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INTRODUCTION

The current work aims at presenting and analysing the phenomenon of crowdfunding as a potential way of funding for scientific and university research. Crowdfunding, meaning the financing obtained in small donations by an incredibly high amount of people, is a method thanks to which any person is allowed to contribute to projects of their interest through the web. Since its birth, which can be dated back to the 19th century, crowdfunding has been slowly substituting, even if in part, the inefficient allocation of funds of the recent economy.

Due to the economic crisis of 2008, many businesses across all countries have undergone severe cuts. The recession and drastic downfalls in the GDP of many countries led to decreased consuming and high rates of unemployment. Rescue plans have been executed; however, the major cuts have been done in businesses such as culture, education and R&D.

The crisis has of course also affected the manufacturing, financial and entrepreneurial sector, reducing the amount of private contribution to research from them. This lack of funding however was not a reason to give up university and scientific research for many countries, including Italy, where the scientific contribution to the world's knowledge places it among the first 15 countries of the world according also to the SCImagor ranking.

So how do scientists get their funding? Over the past years, scientists have been turning to crowdfunding to get the funding needed to create their projects.

In order to go deeper into this phenomenon we have been interviewing Porfessor Aresu, from the Department of Veterinary Medicine of the University of Padova as he, like many other scientists, discovered crowdfunding and wanted to create its own crowdfunding project. As we expected, his increasing interest in crowdfunding was given by the fact that obtaining public or even private funds for research here in Italy is almost impossible and because, thanks to it, more people will be made aware of his research.

The aim of this work is hence to create a marketing and operational plan for a research project from the University of Padova and to organize a crowdfunding campaign tailored for success.

In Chapter I, we will give some basic definitions of crowdfunding and its models, we will have a closer look at its history and at the stages of a crowdfunding project in order to then explore further the topic of crowdfunding for scientific research and the main existing platforms dedicated to the topic.

In Chapter II we will explore the main regulations of crowdfunding across the world and we will make a comparative analysis between the various countries. Being a relatively new topic, crowdfunding regulation is also under constant development and we will have a closer look to the development of the regulation of equity crowdfunding.

In Chapter III, we will highlight the main characteristics and figures of the Italian crowdfunding market in order to then focus on the main Italian crowdfunding platforms dedicated exclusively to science and research, analysing their main successful projects and the reasons why they have been great campaigns.

In Chapter IV, we will discuss the strategy behind successful crowdfunding campaigns and we will go through the essential steps for a correct campaign planning.

In the last chapter, we will go to deep into the hearth of the thesis by providing a detailed marketing and operational plan for the creation of a successful campaign, "Let's Bite the Dog Lymphoma".

Some concluding remarks close the thesis.

CHAPTER I

CROWDFUNDING: AN INTRODUCTION

Small and medium enterprises, researchers and private entrepreneurs are finding it more and more difficult to find financing for their projects and activities as traditional forms of financing are growing weaker, especially in the field of scientific research.

Given this situation, crowdfunding could be a solution to this lack of funds and it represents a new way of participating to scientific research through digital media.

1.1 Defining Crowdfunding

Crowdfunding is the activity of raising funds for a project or venture by collecting monetary contributions from a large number of individuals, typically through the internet.

The term crowdfunding was first created by Micheal Sullivan in 2006 when he wanted to launch "Fundavlog" a website to promote evens and initiatives in the video blog sector by receiving funds from the internet (Castrataro 2011).

«Crowdfunding can be defined as a collective effort of many individuals who network and pool their resources to support efforts initiated by other people or organizations. This is usually done via or with the help of the Internet. Individual projects and businesses are financed with small contributions from a large number of individuals, allowing innovators, entrepreneurs and business owners to utilise their social networks to raise capital» (De Buysere et al. 2012).

From this definition, we can easily define the main actors involved in the process:

- The crowd;
- The funding;
- The Internet.

The crowd is a group of people who combines their effort, energy, resources and contributions to help the campaign creators in fulfilling their projects.

The concept of crowdfunding comes from the broader concept of *crowdsourcing,* which allows companies and individual to obtain contribution from a very large audience, the crowd. This concept was formulated by Howe (2006) where he defined crowdsourcing as *"the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call"* in the high-tech magazine *Wired*.

This very innovative instrument, although new and still not well known, is already producing a huge amount of successful projects and it is used in different fields, spacing from art to journalism, start-ups and scientific research.

More specifically, the aim of crowdfunding is to collect money in order to finance activities and special projects created by companies or individuals through the Internet (mainly social media and blogs). The funding is the most important element in crowdfunding because supporters decide to make voluntary monetary contributions with or without the expectation of getting something as a reward and it is this type of remuneration that determines the business model of crowdfunding platforms.

An important aspect highlighted by Belleflamme (2011) is that *"the basic idea of crowdfunding is to raise external finance from a large audience (the "crowd"), where each individual provides a very small amount, instead of soliciting a small group of sophisticated investors"* were sophisticated indicates the traditional means through which funds are generally collected such as banks, business angels and venture capitalists. It is the uncommon way of funding that makes crowdfunding a unique and special phenomenon to study. The absence of intermediaries allows people to interact and communicate with little obstacles and problems thanks to the existence of specific platforms that function as mediators between the project funder and the potential investors.

Another interesting definition of crowdfunding is given by Rossi (2014) which describes it as the practice of funding by raising many small quantities of money from a huge number of people.

The principle at the core of crowdfunding is the well-known concept of the "long tail" as discussed by Anderson (2004). According to this concept, there exist a population of high frequency that is less profitable than a population at lower

frequency (Michelucci & Rota 2014). This means that crowdfunding involves a high number of individuals that contribute for small amounts of money, in contrast with the usual sources of financing before mentioned.
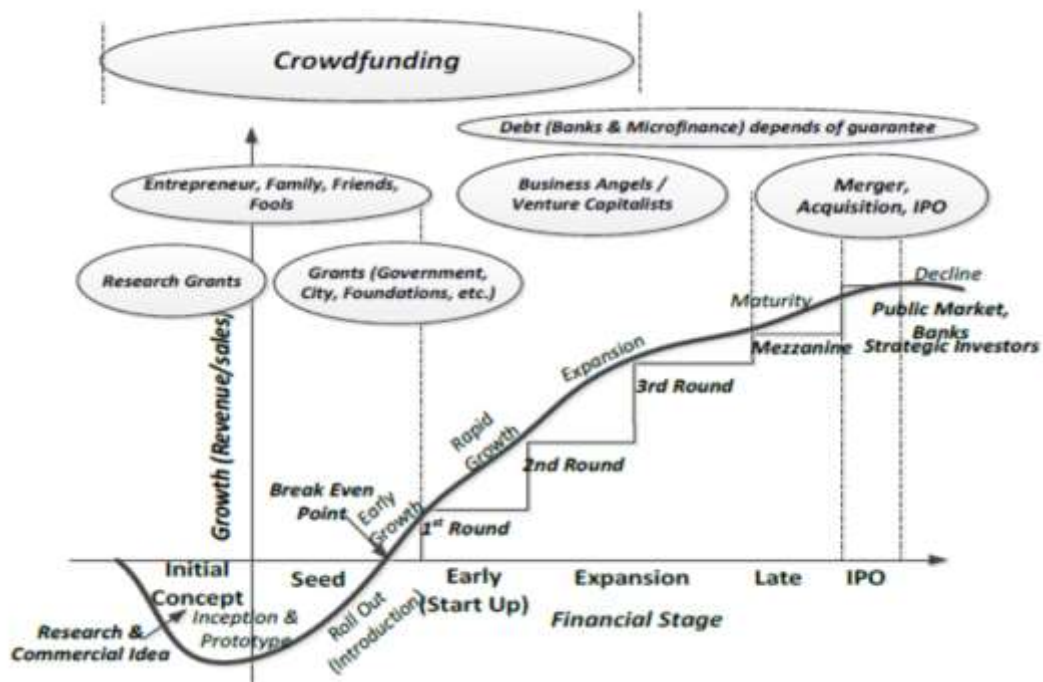
Crowdfunding platforms are used mainly as a tool in order to get the financing from the crowd and in Italy only, there are 54 active crowdfunding platforms.

1.2 Crowdfunding history

Crowdfunding origins can be dated back to XIX century, when the Irish writer Jonathan Swift inspired the "Irish Loan Fund", some sort of micro financing institutes that wanted to defeat poverty among the population. Another form of crowdfunding dates back to 1884 when Joseph Pulitzer, owner of the magazine "The World", started a project to finance the base and the installation of the Statue of Liberty because the committee that was in charge could not raise the desired amount. Other famous cases include the initiative by Barack Obama to pay part of his

presidential electoral campaign with money given by electors and the campaign "Tous Mecenes"of the Louvre with the aim to get € 1mln through donations from web communities in order to purchase from a private collector the Renaissance Masterpiece "Le tre grazie" by Cranach. Another recent case includes that of the reconstruction of "La Città della Scienza", a scientific polo in Naples, an example of civic crowdfunding.

The most famous project of crowdfunding is that of the band Marillon that in 1997 collected about 60.000 dollars from their fans to sponsor their tour in the United States. This project has been an inspiration for the funders of the platform Artistshare, created in 2003 to fund artistic and music projects thanks to fan funding. After this, many social media platforms were created, such as Facebook, Twitter and YouTube and they turned out to be fundamental for the proper functioning of crowdfunding.

Two of the main crowdfunding platforms were created in 2008 and 2009, Indiegogo and Kickstarter respectively. IndieGoGo funders, Danae Ringelmann and Slava Rubin created the company with the aim to give people the power of funding and to give power to creative entrepreneurs. These platforms have used social neworks in order to grow and become a symbol of funding from the crowd.

The very first platforms were reward-based, meaning that contributors of financing would only get a small reward in exchange for the contrbutions. It was only in 2010 that the first equity-based platforms were introduced, where contributors could receive money from the project. GrowVC and CrowdCube were the first in 2010 and 2011, aiming at developing and sustaining start-ups thanks to financing. The development of equity based crowdfunding platforms has slowed down mainly for the lack of regulation, being the money given to these projects actual purchases of financial shares. There exist also other types of crowdfunding platforms that we will cover in the next section.

1.3 Crowdfunding platforms models

Crowdfunding platforms are the facilitators and the intermediaries thanks to which project creators and crowd funders can interact. They are based on websites and they

differ among each other depending on the type of project that they are hosting: some host design related projects; some refer to technology whereas other platforms may host all kinds of projects.

An individual or organization in need for funds for the development and creation of a project can propose it to a crowdfunding platform, if accepted, it will be published on the platform, and the fundraising campaign will start. There is sometimes a fee charged for the transactions that occur on the platforms as they act as mediators between project owners and contributors.

Commission fees and transaction costs represent a percentage of the total amount that will be taken from each contribution and they make about 3% to 10% of the total amount of the fundraising. Projects however are not selected for their potential profit but on their originality and feasibility (Niznik-Klocek 2012), quality, nature, project leader and location.

For what regards the compensation for the contributors, there exist four main types of platforms, divided according to their "business model":

- Donation based;
- Reward based;
- Lending based or Peer-to-Peer Lending;
- Equity based;
- Hybrid models.

1.3.1 Donation-based

The contributor simply gives a sum of money not expecting anything in return, and this result in a sort of micro patronage. NGOs have been using this model for over ten years especially because the donors tend to become more loyal in the long term when they are updated about the developments and success of the projects (De Buysere et al. 2012). These platforms are specialized in charity projects and some of the most notable in the Italian landscape are Iodono, BuonaCausa and Rete del Dono.

1.3.2 Reward-based

A funder gives a sum of money in exchange of a reward or a prize, that can be material or immaterial and of symbolic value. The project funder, when launching the project, decides the amount that he aims to raise and determines different rewards for the investors. In this case, contributors are not only the funders of a project but they are also the potential customers of it: people can transfer some of the money needed to finalize the production of the product and they can also be compensated with it as a reward for the amount transferred. Currently, about 2/3 of worldwide crowdfunding platforms have adopted this business model. Some well-known reward-based platforms in Italy are Kapipal, Eppela and Starteed, the most popular in US are IndieGoGo and Kickstarter.

