companies operate in the IT and digital technologies sector. It is possible to assume that such a sector is starting to experience higher saturation than in the past years, and perhaps start-ups looking for external funds need to be very optimistic in their business plan projections in order to acquire online investors' trust. The median realization rate appears to be equal to 35% in 2018 and decreased in 2019 becoming equal to 14%. Such value has been computed also by excluding the results of Alea Srl and TakeOff Srl, since these two companies highly overperformed with respect to the rest of the sample. The adjusted median realization rate resulted lower for 2018 (32%), while it remained the same for 2019. By looking at the cumulative variation column, 18 out of 21 companies showed negative rates, meaning the inability to positively meet the planned performance. Positive cumulative variation rates have been realized by Alea Srl, TakeOff Srl, and Yocabè Srl. For what concerns the revenues growth rate for the period 2017-2019, 86% of the companies showed on average positive growth in revenues, while 3 out of 21 ventures experienced negative average revenues growth. The figure below aims at providing a brief representation of the revenue generation trend during the years after the ECF campaign of the company taking into consideration the case studies.

As it appears by looking at the Figure 4.6, the high majority of the studied companies showed a positive trend in revenues growth, which started from 2017 (year of closing of the ECF campaign) and lasted until 2019, at least. The most overperforming company in terms of sales has been Alea Srl, whose revenues showed a decrease in 2018 (first year after the closing of the ECF fundraising) but an immediate increase the following year. A negative trend in revenues growth has been experienced by Cynny Spa, whose sales showed a reduction in value starting from 2017. Broadly speaking, 10 out of 21 companies generated revenues for an amount higher than € 1 million in 2019, namely those companies are FruitAma Srl, Family Nation Srl, The Digital Box Spa, Green Energy Storage Srl, Yocabè Srl, Take Off Srl, Alea Srl, Yakkyo Srl, SkyMeeting Spa, Infinity Hub Spa. The highest average growth rate in revenues has been experienced by Take Off Srl (+421%) and FruitAma Srl (+421% as well). On the other hand, companies which accounted for negative growth in revenues in the period 2018-2019 are The Digital Box Spa (-3%), Orwell Srl (-39%), AmbiensVR Srl (-6%), Cynny Spa (-44%). Verso

Srl showed an impressively high revenue growth rate, which though is manipulated by the very low sales value registered in 2018 (equal to € 299).

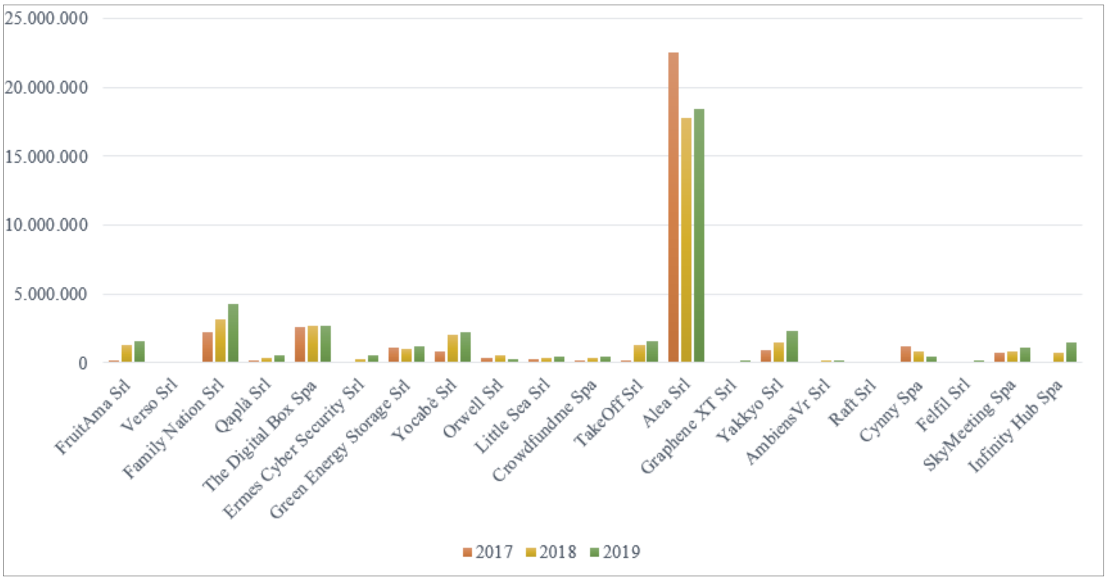


**Figure 4.6:** *Revenues trend for case-study companies in the period 2017-2019,* own elaboration based on financial reports.

Table 4.47 summarizes revenues results from a qualitative perspective. The table has been structured by starting from the highest performers as it happened in Table 4.46, afterwards for each company it has been illustrated the reference market as well as the main characteristics of the business model. By looking at the table, it appears that the most performing companies are operating in IT and Digital Technologies, Financial and e-commerce reference markets. In the case of innovative start-ups, it is more appropriate to take into consideration the reference market rather than the industry (or market sector) since they often operate in a transversal way in more than one traditional market. Indeed, one of the very challenges faced by innovative start-ups is the creation of profit opportunities and acquisition of market shares in market sectors which are already mature, and which already cover almost the totality of the customer base. In this way, such companies try to offer innovative business models in a traditional panorama, to bundle different markets, or perhaps they try to base their values on highly technological marketing and communication activities. Hence, for instance, Alea Srl operates in the safety-for-workers devices market by applying its innovative software, while Family Nation Srl offers sustainable and quality online products and moreover it created an active brand community of users by keeping its social media pages constantly updated and by rapidly communicating with clients' requests. By looking at the results in the table, IT and Digital Technologies reference market is the one most exploited, thus generating a sort of saturation. Indeed, companies operating in such a reference market may have provided optimistic business plans in order to get investors' trust, but they ended up generating medium-low results. The first and second percentile include the 10 most performing companies of the sample; 4 of them operate in the IT and digital technologies reference market while 4 of the remaining work in the e-commerce reference market. The main successful factor shared by those companies stands in the innovative thinking of a more traditional market segment. Indeed, they did not try to create completely new products, but they rather aimed at improving existing services. They did so by both making the product/service more available to mass customers (see Alea Srl, Yocabè Srl, Crowdfundme Spa, Qaplà Srl, Felfil Srl, Orwell Srl, Yakkyo Srl) or perhaps by creating a sort of users community in where customers could not only purchase goods but also create a connections with other users, feeling active part of a correlated system (as in the case of Family Nation Srl and SkyMeeting Spa). On the other hand, the last percentile of the sample includes the worst performers in terms of revenue generation compared with business plan projections. Companies in this last percentile operate mainly in the energy and new technologies reference market. They described very ambitious goals in their business plan. Indeed, most of those companies aimed at producing a new product able to totally innovate the existing market (see Verso Srl, Cynny Spa, Graphene XT Srl). In this scenario, they may take longer in order to generate observable profits since they need higher R&D investments and managerial expertise, or perhaps their objectives are still overoptimistic.