1.3.3 Lending based or Peer-to-Peer lending

Project owners borrow sums of money from crowdfunders or "lenders" who believe in their ideas and they will be paid pack with or without interest. It consists in a different access to credit via the internet and it simplifies and fastens the process, reducing costs and increasing transparency. These type of platforms are a sort of meeting point for those in need of money and those requiring it, making loans for a total amount of € 4 billion. In Italy these type of platforms are mainly two, Smartika and Prestiamoci but the most famous is Zopa, a British company founded in London that has made available for borrowing about € 200 million.

1.3.4 Equity-based

Equity-based platforms allow crowdfunders to obtain a "crowd-equity" (a company stake) and hence to enter in the capital of a company. Those who define the project define a time span and a target amount divided into thousand identical parts offered through the platform as shares. Offers go on until the target is reached, moment when the real investment phase starts. The shares that have been purchased through the

platform can go up or down in value and they can be considered as a real investment. Start-ups and SMEs can raise funds thanks to these platforms and in return, the funders will become shareholders of the company, even if in small portion. These platforms mainly comprise projects in the biotechnology and health industry. One major platform in Italy of this kind is SiamoSoci.

1.3.5 Hybrid models

There exists also models who are a combination of the ones we previously examined for example they could be either donation-reward or lending-equity. For the entrepreneurs there are huge positive factors coming from the choice of one of these hybrid platforms as they can have the benefits of the multiple forms all in one portal.

1.4 How Crowdfunding works

Crowdfunding owns its success mainly thanks to the fact that people invest in projects that are very close to ones' values, emotions, geography or personality. Other people can show interest in a project mainly for their will to contribute with their knowledge and their involvement is very similar to that of business angels and venture capital funds.

Funders may want to participate in crowdfunding platforms for three main reasons: social, material and financial return (De Buysere et al. 2012).

Social return is received when funders see that a project can actually become reality and it is normally present with donation-based crowdfunding.

With material return on the other hand, the funders get a reward for their effort and investment. Financial return is received when the funder invests in loan and equity-based crowdfunding: the risk is diversified and the reward is collected through interest or dividend payment.

Project owners are motivated to engage in crowdfunding campaigns because, besides raising money, they can be helpful and work as market tests to gain feedback and unique insights about the product before it is released into the market. Information

about price, potential demand and interaction with customers is gauged from the campaigns but most importantly, project owners can create the first contact with the market and lay the first brick for the construction of a brand reputation and the creation of an emotional bond with the consumer.

The intermediary between project owners and funders is the online platform, where applications from project owners are received and pre-selected before acceptation. Once the idea is accepted, the owner has to set a funding goal that has to be reached over a specific period and he has to create a "pitch" where the idea is presented to potential funders. During the campaign, the funders have to keep the crowd updated with the targets achieved and when the campaign is over, they have to provide the public with information on the final development.

To have a better understanding of how crowdfunding works, Cordova reinterpreted the data of a model provided by Gerber, Hui and Kuo (2013) which perfectly describes the five steps that characterise the launch of a crowdfunding campaign:

1. Campaign Preparation: the campaign material is prepared by project owners, namely the title, a video, a description of how the funds will be used, a description of the team members, the funding goal, the campaign duration and the rewards that will be given to backers. The creators select this information and wait for the approval from the platform's board. Once the project is approved, the campaign's webpage is created and backers can start donating money;

2. Project testing: in this phase, creators try to engage their audience and try to get feedback on the materials of the campaign;

3. Project advertising: The project is advertised in order to reach out potential funders and supporters via the main social media, blogs, email, offline communication technologies and in-person requests;

4. Project completion: once the target is reached and the campaign is completed, products or services are finally developed and project creators start delivering rewards to backers (rewards may differ according to the amount donated);

5. New campaigns and mentoring: this last step sees creators contributing to the crowdfunding community by backing other projects as well or by giving advice on how to make successful projects.

Figure 2 Stages of a crowdfunding campaign.

Campaign preparation	•Setting of funding goal/duration/rewards •Project profiling •Project posted on crowdfunding platform
Project testing	•Feedback solicitation •Interactive engagement with audience
Project advertising	•Reaching for potential supporters via platform, social media, off-line channels •Collection of funds
Project completion	•Realization of the proposed goods/services •Rewarding of the supporters
New campaigns & mentoring	•Launching new crowdfunding campaigns •Mentoring and counseling for new crowdfunding initiatives

Source: Author's elaboration of data from Cordova, Dolci, Gianfrate (2013)

The description of phase one, considered the "design" phase, shows the importance of an effective and focused use of the channels of communication provided by the host platform. Video, blogs, brief descriptions of the project, but also the constant updates on the developments of a campaign and of the pre-set targets are the most important means through which the quality of the projects and the level of knowledge of the creators can be shown to the crowd (Schwienbacher & Larralde 2010). Phases two and three are those were crowdfunding really happens: these steps are crucial in order to get the attention of funders and to perform an effective

marketing campaign, also helped by the peer effect and the word of mouth. For what regards the fourth phase, it is not always immediate for backers to get their rewards straight after the end of a campaign, unless the project is about the pre-launch of a product. About this topic, Mollick (2013) provides data explaining that is not always possible to provide rewards or outcomes in a timely manner and this happens particularly when a project is overfunded and its creators do not predict the success.

1.5 Crowdfunding for Scientific research

Crowdfunding however, is not only used as a mean to get contributions for projects related to food, music, technology or design; in the most recent years, crowdfunding has become a major method of financing for scientific research.

As funding for research from the Government grows tight, scientist often turn to private investors by creating crowdfunding campaigns and by promoting them on the web.

This is the case of two researchers from University of California Santa Cruz, Rachel Wheat and Yiwei Yang, who turned to crowdfunding in order to get funding that would have been almost impossible to get by the National Science Foundation. Even though it is a platform mainly focused on creative campaigns, these two researchers set up their project on Kickstarter, one of the most popular crowdfunding platforms.

The main problem with scientific crowdfunding project, as Averett (2013) pointed out, mainly resides in the lack of creativity and appeal of science to the crowd, which can be more attracted to projects related to music or things for an everyday use. This obstacle however, is easily overcame by ecologists and evolutionary biologists who are "at the forefront of science crowdfunding" (Averett 2013).

Another platform, completely dedicated to scientific research, is Microryza, and thanks to it, a chemist named Dan Jaffe raised $18000 in a week to study and perform an air-quality research project. It is however very hard to get the attention of the public on scientific matters but sometimes, the help of the media, like radio stations or even word-of-mouth can be significant and have a huge impact on the crowd. Wheat and Wang do not hide the fact that it took them a lot to sponsor their projects and it took them a lot of energy and engagement. Not only they used

Facebook and Twitter, they even made phone calls, gave public lectures and frequently updated their websites and their blogs (Averett 2013).

Another important platform for scientific campaigns is Experiment.com, a platform completely dedicated to science that has less visibility with respect to Kickstarter or Indiegogo but can still target a relatively large crowd.

The research of Jonathan and Alexandra Bujak about the Arctic Azolla, a unique but very important plant, was put on Experiment but only with a constant dedication and sponsorship of the two researchers in Facebook, Twitter and email the campaign has been able to reach its goal and be successful. Nevertheless, the most crucial contribution was made by the website Reddit, an online news hub and discussion forum with a huge visitor traffic (Li & Prier 2014). Within 40 days, Alexandra and Jonathan's Campaign had 6191 page views, raised more than $7000 from 123 backers, almost 80% of which did not know the researchers in person. When they were halfway through the campaign, they had gained lots of visibility and they got a full funding from the Beijing Jenome Institute.

The main crowdfunding platforms were scientist upload their campaigns are hence Consano, Experiment.com, Petridish.org, and Superior Ideas. Even though crowdfunding is not going to substitute public funding, it can coexist as a form of philanthropy (Weigmann 2013). Moreover, crowdfunding creates a great atmosphere for sharing ideas, engage the public in topics not so well known, raise awareness and it also gives scientists an incentive to communicate their research to a broader public, beyond the reward side (Weigmann 2013). We will now briefly describe these important crowdfunding platforms.

Consano is a crowdfunding platform created by Molly Lindquist in March 2013 in Portland (Oregon) with the aim of providing a platform to enable individuals to donate directly to specific medical research projects and programs, advancing medical progress and empowering individual action (Experiment).

The platform has a scientific advisory board, made up of volunteer scientists and physicians who are in charge of evaluating each project's feasibility, the researcher's CV and the actual relevance of each project. By doing so, donors can be sure that their money will be helping qualitative research projects and that their money will not be wasted.

Consano is a donation-based platform and here, even if a campaign's target is not reached, the project creator will still get the money raised up to then. Currently, the platform accounts for eight successfully funded projects with $86.163 raised.

Experiment is another platform for scientific research based in San Francisco where anyone can put their scientific research project after the approval by the Experiment researchers' team. Scientist share directly with backers all their improvements, progress, data, and results as soon as they are available for publishing. So far, the platform helped funding the publication of 20 papers in scientific journals through funded campaigns. The platform is all-or-nothing reward platform and each campaign needs to have a specific time duration and a fixed target of funding: if the target amount is not reached in the available time, the money raised up to that date is given back to the funders. The platform charges an 8% fee for all the funds raised, 5% is used for running operations and the other 3% is charged for credit card processing (Consano).

Experiment has a quite strict selection process. Each project's proposal has to answer a specific research question, results obtained have to be shared openly and researchers have to be expert enough to provide a mission statement and a transparency statement. Another important aspect of Experiment is that it puts a lot of weight on the target audience of each project, as it is crucial to make the idea become reality. Preliminary research is needed to understand who is going to be the supporting audience, like finding out their interests, what they read and do, whether they are part of communities and how the project will benefit them or how it will be important to them.

Context, significance and goals of the project are as important as the target public and the diffusion of the project is also helped by an attractive biography of the project ideators and by a distinctive and catchy banner image.

Experiment represents the biggest crowdfunding platform for scientific projects in the world, counting 5807 projects created, 373 projects funded with a success rate of 46.9 %, generating a total volume of $5.161.479.

5.807 Projects created	373 projects funded	46,9 % Success rate	$5.161.479 Total volume
4.112 Notes published	18.687 Backers	1.108 Repeat backers	14.335 Comments
	20 Published papers funded	1.661 stickers mailed	

Petridish.org is a technology start-up located in New York that is changing the way in which field research, exploration and scientific projects are funded. The platform was created by Matt Salzberg in 2012, aims at connecting world-renowned scientists with the broader public to raise awareness and interest about their research, and help raise funding directly from private donations. Petridish.org has highly engaging products but it also has a long-term vision, the desire to make scientist share their discoveries and their acknowledgments with everyone (Petridish.org).

Superior ideas is a non-profit entity created by the University of Michigan that helps scientists and researchers in bringing their projects into life. Created in October 2012 by Natasha Chopp, Brandy Tichonoff, Quentin Franke, Alex Hughes and Alice Markham, Superior ideas thanks to crowdfunding, is able to raise the funding needed to sponsor and create interesting projects that would not have otherwise been developed.

This donation-based platform charges researchers who post their projects only 7,5% for administrative fees but everyone can donate without incurring in any kind of cost. The staff chooses projects on the base of the suitability with their mission: each project has to be innovative, be creative and has to sustain economic and social development (Superior-Ideas.org 2015).

The suggested target funding is set to $10.000, target period can range from 15 to 90 days and each researcher is allowed to post only one project at a time.

Since its launch, Superior Ideas has raised more than $90.000 for research projects with 22.680 page visits, 12.200 unique visitors, and over 65.200 page views (Superior-Ideas 2015).

Table 1: Summary of the projects of crowdfunding platforms for scientific research.

	Total projects	Successfully funded projects	Success Rate	Total Raised
Experiment	5807	373	47%	$5.161.479,00
Consano	44	8	18%	$86.163,00
Superior Ideas	70	12	17%	$93.364,00

Source: Author's elaboration of data retrieved from Experiment.com, Consano and Superior Ideas.

1.5.1 Crowdfunding for scientific research in Italy

Since 2008, Italy has been experiencing severe cuts in the education system and in particular in the scientific research area. The financial crisis created an important gap in public resources to address social welfare policies. In Italy, it is estimated to be about 20 billion during the next 7 years (Cassa Depositi e Prestiti 2013).

As a consequence, even the investment in R&D and the expenditure on education have been experiencing severe cuts as well. However, countries and institutions are increasingly searching for other sources of funding and are still producing works and studies of high importance.

In order to evaluate the productivity of nations for what regards scientific research, agencies use the SCImago Research Group Ranking, which ranks nations according to the number of articles published on scientific magazines or even better, the

number of times that these articles have been cited (De Nicolao 2010). In this ranking, Italy ranks 8th, preceded by US, UK, Germany, China, France, Japan and Canada, all nations whose GDP is above Italy's.

Table 2: Data on Government spending in R&D ranked by year 2013. Data expressed as % of GDP.

Country	2009	2010	2011	2012	2013
Finland	3,75	3,73	3,64	3,42	3,31
Sweden	3,42	3,22	3,22	3,28	3,30
Denmark	3,07	2,94	2,97	3,02	3,06
Austria	2,61	2,74	2,68	2,88	2,95
Germany	2,73	2,72	2,80	2,88	2,85
Slovenia	1,82	2,06	2,43	2,58	2,59
Belgium	1,98	2,05	2,15	2,24	2,28
France	2,21	2,18	2,19	2,23	2,23
Netherlands	1,69	1,73	1,90	1,95	1,98
Czech Republic	1,30	1,34	1,56	1,79	1,92
European Union (28 countries)	1,84	1,84	1,88	1,92	1,91
Estonia	1,40	1,58	2,34	2,16	1,74
Norway	1,72	1,65	1,63	1,62	1,65
United Kingdom	1,75	1,69	1,69	1,63	1,63
Hungary	1,14	1,15	1,20	1,27	1,41
Portugal	1,58	1,53	1,46	1,38	1,37
Italy	1,22	1,22	1,21	1,27	1,26
Spain	1,35	1,35	1,32	1,27	1,24
Luxembourg	1,72	1,50	1,41	1,16	1,16
Poland	0,67	0,73	0,75	0,89	0,87
Slovak Republic	0,48	0,62	0,67	0,81	0,83
Greece	0,63	0,60	0,67	0,69	0,80
Romania	0,46	0,45	0,49	0,48	0,39
Ireland	1,63	1,62	1,53	1,58	N/A

Source: Author's elaboration from OECD data, website https://data.oecd.org.

Another important indicator is the national expenditure in R&D shown in table 2 expressed as % of GDP, and among the European country ranking of 2013, Italy is only ranked 16th and below the average spending in the EU. Hence, we could say that

despite the fact that very few money is spent on research in Italy, we can clearly state that Italian researchers' contribute to global research is not marginal at all and given the lack of financing research is still qualitative and important.

This qualitative research however is not securely backed financially, as universities often lack funds and the government does not invest in research in development but merely cuts funding.

The European Union only funds about 5-10% of the scientists that apply for public funding and hence, following the example of the American colleagues, Italian researchers are turning to crowdfunding.

The first Italian example is given by the University of Pavia, which created its own crowdfunding platform, UNIVERSITIAMO by UniPV. Pavia was the first University, among the first of the world, which opened to online funding to contribute to R&D. Through the portal, a reward-based platform, the University can gain funds by promoting research projects of various nature. Donations range from a minimum of 5 to a maximum of €1600 and if the project is not successfully funded within 60 days, all the money is returned to the backers.

Another example is given by Fondazione Ricerca e Talenti, a crowdfunding platform for the University of Turin similar to the one of the University of Pavia. This foundation raises funds for the University and supports scientists and researchers in the promotion of their activities. Unlike the platform of the University of Pavia, Fondazione Ricerca e Talenti is a donation-based platform, meaning that all the funds donated will be held by the project creators.

Table 3: Ranking of Worldwide Countries according to the number of articles published on scientific magazines and articles cited.

Rank	Country	Documents	Citable documents	Citations	Self-Citations	Citations per Document	H index
1	United States	8.626.193	7.876.234	177.434.935	83.777.658	23,36	1.648
2	China	3.617.355	3.569.652	19.110.353	10.462.121	7,44	495
3	United Kingdom	2.397.817	2.103.145	44.011.201	10.321.539	21,03	1.015
4	Germany	2.176.860	2.045.433	35.721.869	9.141.181	18,5	887
5	Japan	2.074.872	2.008.410	27.040.067	7.619.559	13,79	745
6	France	1.555.629	1.468.286	24.700.140	5.516.943	17,95	811
7	Canada	1.227.380	1.134.588	22.152.666	4.136.384	21,4	794
8	Italy	1.200.448	1.117.013	18.019.464	4.186.908	17,52	713
9	India	998.544	944.632	6.989.150	2.409.025	9,61	383
10	Spain	952.099	884.670	12.628.097	3.068.362	16,14	591
11	Australia	890.458	809.027	13.772.961	2.947.945	19,49	644
12	South Korea	739.229	719.338	7.063.429	1.528.443	12,38	424
13	Russian Federation	701.029	689.095	4.289.618	1.273.073	6,5	390
14	Netherlands	681.804	628.678	14.278.721	2.321.446	24,56	694
15	Brazil	598.234	573.988	5.036.027	1.699.530	11,73	379

Source: Author's elaboration of data from SCImagor http://www.scimagojr.com/countryrank.php.

1.6 Crowdfunding Pros and Cons

Crowdfunding like any other method of financing has its advantages and disadvantages, and according to Steinberg (2012), some of the benefits include, first of all, the full control of the campaign, from the target amount to the marketing; it can allow to test directly and with a relative time advantage some products on the market and see if there is an actual demand for it; project ideators can raise more money than what they were targeting; the supporters constitute a community that can spread the word and information about the projects via the web. Moreover, crowdfunding is an efficient method of financing that overcomes market inefficiencies, reducing entry barriers for new projects and absorbing the risk of investment, especially for innovative start-ups.

However, crowdfunding also shows weaknesses: the campaign and the period of fundraising can be stressful for the project ideators because they are not entirely sure of the success of the project; it takes a lot of time to create a successful marketing plan for the project, without which, it would become extremely hard to diffuse and promote the campaign; crowd funders are like customers and project ideators have to create something for which there is or there would be a concrete demand. Other risks include the presence of frauds and abuses, the lack of information available after a project is successfully funded, conflict of interests and scarce diffusion of digital technology. Hence, even if crowdfunding is still a relatively recent phenomenon we can still trace and highlight its strengths, weaknesses, opportunities and threats in a SWOT analysis.

The advantages for campaign creators are definitely linked to the web: the viral nature and the extremely quick rate of diffusion of information are some of the unique characteristics of the web. Thanks to it, the campaign ideators can promote its campaign and gain visibility and the traceability of information allows keeping track of the steps followed and of the developments of the campaign. Another advantage is given by the improvement of reputation and credibility given by the potential success of the campaign.

STRENGTHS
Web
Reputation

WEAKNESSES
Fraud
Digital divide
Many projects

SWOT

OPPORTUNITIES
Meritocracy

THREATS
Bad reputation
Copyright

Threats mainly reside in the possibility of incurring in frauds and the differences crated by the *digital divide*, term referring to the gaps between demographics and regions who can access the internet. Another threat is given by the myriad of projects existing all over the internet, among which a new project can often lose its visibility and could be lost among all the projects in the same field.

Opportunities reside in the meritocracy of the projects: it is the crowd who chooses which project deserves to be funded among the ones proposed. The platform becomes a meeting point between creators and funders where interactions create an added value through the exchange of ideas and opinions.

Threats consists in the bad reputation that can arise from a bad campaign, especially if the campaign creator is a company. Another important issue is copyright and the possibility of copying the ideas composing the projects: it could be dangerous to share ideas with the internet community because someone else could copy ideas and projects.

CHAPTER II

CROWDFUNDING REGULATION

2.1 Crowdfunding Regulation in Italy

Italy has been the first European country to develop a specific regulation for equity crowdfunding, the main reason being that small and medium enterprises often fail to get the minimum required amount to finance themselves and need to find investors through the web in order to grow.

On July 26th 2013, the public authority responsible for regulating the Italian securities market CONSOB issued Regulation n. 18592 that regulates "the collection of risk capital on the part of innovative start-ups via on-line portals".

The US Crowdfunding model is under the form of e-commerce, where people give money in exchange for a product or service. In Italy, on the other hand, the equity crowdfunding form is currently being drafted and revised by CONSOB and it is very difficult to implement.

The CONSOB regulation is divided into 3 main parts: the first part provides definitions of the actors involved and the financial instruments that gather capital; the second part comprises the normative aspects about the Register of Portals and the Rules of conduct for the managers. The Register of Portals is divided into two sections:

- an ordinary section, containing a list of Portal managers validated by CONSOB after the verification of the Integrity Requirements;
- a special section, whit a list of "Portal Managers" (banks and investment companies) that have communicated to CONSOB the existence of activities related to equity crowdfunding portals management.

The main obligations for the controlling shareholders in the Ordinary Section are:

- To state the legal form of the corporation
- To meet the integrity requirements stated in Article 8, comma 1

- For the controlling shareholders to meet the integrity and professional requirements
- To make available to the investors,

As stated in the Regulation, failure to meet any of these requirements will result in the deletion of the owner from the Register.

Portal Managers obligations include:

- to work with transparency, diligence and fairness, avoiding conflict of interest;
- to make sure that every investor is treated equally; they have to ensure transparency towards the investors;
- to make sure that they "*can reasonably and completely understand the nature of the investment, the kind of financial instrument offered and the risks related to them, and can take decisions on investment with full awareness*";
- to make clear to potential investors that the investments in high risk financial activities are proportionate to their financial resources;
- to update information on the portal such that offers can still be checked for up to 12 months after the closure of the deal;
- to highlight the criteria under which they select the offers and provide all necessary information about the activities of the innovative start-ups and their corporate structure
- to handle the orders from banks or investment firms following the rules of the "Consolidated Law".

The main causes of exclusion from the Register are:

- the collection of capital for companies that are different from innovative start-ups, including start-ups with a social vocation;
- falsification of contractual documents;
- communications of untrue documents or information;
- failure to communicate to banks or investment companies the withdrawal from the orders.

The third and last part of the Regulation deals with the Rules for the portal management and information about the offers. The Portal Manager in particular, for the offer to be presented on the portal, has to:

- Verify that the publisher has included the right to recede from the contract
- Verify that "at least 5% of the financial instruments offered are undersigned by professional investors or by banking foundations or by innovative start-up incubators pursuant to article 25, paragraph 5, of the decree" [1]

The creation of this regulation by CONSOB has put Italy in a leadership position for what regards the collection of capital through online portals. Since its publication date, many experts and all the various subjects involved have been discussing and debating about the phenomenon of equity crowdfunding in Italy and in particular about its future developments and current implications. One of the most discussed themes is about the undersign of at least 5% of the capital offered from an institutional investor: this, according to Umberto Piattelli, specialist in the regulation of equity crowdfunding in Italy, would be in contrast with the inspiring principles of crowdfunding (the financing of the idea or project from a crowd).

Roberto Bosi, successful crowd funder, thinks that the regulation could be too bureaucratic and that it could slow down the growth of the market and of the phenomenon. The 5% rule could be seen as a safety measure created by the legislator to reassure the investors but instead does not really solves the problem.