| | **Reference market** | **Business model** |
|---|---|---|
| Alea Srl | IT and digital Technologies | Implementation of the Push to Talk technology in order to facilitate the adoption of transceivers for workers. The business model relies on the pioneering role of the company in such a reference market, which bundles new digital technologies in a more traditional industry. |
| TakeOff Srl | Financial | Start-ups incubator on a national level, added with the offer of offices and physical locations for those companies in need. Its competitive advantage relies on a selected team of analysts who pick up the most valuable investments and diversify clients' portfolios. |
| Yocabè Srl | E-commerce | E-commerce platform working as intermediary and providing medium-high quality fashion brands. The business model relies on the distribution on an international level of medium-quality products (at the heart of mass-fashion) at competitive prices. |
| Crowdfundme Spa | Financial | The company works as an intermediary platform for CF campaigns. Its business model deals with the connection between entrepreneurs and investors, aiming at expanding on an international level before its main Italian competitors. |
| Family Nation Srl | E-commerce | E-commerce platform that provides for children and mother-to-be clothes and accessories. The business model relies on the offering of quality international brands which above all offer sustainable characteristics. The company started to create an active community of users, in which to share experiences and opinions. |
| Qaplà Srl | Logistic / e-commerce support | Support for delivery services. Its competitive advantage relies on the constant communications with clients, which in turn can know the location of their ordered product in each moment. This also helps to relax delivery companies' duties since they no longer need to spend resources in dealing with clients' complaints. |
| Felfil Srl | IT and digital Technologies | The company relies on the high expansion expected for the 3D printing sector during the following years. Its innovative business model deals with the offering of cheap and easy to use 3D printings, affordable for each kind of user, both companies and privates. |
| SkyMeeting Spa | IT and digital Technologies | The main innovation offered by the company stands in the online platform which enables companies, accountant firms and banks to completely share data. This leads to much easier, faster and transparent communications. |

| | | |
|---|---|---|
| Orwell Srl | IT and digital Technologies and Real Estate | The company offers Virtual Reality and Mixed Reality devices. It started from the market of videogames and tried to expand towards architecture and designers' clients thanks to its technological innovations. |
| Yakkyo Srl | E-commerce | Yakkyo deals with SMEs which want to acquire products directly from China. It works as an intermediary platform and takes care of common issues related to import from China, such as language barriers, minimum order volumes, shipping and customs clearance procedure. |
| FruitAma Srl | Food & beverage | The company offers jams and marmalades. The main innovation stands in the size of the packaging, which is specifically thought in a sustainable view. Indeed, the product can be purchased in different sizes, ranging from the family size to the single-person one. |
| Little Sea Srl | IT Technologies and Digital Marketing | It operates in the data telling and advanced visualization market sector, through the product branded after the name Babelee. The main innovation stands in the software's capacity to generate videos and multimedia products starting from unstructured data. |
| Green Energy Storage Srl | Energy and new Technologies | The company operates in the green and renewable energy market sector. Its business model relies on the production of a tool which leads to the storage of energy. In order to achieve such a goal, the company has several patented technologies and has started partnerships with, for instance, Harvard University. |
| Raft Srl | Sport and digital Technologies | The main innovation offered by the company stands in the creation of a sort of online club for amateur tennis players. Indeed, through the platform provided, players all over Italy can meet, share experiences and organize matches and tournaments. The main goal is replicating professional clubs' dynamics. |
| The Digital Box Spa | Food and digital Technologies | The company's innovative product stands in ADA, an online platform which helps in creating contents for Digital Marketing and Mobile Engagement. The business model relies on platform abilities to create contents, distribute contents to the public in a multi-channel perspective (SMS, emails, Facebook Ads) and collect data and analyze statistics. |
| Graphene XT Srl | Energy and new Technologies | The company deals with the development of nanotechnologies oriented to the utilization of graphene, which is seen as the material of the future. Indeed, the business model relies on R&D activities in order to create an optimal utilization of graphene as the new main material for both energy transmission, smartphone and batteries production, and consumer goods. |
| Ermes Cyber Security Srl | IT and digital Technologies | The company's innovative business model relies on Web Tracking software. This software protects data from computers, both in case of individuals and in case of companies. |
| AmbiensVR Srl | IT and digital Technologies and Real Estate | The company deals with VR and AR software through its online platform. It applies them on real estate services, as well as designers and architects in order to help them in carrying out their duties. The main innovation of the business model stands in the application of VR and AR in market sectors which normally have been excluded from it. |
| Infinity Hub Spa | Energy and financial | It operates as managerial, financial and commercial accelerator of Cleantech companies, situated in the North-East of Italy. Its business model deals with companies which offer green and renewable sources of energy and help them in developing and creating a customer base. |
| Cynny Spa | IT and digital Technologies | Thanks to its 6 patents, the company offers two main digital products. Such products help in the creation of tailored marketing contents starting from emotional reactions of users and in data collection through an online cloud much cheaper than the one offered by competitors (Microsoft, Amazon, Google). |
| Verso Srl | IT and digital Technologies | The innovative product offered by the company is the wearable ring which offers digital services. Indeed, the product leads to easy interactions with smartphones, computers and other technological devices for what concerns music, video games, sport, VR, design and art. |

**Table 4.47***: Summary on sample companies' reference market and business model,* own elaboration based on financial reports.

For what concerns EBITDA generation, Table 4.48 summarizes the main observed results. The analysis is more significant if made on the variation rate rather than on the realization rate. This would lead to the avoidance of misleading results interpretation, as a negative realization rate may possibly refer to a positive result achieved. In this case, the variation rate has been computed in absolute terms, thus considering the possible distortion of negative results and allowing for a consistent interpretation of the data collected. The following table illustrates the variation rates computed for the 21 companies forming the sample. The percentages indicate the deviation of actual results from projections for the relative year of analysis, and it is calculated as the delta between actual results and projections' values divided by the projections' value (in absolute terms). Hence, for instance, Yocabè Srl actually realized EBITDA in 2017 deviated by -408% from business plan projected value. The last column describes cumulative variation rate over the period 2017-2019. The table below provides a clear representation of companies' ability to meet projected results, but it does not provide a summary picture on effectively recorded performance. For a more comprehensive understanding of the overall situation, it is necessary to see Figure 4.11.

| EBITDA variation rate | 2017 | 2018 | 2019 | Cumulative variation rate |
|---|---|---|---|---|
| Alea Srl | 1618% | 299% | 206% | 430% |
| TakeOff Srl | 25% | 359% | 395% | 336% |
| Felfil Srl | 1049% | 144% | 126% | 140% |
| Yocabè Srl | -408% | 65% | 84% | -67% |
| Green Energy Storage Srl | n.a. | 81% | -82% | -68% |
| Yakkyo Srl | n.a. | -3% | -87% | -70% |
| Family Nation Srl | n.a. | -81% | -79% | -75% |
| SkyMeeting Spa | -30% | -71% | -86% | -77% |
| Qaplà Srl | 79% | 266% | -95% | -92% |
| Raft Srl | -108% | -93% | -92% | -94% |
| Little Sea Srl | -95% | -94% | -96% | -95% |
| The Digital Box Spa | -6% | -94% | -100% | -96% |
| Ermes Cyber Security Srl | 112% | -99% | -99% | -97% |
| AmbiensVr Srl | 62% | 142% | -98% | -98% |
| Infinity Hub Spa | -99% | -98% | -99% | -98% |
| Orwell Srl | n.a. | -100% | -100% | -99% |
| Verso Srl | -74% | -109% | -100% | -102% |
| Cynny Spa | n.a. | -665% | -101% | -108% |
| Graphene XT Srl | n.a. | -123% | -109% | -113% |
| FruitAma Srl | n.a. | -215% | -374% | -322% |
| Crowdfundme Spa | -41% | -1742% | -528% | -651% |
| ***Median*** | ***-18%*** | ***-93%*** | ***-96%*** | ***-95%*** |
| ***Median adjusted**** | ***-35%*** | ***-94%*** | ***-98%*** | ***-96%*** |
| *Minimum rate* | *-408%* | *-1742%* | *-528%* | *-651%* |
| *Maximum rate* | *1618%* | *359%* | *395%* | *430%* |