Moreover, another interesting problem is the reputational risk perceived by the banks in charge of the transfer of payments and the risk perceived by institutional investors in the project. Mario Calderini believes that banks and investment companies should not be Portal Managers but that only those who decide to sign up in the Ordinary Section of the CONSOB Register should take this role.

Also the founder of WeAreStarting and the founder of CrowdfundMe believe that one of the main obstacles of the launch phase of a platform is the research for a bank operator or investment company willing to handle the orders transactions. In an interview for ICN of July 2013, Umberto Piattelli states that the CONSOB regulation is mainly aimed at safeguarding the investors in the capital raising phase and has clearly tried to make equal both the regulations for the Portal Managers and both for the investment companies; however, the final results make it unfavourable for portal managers and not so appealing for the investors, especially for when the investment

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[1] Regulation on *The collection of risk capital on the part of innovative start-ups via on-line portals"* n. 18592 of July 26th 2013, part 3 article 24.

is made. He also states that the regulation should be less hard on the owners and a better balance could be reached with the adoption of best practices to be applied voluntarily from the authorities.

Hence, even though Italy is far better off than its European colleagues in developing the regulation for equity crowdfunding platforms, there is still room for changes and improvements.

For what regards lending-based platforms, they have been requested by CONSOB and the Bank of Italy to comply with the banking and financial institutions laws and regulations they all operate with a licence.

Donation and reward-based platforms instead are not regulated by the Italian financial services regulation.

2.1.1 A new regulation proposal

The regulation n°18592 of June 26th 2013 made clear that its aims were mainly to give access to equity crowdfunding only to innovative start-ups and an accurate legal protection for non-professional investors.

However, it was only with the recent modification made with the Legislative Decree of January 24th2015, the *Investment Compact,* that the market registered a partial change in its functioning. Thanks to this improvement, innovative SMEs have been included and have also been given the chance to access this new financing channel. Following a preliminary consultation period that started in June 19th 2015, thanks to which opinions from experts were gathered and modifications were introduced, the CONSOB started on December 3rd 2014 a public consultation in order to revise the Regulation.

The new features introduced include:

- Besides innovative start-ups, new categories of entities that can offer their social capital through equity crowdfunding have been introduced and they include innovative SMEs, collective investment undertakings (CIUs), companies investing mainly in start-ups and innovative SMEs. Moreover, also new tourism start-ups that were introduced by the law converting the Decree of Culture of 2014 were added to the legislation.

- A new category of subjects also among the professional investors, professional investors by request (as mentioned in Annex III of the CONSOB Regulation n° 16190 of October 29th 2007). Such change was introduced as to make it easier to satisfy the requirement to undersign at least 5% of the capital offered to professional investors to validate the project.

- A new lighter procedure for non-professional investors, which eliminates the offline step (that now is mandatory) for the profiling of the customer under MiFID procedure (Markets in Financial Instruments Directive released by the European Parliament on April 21st 2004 with the aim of creating a more integer and competitive European financial market and at the same time protect investors by requiring transparency). With the new draft on equity crowdfunding, it would be possible to ultimate the investment procedure entirely online, no matter the entity of the investment. Platforms in this case will have to internalise specific systems aimed at verifying the adequacy of their own customers at making investment operations. If platforms will fail to do so, banks and investment companies as done so far will undertake the procedure.

Moreover, the new revision eliminated the requirement of the authorization granted by CONSOB for those platform owners that have not published at least one public offer in the first six months of activity ort that have interrupted it for more than six months. This provision will actually help in decreasing the number of registered equity platforms that have never actually started their own activity.

The procedure has hence been made less burdensome for platforms that can now evaluate its own investors online even if the investment thresholds for profiling have been kept active. The same works for the 5% capital threshold to be destined at professional investors: the amount is the same but now a wider number of subjects can contribute (professional investors by request).

2.1.2 Taxation of crowdfunding in Italy

So far we have dealt with the major models of crowdfunding and the implications for their operation under the Italian regulation. However, how are the transactions involved in crowdfunding dealt with under the Italian tax legislation?

For what regards donation-based platforms, donations are categorised as acts of altruism and generosity not aimed at entrepreneurial purposes. The taxability of donations hence cannot be given for granted and has to be treated differently based on the different cases and situations.

Rewards on the other hand, relate to two different legal paradigms each having different fiscal implications. If the reward has a marginal value with respect to the money offered and it represents a "gadget" we can refer to the "donazione modale" in our Civil Code or conditional gifts in English. The donation is given in exchange for the promise of receiving something back and this reward does not have to be valued more than the money offered. However, each case has to be evaluated accordingly given that there is still some sort of donation involved.

Much different is the reward-based model typical of Kickstarter and Inidiegogo, extremely diffused also in Italy where the rewards offered have a value that matches perfectly the required financial amount. Here, the size of the reward changes the juridical nature of the operation as we are facing a sort of pre-order of goods or services even if they still have to come to existence. The purchase of a "future good", specifically regulated by the Italian Civil Code, does not present peculiar differences with respect to the purchase of an existing good.

The fiscal treatment here is the one provided for the *commercio di beni o servizi*. According to D.P.R. 633, which rules the trade of goods and sevices, the taxes applied to these operations depend on the nature of the transactions examined:

- If the effects of the initiative are ended at a specific time and in a specific operation with a limited value, it is possible that the activity is considered as non-professional and that the fiscal and accounting implications are inexistent or limited.

- For all the other cases where the activity is organised and consistent, there will be fiscal and accounting implications and the activities will be subject to IVA (VAT) and it will be required to register these activities in the account books. For each good, an invoice will have to be created and taxes will have to be given to the treasury (Fisco).

These requirements are active for those who produce directly goods and services but also for those who undertake auxiliary activities, like the crowdfunding platform itself.

In the US, crowdfunding platforms clarify the need to fulfil the fiscal requirements that are present in the different states (each of which has different tax regimes) by making precise statements. The same care and attention is not frequently encountered in Europe where crowdfunding and donations are often misinterpreted and misunderstood. It is the platform's responsibility to make sure those taxation regimes and its implications are well understood by the project owners as well as the many funders all over the internet.

2.2 Comparison with the regulation abroad

As we previously stated, Italy has been the first and only European Country to create a regulation ad hoc for equity crowdfunding. In order to have a more complete analysis of the phenomenon, we will compare the Italian regulation with the one of other important European countries (UK, Germany and France) and with the regulation of overseas countries like the US, Canada, Japan and China, highlighting the main similarities and the main differences.

2.3 The Role of the European Commission

Following the crisis of 2007, crowdfunding has become more and more widespread also fostered by the low credit given by banks and thanks to a difficult access to

finances by SMEs. Data from 2012 show that in Europe, crowdfunding rose by 65% with respect to 2011, reaching almost €735 million and worldwide, crowdfunding platforms raised €2.2 billion (De Buysere et al. 2012). Even though this phenomenon is becoming essential for small companies and privates at a worldwide level, it still has not caught the attention of European lawmakers.

An important problem for European Regulation in general is that it leaves countries with too much autonomy and it makes it usually hard for Europe to consider a unified and consistent law. This same fragmentation is seen in the Regulation for the access to finance for Small and Medium Sized Enterprises and Crowdfunding Regulation.

In the EU, SMEs represent about 99% of the productive system and for this reason, the European Commission published an action plan to improve the access to financing for SMEs.

This action plan makes clear the obstacles for SMEs, such as access to financing, venture capital and capital access to markets and identifies the actions needed to be implemented in favour of SMEs. Even though this plan is quite detailed, it does not consider crowdfunding as a potential instrument to foster the European economy.

The first signal came from the creation of the European Crowdfunding Network (ECN) in 2011, who soon turned out in an international no-profit organization located in Brussels. ECN aim is to spread the theme of crowdfunding in Europe and to sensitise about its development.

In a paper published on 29 October 2012 *A Framework for European Crowdfunding*, ECN makes an analysis about the European Crowdfunding industry and highlights the need for regulations and brings attention to the topic, setting guidelines and best practices. The best practices have a three-pillar approach, with the three pillars being regulation, education and research. Regulation is necessary for the correct functioning of crowdfunding but there is also need for the stakeholders to be educated to the subject and also the need for researchers to gather data and publish reports on this interesting subject. For ECN, crowdfunding is a valid alternative method of financing for SMEs and is also an important instrument to foster research and development. Crowdfunding however, has to be regulated at a European level

because the actual fragmentation of the regulation makes it hard to protect investors and makes it even harder to compete in the global market.

The growing size of crowdfunding and the big impulse given by ECN made clear the need for European Legislators to introduce regulations specific for this phenomenon. The European Commission, since 2013 has started to favour actions aimed at increasing the access to financing for SMEs and start-ups with greater focus on alternative sources of micro financing.

Moreover, in the *Green Paper on long-term financing of the European economy*, published in March 2013, the Commission showed the innovative nature of technological internet platforms and their possible use for the development of unconventional means of funds gathering, among which crowdfunding is the most common, the most popular and it is the one capable of creating a long-term sustainable growth.

Hence, the European Commission run out a survey, from October to December 2013 whose results were published on March 2014. In this survey, called the *Consultation Document on Crowdfunding in the EU,* the main aim was to explore how actions and soft-law measures could promote crowdfunding in Europe[2]. The 893 respondents gave important insights about the situation of crowdfunding in the Eurozone, helping in highlighting the limits, differences and key similarities for Members and entrepreneurs and most importantly, they gave some hints about the composition of the crowd. About 414 answers came from potential or actual funders, 152 came from project owners, 81 from crowdfunding platform managers, 91 from academics, banks, business angels and venture capitalists, 10 answers came from regulatory or supervisory authority representatives[3].

Most contributions came from France (254) and Germany (151), 71 answers came from Spain and 67 from Italy, contributing for a total 7,5%.

Following the survey, the European commission published the *Communication from the Commission to the European Parliament, the Council, the European Economic*

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[2] European Commission, Directorate General Internal Market and Services, *Consultation Document, Crowdfunding in the EU - Exploring the added value of potential EU action*, Brussels, 3 Ottobre 2013.

[3] European Commission, Directorate General Internal Market and Services, *Consultation Document, Crowdfunding in the EU - Exploring the added value of potential EU action*, Brussels, 3 Ottobre 2013.

and Social Committee and the Committee of the Regions - Unleashing the potential of Crowdfunding in the European Union, report which emphasizes the growing importance of source of financing for entrepreneurs in the EU, highlights the benefits for the economy in terms of employment, investment and innovation. Most importantly, the European commission distinguishes between crowd sponsoring and crowd lending/investing because the first should not be covered by the EU legislation because they do not include any risk of investment. Results show that the crowdfunding market with non-financial return works quite well and about 80% of the platforms operate at a cross-border level whereas about 40% aims at doing it in the future. Only one third of the participants thought that a legislation for crowdfunding by the EU could actually facilitate the access to the market or protect the founders. However, platforms with financial return work less efficiently, only 38% of the platforms operate at a cross-border level both almost half of them would prefer to open up to business with other UE members in the future. About 44% of the platforms say that the absence of cross-border activities is mostly due to the lack of information about the applicable regulation and 27% of platforms states that transnational activities are limited because of the high costs.

Most platforms believe that the action of the EU government on crowdfunding is needed and crucial, both for promoting a unique market with financial return but also for safeguarding the investors. In addition to that, platform owners should always be transparent and make available at all times all the necessary information for investors and contributors.

The priority actions that the EU Commission will undertake are:

- Create a group of crowdfunding experts (*European Crowdfunding Stakeholder Forum*) able to give information and advise platform owners on how to be transparent, adopt best practices and be certified
- Promote and sustain crowdfunding training
- Map the evolution of the National Regulations and held normative workshops and evaluate the need for an European Regulation

Once these actions will be taken out, the Commission will conduct a study to have a better understanding of the role of crowdfunding in the financial system and another study to analyse the potential benefits of crowdfunding for research and innovation.