**Alea Srl and TakeOff Arl have been excluded from the calculus*

**Table 4.48**: *Summary on EBITDA results from 2017 to 2019,* own elaboration based on financial reports.

On average, the companies which positively deviated from their business plan projections in both 2017, 2018 and 2019 appear to be Alea Srl (cumulative variation rate for the period 2017-2019 equal to 430%), Take Off Srl (336%) and Felfil Srl (140%). However, even though they performed better than expected, both Take Off Srl and Felfil Srl were among the worst performer companies in terms of EBITDA values. Indeed, the first one recorded the lowest EBITDA of the sample in 2019, immediately followed by Felfil Srl. On the other hand, SkyMeeting Spa and Green Energy Storage Srl negatively deviated from their business plan projections, generating lower EBITDA value than what expected. Nonetheless, both the companies were among the best performing companies, and accounted for positive value of

EBITDA during 2019. It is interesting to notice that more than 50% of the companies forming the sample (13 out of 21) negatively deviated from their projected EBITDA value during the first year after the ECF campaign closing. In this way, it is possible to assume that business plan projections have commonly been computed in a too optimistic scenario. Moreover, this number increased during 2019, year in which 81% of companies considered (17 out of 21) have not been able to meet the forecasted results. This is probably due to an underestimation of costs or to a wrongly allocation of them into their forecasts. Besides, such results may be due to overestimation of software values as well as overoptimistic expectations on both R&D and marketing achievements. On average, all the companies have presented over optimistic business plans, resulting in actual results which were on average 43% lower than projections.

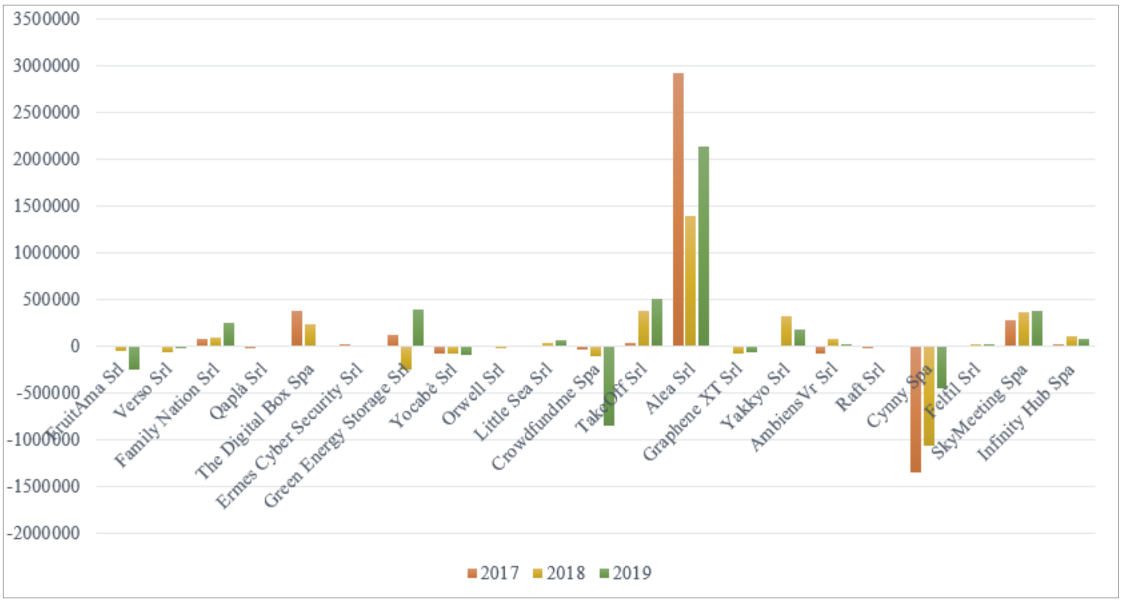


**Figure 4.7:** *EBITDA trend for case-study companies in the period 2017-2019,* own elaboration based on financial reports.