2.4 Crowdfunding in UK, Germany and France

2.4.1 Crowdfunding Regulation in the UK

In England, the crowdfunding market is growing the most for lending-based platforms but a subsistent growth has been registered also for equity-based platforms. At the moment the only Regulation available refers to Lending based platforms and is the *Financial Services and Markets Act 2000 (Regulated Activities) Amendment (No.2) Order 2013* from July 2013 which regulates these activities since April 1st 2014, and states that each lending based crowdfunding platform has to be approved by the FCA, *Financial Conduct Authority*, for matters about the degree of liability of the platform owner in examining each *lender* or *borrower*, prevention of laundering and the protections of the investors' assets with respect to the one of the portal owner. For what regards equity and reward based crowdfunding, the regulation is still being drafted and waiting for new normative developments, the offer of actions, depositary receipts and other financial instruments is generally considered as public request; as such, in the market it could not be addressed to non-qualified investors unless they are mediated by an approved intermediary. Some operators of equity-based crowdfunding platform are financial brokers and are authorised by the Financial Conduct Authority (FCA), whereas other are exempt (Alvisi 2014).

The absence of a specific regulation made the FCA (financial conduct authority) limit these kind of investment only to professional investors, as they are the only characters able to understand the possibilities and possible advantages of newly-born companies and active in highly risky industries (like the high tech one).

2.4.2 Crowdfunding Regulation in Germany

In Germany, crowdfunding is highly regulated in particular for what regards equity-based platforms. We can say that crowdfunding is regulated under *Kreditwesengesetz* (*KWG*, German Banking Act), under the *Zahlungsdiensteaufsichtsgesetz* (*ZAG*, German Payment Service Act), but also under *Wertpapierhandelsgesetz* (*WpHG*, German Securities Prospectus Act). When

platforms trade high sums of money, issuing companies have to publish a prospectus under *Vermögensanlagengesetz* (*VermAnlG,* German Investment Products Act). Moreover, under KWG, each investment service activity has to be authorized by the *Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin,* German Financial Supervisory Authority). Under KWG and *VermAnlG*, we have that participations-shares in entities different from the SPA are included such as the LLC (*GmbH), limited partnerships*, *stille Beteiligungen*, participation rights (*Genussrechte*), participation *trusts* and closed investment funds. In general, when an online platform facilitates the offer of financial instruments and it is said to operate in the financial services segment, this platform is regulated and is subject to a licence by the German Financial Service Authority. Hence, even though there is no specific regulation for crowdfunding platforms, the existing regulation well suffices the gap and it is also quite restrictive in banking and financial matters.

As for Italy, reward, lending and donation-based crowdfunding platforms do not involve trading of investment products and hence fall outside the German financial services regulation.

2.4.3 Crowdfunding Regulation in France

Thanks to the recent expansion of the phenomenon, some proposals have been presented for the regulation of crowdfunding platforms, especially for what regards equity and lending-based crowdfunding. Nowadays, lending crowdfunding platforms can be managed only by banking intermediaries, require a minimum capital of €5 million and are regulated under the dispositions of the Autorité des Marchés and the *Autorité de Contrôle Prudentiel* (ACP), independently from the size of the operations performed; equity platforms on the other hand have to be authorised to operate as Investment Service Providers from the ACP and have to comply with the prospectus regulation.

The first step towards a proper crowdfunding regulation was made in May 2013 with the publication of a set of guidelines specific for project managers from AMF and ACP, which included information and proposals for different types of crowdfunding

platforms. Another step was made in September 2013 when the Ministry of Finance proposed a law followed by public consultation of six weeks, which included:

- the institution of an advisor for the investments (*conseiller en investissements participatifs*) for crowdfunding platforms;
- the introduction of presidiums aimed at protecting the investors by making sure that the funds given are actually used for the project they want to finance;
- the introduction of rules aimed at preventing money laundering and the risk of financing illicit activities (terrorism financing in particular);
- minimum and maximum capital required limit for platforms and for loan crowdfunding.

On February 2014, Fleur Pellerin, Deputy Minister for the Economy presented the draft on crowdfunding regulation that has been published this October. The key points of the regulation include, for what regard donation and reward platforms, no limit on the funds raised but they require that the rules of payment services are applied. For equity platforms instead, like in Italy, the regulation implies that a new activity of Portal Management has to be created. A brief prospectus, rules on costs and obligations will regulate transactions for more than €1 million. Also for lending platforms there are some limitations: each project cannot raise more than €1 million and the limit for each investor is of €1.000 for each project.

2.5 Crowdfunding Regulation in the US

In the US like in Italy, the legislators have introduced a regulation ad hoc to control the phenomenon of equity-based crowdfunding.

On April 5th 2012, the Congress approved the *Jumpstart Our Business Startups (JOBS) Act* at a federal level, which represents the first regulative action for crowdfunding worldwide. This Act is part of a bigger project ideated by Barack Obama aimed at bringing back up the economy and specific for start-ups and small companies for fund gathering.

Before the JOBS Act 2012, equity-based crowdfunding was not allowed under Securities Act of 1993 and so reward-based models were used instead until the

Securities and Exchange Commission (SEC) defined the rules that had to be applied. The transfer of financial instruments through crowdfunding platforms could take place only if the portal was registered as Broker-dealer at SEC and authorised by the Financial Industry Regulatory Authority (FINRA), the most burdensome activity regulated by *Regulation A* of the Securities Act.

To legitimate equity crowdfunding, the JOBS Act introduced further exemptions for the offers of financial instruments of limited sums through online portals in addition to those provided for by the Securities Act 1993. On October 2013, the SEC published a document with the draft of the regulation, carrying out what described in Title III of JOBS Act 2012, which contains the proposals to define rules for exemption and registration requirements (SEC 2013).

As in the Italian Legislation, the American regulation for equity crowdfunding requires that the offer of financial instruments through online portals can happen only with the involvement of a third party who acts as an intermediary, the Platform which, if not registered as broker or dealer, has to be registered as "*funding portal*" and has to follow specific rules and restrictions focused on informing and protecting the investor.

However, there exists major differences between the American and Italian legislation: access to equity crowdfunding in America is not subject to many restrictions and it is only precluded financial brokers, companies quoted in regulated markets, issuer who made previous offers to the public under prospectus and registered at SEC. The collection of funds, under Title III of the JOBS Act, can go up to $1 million in 12 months for the issuers (€5 million in Italy). In addition, the aggregate amount of each single investment must not exceed certain thresholds regarding the amount of capital, the number of investors and the time span of the offer and there is no provision stating that a certain share of the offer is reserved for institutional investors.

For transparency and legal protection matters, the issuers have to publish on the platform an informative document (containing characteristics of the offer, information on the issuer, his administrators and his business partners with participations higher than 20% of the capital, the activity performed, the risks and the

business plan) and they must undergo an audit of the balance sheet for those issuer who intend to raise more than $500.000 (Alvisi 2014).

In conclusion, we can say that the main advantage of the American legislation is that it allows everyone to gather capital from online portals in contrast with the more restrictive Italian legislation who allows it only to innovative start-up. However, the limit of $1 million for the gathering of funds along with the costs for the draft of the informative document and the duty to perform and audit raise strong doubts on the actual efficacy of the rules of the JOBS Act and on its support for the issuers.

2.6 Crowdfunding Regulation in Canada

Differently from the US, equity-based crowdfunding is still not legal in Canada even though there is a significant number of platforms adopting the donation and reward-based models. Some names of these platforms are FundWeaver, who aims at funding Native Canadian ventures and projects, Podium Ventures, which uses social networks to connect high-tech ventures with investors but also Sokap and IdeaVibes. Equity crowdfunding is all about issuing securities but in order make it happen, a strict regulation and a strong enforcement mechanism has to be applied.

In Canada, securities and entities offering securities (including equity crowdfunding platforms) must be registered unless there exists an exemption available from registration and/or they are required to prepare a prospectus. This policy, which requires registration and the correct documentation, allows the potential investors to have a clear and transparent amount of information prior to any possible investment and most importantly, it allows avoiding misinterpretations and fraud.

In order to be exempt from the need to register and prepare a prospectus, equity crowdfunding platforms must fulfil these requirements:

- Securities sold have to be low risk;
- Investors have to be wealthy (accredited investor) or have a pre-existing relationship with the issuer (close friends, family or business associate);
- If the company is small and has a low risk, it can be exempt.

Hence, if entrepreneurs are willing to issue securities through crowdfunding they will need to rely on an exemption from the registration and prospectus requirements.

Currently, Saskatchewan is the only province in Canada that has a crowdfunding exemption from the prospectus requirements even though there are still no equity crowdfunding platforms operating in the province. The exemption was introduced on December 6, 2013[4].

Recent news however, predict final crowdfunding rules to come into force by January 2016 in British Columbia, Ontario, Saskatchewan, Manitoba, Québec, New Brunswick and Nova Scotia.

2.7 Crowdfunding Regulation in Japan

Crowdfunding is still a small phenomenon in Japan, estimated at ¥8.2 billion, or $80 million (Takashi & Warnock, 2014). Here, the most well-known crowdfunding companies offer investors annual returns ranging from 2% to 10% (with a 5% average) and investors are repaid over a few months. The most important platforms are Campfire and Makuake, reward based platforms that are very similar to Kickstarter and Crowdbank, the first crowdfunding platform run by licensed securities firms.The Japanese Financial Instruments and Exchange Act (JFIEA) was amended and revised in February 2014 to promote the use of crowdfunding investment vehicles allowing venture companies to raise funding through securities and fund offerings, to allow the development and functioning of platforms through which venture companies could offer investments via the internet, and to allow investors to make investments on internet platforms created and operated by crowdfunding operators.

Prior to the amendments, securities were divided into two classes:

- Class I (professional) Brokers, with an initial threshold investment if ¥5 million;

[4]Retrieved from British Columbia Securities Commission Website on 11/12/15. Source: https://goo.gl/WzlrFb

- Class II (amateur) Brokers, with an initial threshold investment of ¥1 million.

Furthermore, the Japanese Securities Dealers Association (JSDA) forbade soliciting private placements. Even though these restrictions were limiting crowdfunding, an increasing number of investors was investing mainly on internet platforms. Hence, the 2014 amendments were mainly aimed at regulating the increasing number of amateur investors and at protecting professionals of investment companies. Initial investment thresholds were then reduced to ¥1 million for Class I and to ¥500.000 for Class II (Manda 2015).

The main objectives of the amended regulation were to:

- Expand registration requirements and define requirements for disqualification from the business
- Expand suitability rules and strengthen regulations governing conduct and good behaviour;
- Improve governance to enable business growth and better operational experience by strengthening administrative response capabilities by defining penalties, allowing for the suspension of orders where required, and improving regulations governing business operations.

In addition, after the amendments, three new regulations were issued and implemented: The Implementing Regulations, The Cabinet Office Regulations, and the Supervisory Guidance Regulations. In March 2015, *Nihon Benngoshi Renngoukai* (JBA) Opinion Letter addressed the gaps that were present in these three regulations in order to strengthen the crowdfunding market in Japan. The JBA opinion letter calls for more disclosure and transparency, a stricter enforcement, appropriate documents and careful inspections and guidance. All these actions are of course aimed at protecting investors further, through a complete disclosure of information on the crowdfunding operator's webpage, in a language that can be understood even by people who are not business professionals. Investors need to have access to business plans, financial information and all the documents needed to investigate any potential irregularities.

2.8 Crowdfunding Regulation in China

Crowdfunding industry is quite young in China if we compare it to more mature markets such as the US one.

In the United States, 5600 projects raised $215 million USD from 2.8 million investors in the first half of 2014 whereas in the same time span in the Chinese crowdfunding market, 1400 projects raised $30 million USD from 0.11 million investors. These major differences can be of course detected in the different regulations but also in the different investment habits of the two countries.

China does not have a specific regulation (like the JOBS Act in the US) or a national body that oversees and protects the issuing of securities and potential investors in equity crowdfunding. Moreover, crowdfunding is not clearly defined and hence people and investors are afraid to get into business as they may incur in fraud and may undertake risky investments without knowing. Fear of crowdfunding is also fostered by the experience of China with foreign investment, where investors were mainly taking advantage of cheap labour costs and developed infrastructures. Since 2007 Chinese National Development and Reform Commission is strictly selecting the foreign funding that comes into the country and it is reluctant to opening China to the worldwide financial market. Illegal fundraising was also fought against in 2013, where the Chinese Government had to face more than 3700 cases and a recovered of 1 billion USD.

The fight against illegal fundraising has highly limited the evolution of a crowdfunding industry, augmented by the unclear definition of crowdfunding business. Lending-based crowdfunding is seen as a negative way of doing business, also in light of an increased number of defaults and bankruptcies related to it. Reward-based crowdfunding on the other hand has not attracted the interest of regulators compared to equity and loan-based platforms. Equity-based crowdfunding is the most closely associated to fraud and illegal activities by regulators and it is strictly monitored but the legislation is on its way to a change.

Table 4: Summary of Crowdfunding Regulation of the most academically productive countries.

	Equity model	Reward model	Donation model	Lending model	Prospectus requirements-threshold
ITALY	Regulated by CONSOB and Bank of Italy.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Regulated by Consolidated Banking Law.	5mln euros per issuer in 12 months.
UK	Regulated by FCA.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Regulated by FCA.	5mln euros per issuer in 12 months.
GERMANY	Regulated by BaFin.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	100.000 euros per issuer in 12 months.
FRANCE	Regulated by ACP and Authorité des Marchés	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Regulated by ACP and Authorité des Marchés	1mln euros per issuer in 12 months.
US	Regulated by SEC and FINRA.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Regulated by SEC and FINRA.	1mln dollars per issuer in 12 months.
CANADA	Regulated by OSC.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	N/A	150.000 dollars per issuer in 12 months.
JAPAN	Regulated by JSDA.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	1mln Yen for Class I Brokers, and to 500,000 Yen for Class II Brokers.
CHINA	Regulated by CSRC and SAC.	Not regulated by financial services regulation.	Not regulated by financial services regulation.	N/A	N/A

Source: Author's eaboration.

On February of 2015, after a period of research and consultation with industry, the CSRC (China Securities Regulatory Commission) and Securities Association of China (SAC) have published draft regulations for equity crowdfunding in China.

The regulation will be made together with BOP (a UK based team of researchers, strategists and consultants for public and private sector) and the equity crowdfunding platform ShareIn to launch the first British-Chinese model. Expectations are quite high, given the fact that BOP predicts Chinese crowdfunding could be a $50 billion industry by 2025 (Roche 2014). The draft of the regulation requires any new platform to register with the SAC and apply to be a member. Individuals that aim to fund have to invest at least RMB 1 million in a single project, have net assets of RMB 10 million or have net assets of RMB 3 million and an average annual income of RMB 500,000 for the past three years (Cook 2014). This is quite controversial as the regulation seems to facilitate funding from selected segments of the population rather than targeting a massive crowd of people, like crowdfunding usually does.

CHAPTER III

CROWDFUNDING PLATFORMS IN ITALY

3.1 Composition of the Market

Even though crowdfunding is a much debated phenomenon, we have very few literature investigating the phenomenon in Italy.

Thanks to the research of Ivana Pais, Italian researcher of crowdfunding, Università Cattolica del Sacro Cuore of Milan, the help of TIM and the technical support given by Starteed we have a clear and detailed picture of the crowdfunding industry in Italy. The research has been made thanks to a questionnaire to which the response rate was 62% (total platforms interviewed were 51).

The number of existing crowdfunding platforms in Italy is 82 and it comprises 69 active platforms (up to the 21st of October 2015) and 13 in the launch phase. This mapping of platform has been published on 8 January 2016 and with respect to 2014, there has been a huge increase in the number of platform (68%) as in 2014 there were only 41 active platforms.

We can divide crowdfunding platforms according to their business models mainly into 4 categories but among Italian crowdfunding platforms there are some hybrid models which are more complex and do not fit so easily in the definition we gave previously.

The so-called Hybrid model comprises various combinations of the standard model and the most frequent is the Reward-Donation hybrid. Out of 69 active platforms, 31 belong to the reward-based model, 13 to the donation based, 3 to the lending based model, 13 to the equity based model and there are 9 hybrid platforms.
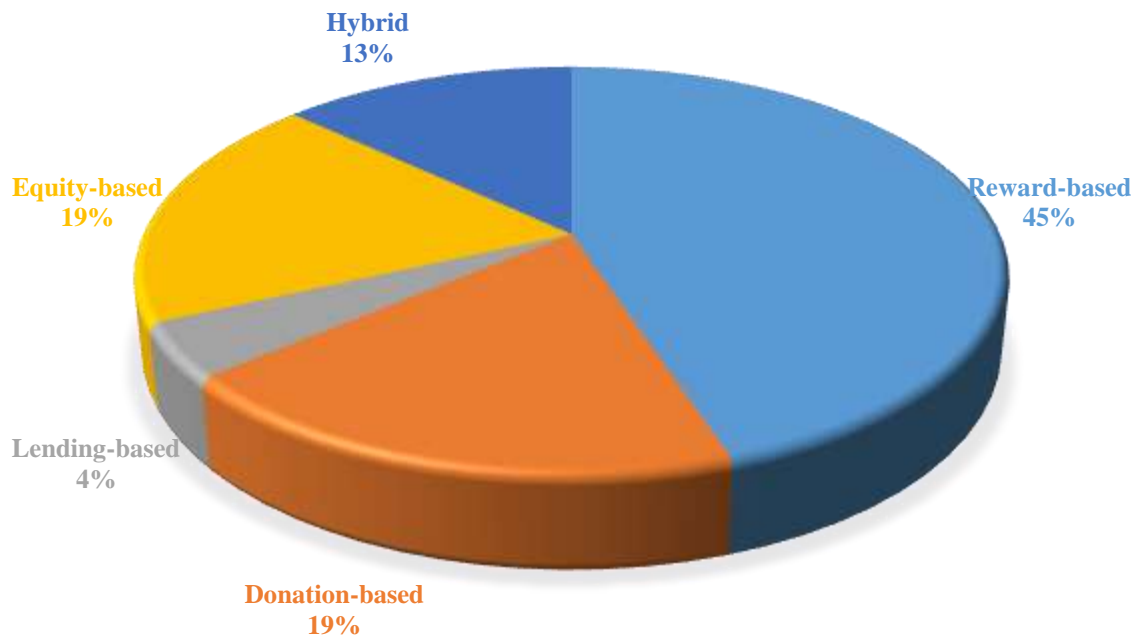
The existing platforms are listed as follows:

- Reward-based (31): BeCrowdy, Bookabook, Cineama, Cubevent, DeRev, Distribuzioni Dal Basso, Eppela, Finanziami il tuo futuro, ForItaly, Giffoni Innovation Hub, Gigfarm, Ginger, Kendoo, Land2Lend, Limoney, Micro Crédit Artistique, Musicraiser, Open Genova Crowdfunding, Rezz, Risorgimenti.Lab, School Raising, SportSupporter, Starteed, TIM#WCAP, Triboom, Upspringer, Vizibol, Werealize, WithYouWeDo, WOOP food, Wowcracy.

- Donation-based (13): 1caffè, Commoon.it, Fidalo srl, Funditaly, Iodono.com, Let's Donation, Mecenup, Pensiamocinoi, Progetto Civibanca 2.0, Rete del Dono, ShinyNote, Terzo Valore, Universitiamo.

- Social lending (3): Prestiamoci, Smartika spa, Borsa del Credito.

- Equity (13): AssitecaCrowd, CrowdfundMe, EquityStartUp, Investi-re.itFundera, My Share, Next Equity, Opsidea, SiliconVeneto Smarthub, StarsUp, Startify, Startzai, Unicaseed, WeAreStarting.

- Hybrid Platforms (9): Tip Venture, buonacausa.org, BuonaCausa.org, Crowdfunding-Italia, Donordonee, Greenfunding, Meridonare.it, Produzioni dal Basso, Proposizione, Innamorati della cultura.

With the newly introduced regulation, Equity Crowdfunding platforms are defined by the CONSOB regulation and only 2 out of 4 platforms inside the Register are actually active[5].

The reward-based model is chosen by 40% of the existing platforms, number goes up to 57% if we consider also hybrid platforms.

Donation based platforms on the other hand are decreasing as they are chosen by 16% of platforms, going up to 35% if we consider also they hybrid option. Equity platforms are the most common and they are becoming more and more popular. Now, 23% of the active platforms are equity-based.

Graph 2: Distribution of Italian Crowdfunding Platforms by year of foundation.
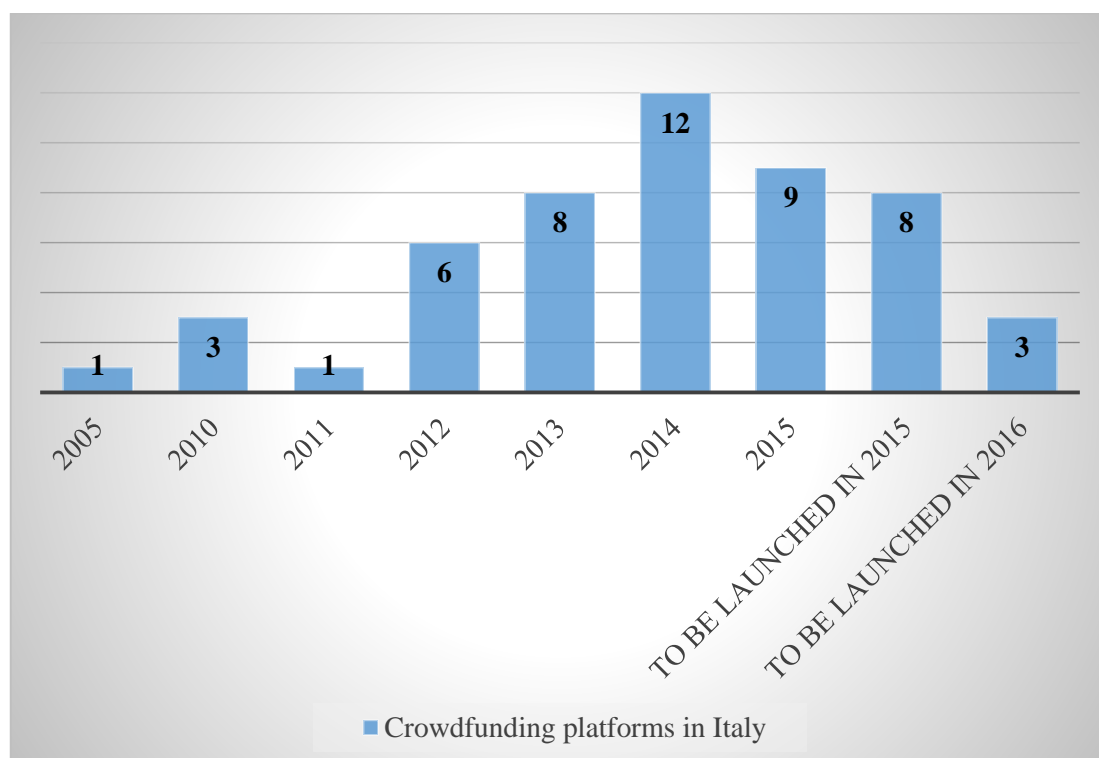
Source: Author's elaboration from data in Crowdfunding Report 2015, Pais, 2016.