## CONCLUSIONS

The thesis focused on crowdfunding procedures, which are becoming more and more adopted internationally. As Ahlers *et al.* (2015) defined it, «*crowdfunding is an umbrella term used to describe an increasingly widespread form of fundraising where groups of people pool money, typically very small contributions, to support a particular goal*». Such innovative tool relies on the expansion of the Internet, which allowed the connection between people geographically unrelated. Indeed, CF leads to overcome geographic barriers which have always played a crucial role in financial activities. Furthermore, this tool has been broadly implemented, and recently started to deal with several functions. Currently, the variety of crowdfunding models is broad, and ranges from equity, lending, and reward-based methods to outright donations. Among all these alternatives, equity crowdfunding may be one of the most promising tools to improve small businesses growth, as it connects small investors with start-ups' entrepreneurs. Through an ECF campaign, a crowd of online investors provide for funds in exchange for a percentage of company equity shares. On the one hand, ECF allows non-professional investors to become shareholders of start-ups and innovative SMEs; on the other hand, it supports such companies in facing the funding gap experienced starting from the financial crisis in 2008. In this way, early-stage ventures are enabled to collect external funds by avoiding credit institutions and banks, which in turns normally do not grant high funds to companies that do not have historical performance reports or that base their economic projections exclusively on assumptions. However, the participation of non-professional investors is subject to higher risks, due to information asymmetries and the lack of financial competences, knowledge and expertise necessary to perform due diligence and evaluate investment opportunities (Agrawal *et al.,* 2011; Belleflamme *et al.*, 2014; Mollick, 2013). In conclusion, ECF is considered as a form of alternative finance while resembling traditional financial tools like BAs and VCs. Such tool benefits from a greater investors base, a much shorter fundraising process, and standardized and simpler contracts.

Despite its huge expansion, ECF still lacks a proper regulatory framework, and rules are subject to national legislation, which in turns is still not coordinated among countries. Indeed, EU members' platforms apply different rules both in terms of disclosure and quality of projects presented to investors. Since there is absence of specific rules, each start-up can potentially select the kind of information to share during the ECF campaign (Klöhn, 2018). Nonetheless, business plan projections are reasonably one of the most important sections to disclose by entrepreneurs in order to show the quality of the project. Moreover, it is a key document on which to perform accurate due diligence by investors. Indeed, as the last chapter of the thesis described, companies raising funds through ECF tend to be overoptimistic on the achievement of their financial goals. This may be due to underestimation of operating and administrative costs related to the first periods of activity, as well as overvaluation of the product/service potential to satisfy customers' needs through the innovative technology or idea behind it. Moreover, financial projections may inflate positive results aiming at signaling the quality of the project. Indeed, crowd-investors do not evaluate ventures in a totally rational logic, but they rather rely on quality signals by looking at cumulative collected capital and following a sort of "herding behavior" (Freedman and Jin, 2011). This in turn leads to investments decisions which afterwards do not generate expected returns.