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[5] Source: Consob, http://goo.gl/o20pvA retrieved on 3/09/2015

Figure 5: Chronology of Italian Crowdfunding platforms.
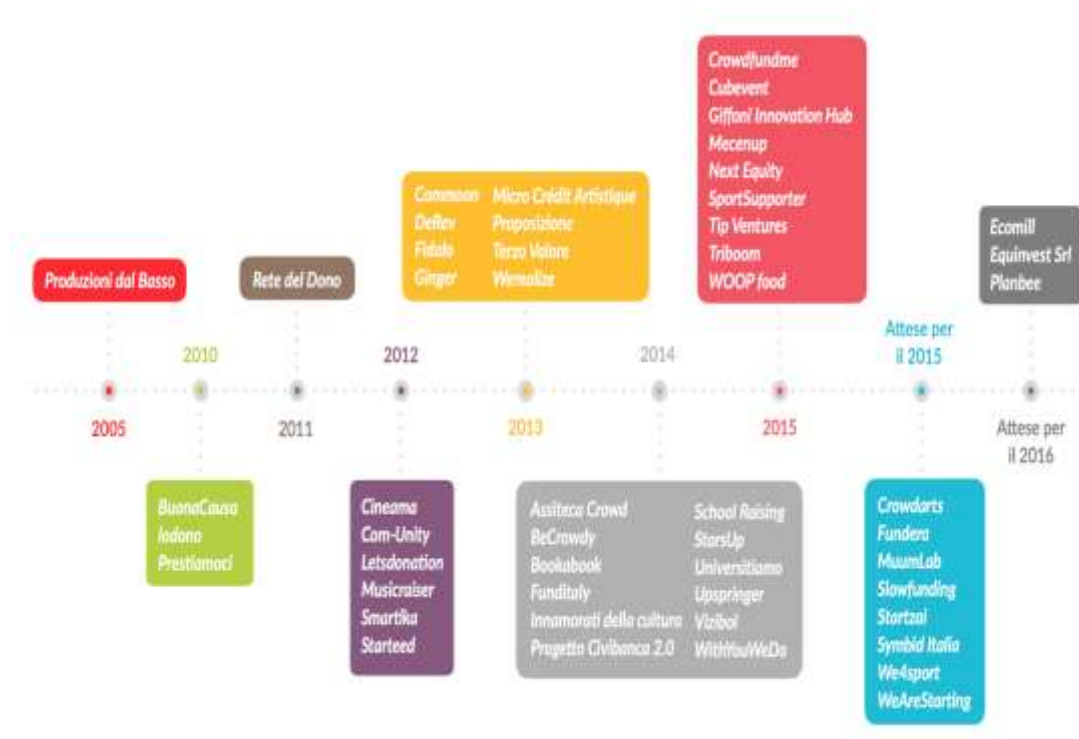
Source: Author's elaboration from Crowdfunding Report 2015, Pais, 2015.

Among the interviewed platforms, 78% is registered in the *Registro delle Imprese* and there are 11 unregistered platforms. Data mainly refers to donations, lending and rewards given the fact that equity crowdfunding still has to be fully implemented in the Italian crowdfunding system.

The projects received from the interviewed platforms in 2014 were more than 48.357, 79% of which were from lending-based platforms, 21% of reward-based and donation-based platforms whereas only 0,3% came from equity-based platforms (Castrataro & Pais 2014). About 4 out of 5 platforms make a selection of the projects that will be published and those approved are 12.809.

	Projects received	Projects published	Financed <100%	Financed >100%	Value
Reward-based	2.230	640	30	295	1.045.500
Donation-based	1.323	1.216	215	919	1.763.000
Lending-based	38.157	7.588	0	2.906	23.488.000
Equity-based	160	4	0	1	160.000
Reward+Donation	6.487	3.361	624	582	4.164.550
	48.357	12.809	869	4.703	30.621.050

The total value of the projects financed through crowdfunding platforms was about €30 million in 2014, and the biggest portion was raised by lending-based platforms. In light of the recent publication of the 2015 Crowdfunding Report, we can see an increase of 108% on the number of projects received. Among the interviewed platforms, the total amount of projects received has been 100.924 of which 67% came from lending-based platforms, 23% from reward-based, 7% from Hybrid platforms and 3% from donation-based ones.

The success rate of the Italian crowdfunding projects is on average 30% (against a 37% registered in 2014) and we can see that the highest success rate is in reward-based platforms (49%) followed by lending-based (43%), equity-based (33%), donations (12%) and hybrid platforms (10%). Hence the aggregate amount of the projects financed thanks to crowdfunding is about €56,8 million, figure which has increased by 85% with respect to 2014 (€30,6 million).

For what regards the topic of the campaigns published on the platforms, the most recurrent are creative and culture related campaigns (37%), social campaigns (34%) and entrepreneurial campaigns (20%).

Lending
€22.824.000,00
41%

Hybrid
€23.860.358,00
43%

€ 56,8
Million

Donation
€1.356.410,00
3%

Reward
€7.104.340,00
13%

■ Hybrid ■ Reward ■ Donation ■ Lending
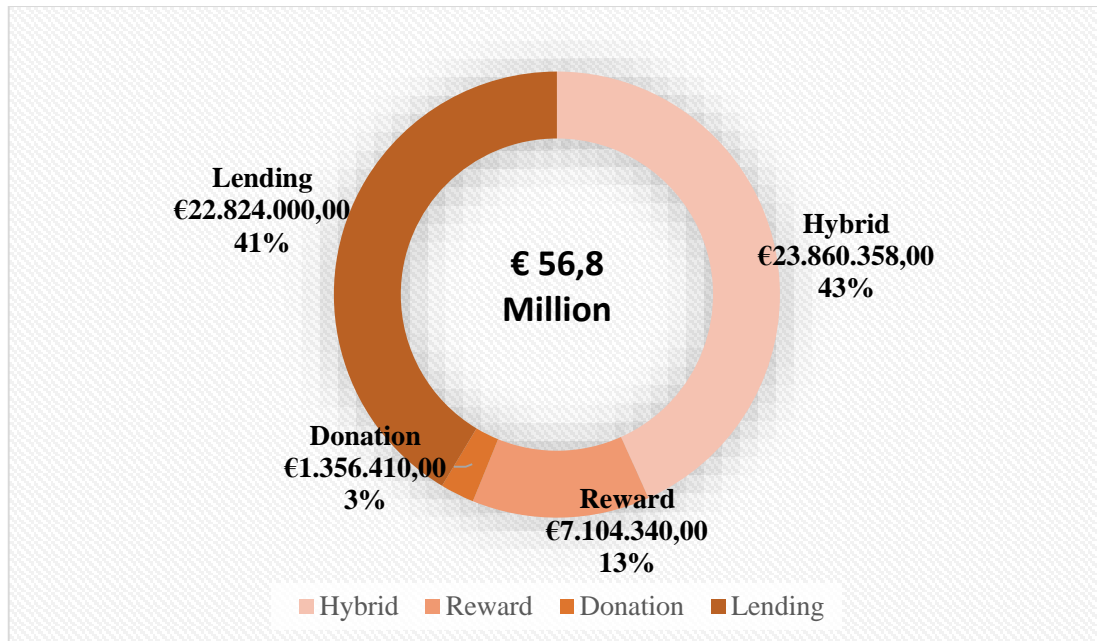
The economic value of th campaigns published is for the 81% between €1.000 and €10.000, of which 24% in the range €1.000-3.000, 32% between €3.000-5.000, 25% between €5.000-10.000 and there are 7% of projects under €1.000. However, if we investigate on the number of successfully funded projects we find that 91% is in the range €1.000-10.000 and out of these 23% are in the range €1.000-3.000, 39% between €3.000-5.000, and 29% between €5.000-10.000. In addition, among the financed campaigns, 20% are under €1.000 and 15% above €10.000.

3.2 Geography of Crowdfunding in Italy

The first Italian crowdfunding platform created was Produzioni dal Basso in 2005, followed by other experiments up until 2011, the year in which crowdfunding has been clearly defined but also year in which 10 more platforms were created followed by 5 more in 2012. More than 24 platforms were born between January and October 2013 and the trend is still increasing, along with the rate of mortality, counting 6 inactive platforms since October 2013. Most platforms are located in northern Italy and Milan is considered as the capital of Italian crowdfunding, being the legal head office of 16 platforms and registered office of 18. An increasing number of platforms

is found in southern Italy, now 8 and in the central part, we can find 16 active platforms.

Only three platforms were created by legal persons and the others have an average number of 4 founders per platform, who met thanks to professional experiences (40%), friends (29%), school (17%), family (9%) and start-up initiatives (6%). Platform founders are on average 38,5 years old, 38% has between 31 and 40 years and 21% is below 30 years old (Pais et al. 2016). Moreover, more than 81% of the founders have a degree or higher certificate, in topics such as economics, law, engineering and communication. There is an equal composition of men and women and the preferred legal form is currently the SRL, with 21 platforms registered as such.

At the moment, there are 48.357 existing Italian projects, 79% of which comes from lending-based platforms, 21% comes from reward and donation platforms and only 0,3% is form the newly created equity-based platforms.

About 80% of platforms performs a screening of the published projects and those approved are about 12.809 (26% of the total): 59% are lending-based, 41% reward & donation.

3.3 Criticalities of the Italian crowdfunding market

The Italian crowdfunding market has mainly a national target (73%) or local (14%), with the exception of three platforms that do business in the European market and two that are also on the extra-European market (in total about 12%).

In general, we can state that there has been a huge improvement in the crowdfunding market with respect to 2014 and the interviewed platform are very confident and positive about the future development and growth of the market.

With respect to the users of the platform, the main critical points are:

- A scarce knowledge of the instrument and very poor trust, given by the fear of incurring in frauds;
- A scarce diffusion on the knowledge of the functioning of electronic payments;
- A scarce diffusion of a culture of donation, sharing and collaboration;
- Digital divide;
- Poor quality of the projects uploaded as often the projects are incomplete, they do not have an explanatory video, images or rewards and are not well promoted;
- Resistance to innovation, as funding is mostly received via other more traditional methods.

The critical points related to the entrepreneurial aspects are mainly:

- The lack of important regulations on the topic and the lack of guidelines;
- Excessive bureaucracy in the management of the company;

- The international competition, because the market in Italy is developing quite slowly with respect to other countries;
- Sustainability, as for the Italian market crowdfunding itself is not enough to fund a project sometimes;
- For what regards equity crowdfunding, banks do not always allow for investments;
- Lack of collaboration between the existing platforms.

As for the legislative aspects, the main critical points are:

- Excessive limitations on equity crowdfunding, which may limit the freedom to do business;
- Lack of clarity in reward systems.

Overall, we can say that the Italian market for crowdfunding has slightly rose with respect to 2014 but we can observe an excessive offer with respect to the demand for platforms as we have too many platforms, very few projects and not much capital raised. There is also an increasing tendency to create niche platforms that serve a very limited amount of projects with respect to generalist platforms that include a wide variety of topics.

The success rate of campaigns has decreased from 37% to 30% from which we note an increased attention towards the phenomenon but a lack of specialization and information on the topic. There is also a marked unbalance between platforms as few of them retain the most part of the active campaigns and we denote an enormous amount of projects in the range €1.000-3.000 of financing. As we will see in the next chapter, thanks to the newly implemented regulation by CONSOB, equity crowdfunding platforms are slightly rising, as new projects and new portals have been launched.

3.4 Crowdfunding platforms for scientific and university research in Italy

Crowdfunding platforms dedicated exclusively to scientific research are only two in Italy but there exists more if we consider the global landscape. Big platforms like Kickstarter and Indiegogo may include some scientific projects but it is quite rare for crowdfunding platforms to focus only on science. Lately, Eppela, a generic platform, is slowly becoming a more research-oriented platform by welcoming an increasing number of University projects an all fields.

We have discussed previously that science can be quite a difficult topic to sponsor among the crowd but these dedicated websites make science more attractive and interesting to the public.