The trend just described is illustrated by the sample studied in this dissertation. Indeed, it resulted that out of the 52 ECF campaigns successfully closed during 2017, 11 were related to companies that do not exist anymore, and that are considered defaulted for the study carried out. The remaining ventures have been studied in order to understand whether there were any discrepancies between financial projections disclosed and actual results gained. As it appears in the last section of the final chapter, most companies have not been able to meet planned results, showing a median revenues cumulative variation rate equal to -80%, and median EBITDA cumulative variation rate equal to -95% (see Table 4.46 and Table 4.48). Summarizing tables have been structured according to performance results, starting from the most performing ventures. Within the sample there are high performance differences between good and bad performers. Indeed, companies belonging to the first percentile in Table 4.46 (which are Alea Srl, Take Off Srl, Yocabè Srl, Crowdfundme Spa, Family Nation Srl) showed a median cumulative variation rate of revenues equal to 30%; while the last percentile, including Graphene XT Srl, Ermes Cyber Security Srl, AmbiensVR Srl, Infinity Hub Spa, Cynny Spa, Verso Srl, showed a negative median cumulative variation rate equal to -89%. It is interesting to consider whether the amount collected during the ECF campaign may play a role in such results. Indeed, by looking at Table 4.2, it appears that companies belonging to the first percentile collected an average amount equal to € 341.237, while ventures in the last one collected average resources for € 268.740. By looking at the overall sample, companies in the second percentile collected an average amount equal to € 174.171 while those belonging to the third € 420.221 (this amount is highly influenced by the funds collected by Green Energy Storage Srl, which has been able to obtain € 1 million during its campaign). Hence, it is reasonable to assume that the level of capital raised does not directly influence performances and perhaps this scenario may be a consequence of the low due diligence executed at priori by investors. Indeed, online investors may have backed projects that were not worthy of such an amount of resources. Besides, it appears that those companies which computed their business plan projections in a more conservative way ended up showing better results both in terms of revenues and EBITDA. On the contrary, most studied companies disclosed very optimistic forecasts, both in terms of economic results and market expansions. This optimistic approach mostly aims at communicating the quality of the project during the ECF campaign, thus increasing investors' trust, and making them providing capitals for the campaign. Such strategy relies on the idea that non-professional investors behave by following others' decisions, relying on accumulated capital for quality signaling as it has been described in the literature (Agrawal *et al.,* 2014, Belleflamme and Lambert, 2014, Freedman and Jin, 2011). For what concerns average revenues growth rates referring to the period 2017-2019, most of the companies forming the sample have experienced positive growth showing median revenues growth rate equal to +59% (see Table 4.46). Such a positive trend in revenue generation means that ventures have been able to carry out their operating activities and to deal with their reference market by exploiting funds collected. Highest growth rates have been experienced by Take Off Srl, FruitAma Srl and Green Energy Storage Srl (Verso Srl experienced a very high average growth rate, but such a positive result is not completely significative due to the very low amount of revenues accounted in 2018). The three most growing companies belong to different percentiles. While Take Off and FruitAma belong to the first and second ones, Green Energy Storage appeared as a medium-low performer in terms of revenues. This may be due to the shortness of the time period available until now. Indeed, such a company aims at developing a totally new product, which may take higher investments and longer time to generate observable positive results.

Broadly speaking, the reasons behind poor performances overall obtained in the sample are several. Among the main commons, we can consider the absence of a specific and clear strategy followed by start-ups to create a sustainable competitive advantage as well as a strong customer base in the period immediately after the ECF campaign. Moreover, the lack of entrepreneurs' expertise may have effects on their ability to carry out operating activities efficiently and effectively. As the case-studies underlined, most of the companies overvalued their intangibles, and they projected sales on a wrong market and customer analysis. Indeed, start-ups normally operate in transversal markets, including characteristics of more than one. This is intrinsic to their innovative strategy. As it appears by studying the business models, most of the companies do not offer a totally new product, but they rather improve the existing ones through new technologies or they increase the reference market by making it affordable or utilized by a higher customer base (see Table 4.47). Wilson and Testoni (2014) identified causes for failure also in the lack of accurate pre-investment due diligence as well as post-investments monitoring from investors. However, for what concerns economic achievements, the thesis showed the performance results collected solely in the 2 years immediately following the ECF campaign, therefore financial reports available refer to a time period reasonably too short. Indeed, the creation of a strong customer base, brand identity, sustainable competitive advantage as well as the conclusion of assets investments may take longer to generate observable profits. Hence, further studies should be conducted in this direction by future researchers, especially if considering the huge expansion that ECF is experiencing in the Italian market. Indeed, in a few years it will be possible to collect more consistent amounts of data, thus making results more significant. Moreover, it would be interesting to perform further studies on exit options which become available to investors in the long period after their investments in start-up ventures (normally 10 years after ECF campaign) and whether they generate return for ECF funders.

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