In the following paragraphs we are going to analyse the main crowdfunding platforms for scientific and university research in Italy and the key success factors of their most successful projects.

Our analysis is going to consider mainly:

- The final aim of the campaign, this might be straightforward for some projects but it is not an element to be neglected, as the final aim of the campaign could be the deterrent of participation for many project backers. A poorly described aim may create confusion and could prevent some people from backing a project.

- Detailed decomposition of the budget required, as to infuse trust in potential backers that their money will not be wasted;

- Definition of the target of the campaign, in order to individuate the best potential backers among the crowd. Targeting a wrong public can easily lead to a project failure and that is why many crowdfunding platforms have become monothematic, in order to select the public prior to the whole campaign process. Campaign creators who upload their projects on generalist platforms on the other hand, have to study very neatly their target and have to perform market research to better individuate the average backer interested in the project proposed.

- Communication with stakeholder, which has to be constant;

- Transparency, necessary throughout the whole process in order to create a strong and enduring trust relationship between project creators and backers.

When the execution and implementation of these principles is neglected, projects have lower chances of reaching their target amount of financing and hence to be successful.

3.4.1 Universitiamo

Universitiamo® by UNIPV is a hybrid donation reward-based crowdfunding platform owned by the University of Pavia, one of the first Universities in the world to open its research community to people's support in order to share scientific and cultural frontier innovation for the progress of everybody's life. Thanks to this platform, anyone can support scientific research with small amounts of money. The University of Pavia was funded in 1361 and counts 968 researchers and more than 24.000 students. Arianna Arisi Rota is the project manager of Universitiamo and delegate of the rector for the fundraising of the platform. Universitiamo, based in Pavia, was founded on the 28th of November 2014 and was developed with the help of Caffeina, a digital company specialised in the realisation of projects aimed at supporting the switch of company to the digital world. Caffeina had a key role in the development of the website and in the design of the crowdfunding platform.

People can choose a project to fund, see who are the creators and the researchers involved and keep on getting information about the project once it is fully funded and live.

Each project is open for donation for about 60 days and, since it is an all or nothing platform, the credit card of the funder will be charged only if the project reaches or goes beyond the targeted amount. Donations can range between € 5 and € 1.600 and each funder gets a symbolic reward, proportioned to the amount donated. The platform has been quite successful so far, counting 3 active campaigns and 10 successfully funded with a success rate of 70%[6]. This is quite a high success rate if we compare it to the one of other platforms that are not focused on a single topic but instead have a really high number of different projects on multiple topics.

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[6]Source: https://universitiamo.eu/en/, visited on 21/11/15

The platform only keeps three active projects at the time, in order to focus the donors' attention on a limited number of projects to have the best return form each page visit.

In each project's page, there is always a banner with a picture that immediately focuses the interest of the viewer and makes it easy to identify the project. The target amount to be reached is the first thing shown, along with the number of contributors and the remaining days for the project to be carried out. Just below, the attention of the viewer is drawn to the button "contribute now" and the forms of payments accepted but most importantly, there are available all the links for sharing the page on social media on Twitter, Google+, Facebook, Pinterest and an embed link. The body of the page instead, is dedicated entirely to the project, explaining the history behind it, the future aims and desired objectives and a detailed usage of the money requested. A video is always included, and most of the times it shows the team of researchers that are working on the project and deals with the main aim of the research. Team members are also described at the bottom of the page, along with the rewards given to project backers and a list of the backers of the project up to that point. In addition to posting projects on the website, Universitiamo besides having its own YouTube channel, constantly shares current projects on Facebook, Twitter, and Pinterest and even on Instagram, posts statuses that invite people to donate and creates event and conferences aimed at sharing information about the projects in order to get the highest possible amount of funding.

The most successful projects uploaded on the platform so far are 3, *Fight the Mosquito Bite*, *Tubercolosis: a re-emergent killer* and *3D Printing for Surgery*.

3.4.1.1 *Fight the Mosquito Bite*

The first successfully funded project was Fight the Mosquito bite, which raised €30.560 (the target was €30.000) before the 60 days' period with the help of 153 project backers.

The researchers team was composed by 11 team members, namely Professor of Entomology and project founder Anna Malacrida; Professor of Zoology Giuliano Gasperi; Assistant professor of Bio-informatic technology Ludvik Gomulski;

Associate professor of Biology Mariangela Bonizzoni; two Postdoctoral students Francesca Scolari and Paolo Gabrieli; three PhD students Mosè Manni, Grazia Savini, Alessandro Di Cosimo, and Federico Forneris Principal investifator of the phenomenon and Full Professor of Genetics Alessandra Albertini.

The team of the University of Pavia raised money to develop innovative biotechnological methods to monitor and fight the Asian tiger mosquito, *Aedes albopictus*, which is extremely widespread especially in the north of Italy and can harm the health of the population. Since there does not exist any vaccine or effective drug, the prevention of epidemics is based mainly on the control of their population through chemical insecticides. In the latest years however, the effects of the insecticides are lessened by the emergence of a resistance in the populations.

The team hence, required the financing to develop methods that interfere with the mosquito's ability to recognize host odours, develop new bio insecticides through bacteria, and to mark the DNA of the mosquitos to identify the source of new outbreaks and to develop risk maps.

Rewards given to the backers were an acknowledgment on the website for donations lower than €500 and acknowledgments on the paper published on the International Journal for donations higher than €500.

3.4.1.2 *Tuberculosis: a re-emergent killer*

The second successfully funded project was *Tuberculosis: a re-emergent killer* which raised a total of €44.634 (about €14.000 more than the target amount) before the chosen 60 days' period with a total of 449 backers. The researchers' team was composed by 6 team members in total, namely Giovanna Riccardi, Full Professor of Microbiology and Head of the Laboratory of Molecular Microbiology and also founder of the project, Associate Professor of Microbiology in the Department of Biology and Biotechnology Edda De Rossi; researcher of microbiology Maria Rosalia Pasca; Post-Doc researcher Laurent Roberto Chiarelli; 3 PhD students in genetics and Biomolecular Sciences (Giorgia Mori, Marta Esposito and Beatrice Silvia Orena).

The team started the campaign to develop and search for new compounds in order to detect and destroy a disease that seemed far old and forgotten: tuberculosis.

The drugs currently under trial are many but new drugs that are more efficient are needed and this team from the University of Pavia have one but they need to test it in order to better understand its target and its functioning mechanism. The study aims at understanding the resistance mechanism and what the drug does when it interacts with tuberculosis; understand which the main target of the drug is in order to improve it. Donors who gave between €200 and €500 had a place reserved for the show

"Tuberculosis: science interacts with the music" held on the 23rd of January at Politeama (Corso Cavour 20, Pavia). Donors who gave more than €500 were instead mentioned in the publication regarding the achieved results.

3.4.1.3 *3D Printing for Surgery*

The third successfully funded project was 3D Printing for Surgery, which raised €67.315 (more than €20.000 with respect to the target amount) before the scheduled expiration with a total of 195 backers.

The researcher's team was composed by 11 team members, namely Ferdinando Auricchio Professor of Mechanics of Solids and Founder of the project; Andrea Pietrabissa, Professor and Head of the Complex Structure of General Surgery; Professor Santi Trimarchi, Associate Professor of Vascular Surgery; Carlo de Vincentis Heart surgeon; Assistant Professor Michele Conti; Assistant Professor in Industrial Engineering Simone Morganti; PhD Student Stefania Marconi, Doctors Gianluca Alaimo, Mauro Ferraro, Chiara Trentin and Alessandro Reali.

The project was set up as a first target of a bigger achievement: in fact, the first step aimed at reaching the initial target of €40.000 in order to create a pilot service for the local community and buy a 3D printer, printing materials and to hire part-time personnel. The other two steps, who still have to be launched on the platform, set up for the second step a target of €70.000 for the purchase of 3D printer, printing materials and hiring of personnel for a service at a regional level; for the third step

instead, aimed at providing service at a national or international level, they set up a target of €120.000.

Researchers of the team mainly need the funding to create anatomic models to use for the pre-operatory planning of surgeries, to teach practicing surgeons but also to explain patients what the operations will be about. 3D models obtained through printing could show all the anatomical features of the area to be operated, could highlight all the relevant structures of the vascular system and possible tumours or lesions. These models are highly exploited by the Policlinico San Matteo of Pavia especially for kidney and spleen surgeries. The CT and MR images of the patients are provided by the surgeon and are then processed to build an anatomical 3D model of the region. Most importantly, the goal of the team is to make this technology available at a national or international level by creating an actual integrated tool that helps the surgeon in the planning of the operation.

Donors who provided more than €200 received 3D printed key-chains with the logo of Universitiamo or with a 3D printed heart whereas donors who gave more than €2.000 received both the key-chains and their name or company logo on the Universitiamo Webpage.

3.4.2 Fondazione ricerca e talenti

Fondazione Fondo Ricerca e Talenti was funded on February 10th 2012 and it is a foundation built with the support of the University of Turin and the Fondazione Cassa di Risparmio di Torino. The President is Gianmaria Ajani and the Vice-President is Franco Garelli, both professors at the University of Turin. The aim of this foundation is to build an entity capable of raising money for university research limited to the Piedmonts' territory. This entity mainly does fundraising and crowdfunding activities in order to increase the resources available to the University of Turin. Hence, the platform is donation-based and projects receive money even if the targeted amount is not reached[7]. Other than providing a platform for the projects of the University of Turin, the platform gives students and PhD students the chance

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[7] Source: http://www.ricercaetalenti.it/presentazione/ visited on 21/11/15

to win a scholarship for a 3-months period of study or research in a University abroad.

Fondazione Ricerca e Talenti uses more than the platform and social media to promote its projects; in fact, their team members organise workshops, seminars, conferences, exhibitions, entertainment events but also flash mobs and they even made an awareness campaign throughout Europe to promote the fundraising activities done by universities. The platform website was created with the help of Frigorosso, a communication agency based in Turin that has worked with big companies like Italo, Toyota, Lavazza and Fiat.

Each project has its own webpage, containing on the top, a banner image with the aim of giving the reader a hint about the main topic, on the right we find the target amount to be raised, the number of backers and links to easily share the project on Facebook, Twitter and a button to get an embed link of the page. The platform also owns a YouTube channel, *Fondo Ricerca e Taenti*, where they upload videos of the projects but also upload projects proposals and conference they held to promote the platform.

In the bottom part of each page, we can find a brief description of the project, how it will be developed and a short description of the team involved in the creation of the idea. So far, only three projects have been uploaded on the platform, they have all been very successful, and they were *CI-VI-LE*, *#HACKUNITO* and *Umanesimo Corsaro*. The success rate of the projects is 100% but the platform seems to have been inactive since March 2015.

3.4.2.1 *CI-VI-LE*

The project *CI-VI-LE*, named after Cittadinanza Visioni Letture aims at diffusing the knowledge of the Italian Constitution through a simple interdisciplinary course it targets mainly young people and all that wish to know more about its contents. The project raised €4.385, 146% financed with respect to the target of €3.000 and had 71 backers.

The project founder, Laura Scomparin and other researchers from the department of Jurisprudence of the University of Turin compose the team.

The money raised will be used for the realisation of a web portal containing courses for high school and university students in order to reach in the future a higher amount of users and to become shareable through social media.

3.4.2.2 #HACKUNITO

#HackUniTO is an ambitious project created by the rector of the University of Turin Gianmaria Ajani aimed at activating the resources of the University to create a meeting point between the territory and the campus, by sharing knowledge, resources and competencies for the citizens of the city. The project, who raised more than €3.000, was backed by 79 people and took place in Turin form the 12th to the 17th of May 2014. *HackUniTo* aimed at sharing innovation end at creating engagement, with the help of jurists, economists, psychologists, and all those willing to share and promote innovation in the territory. 1548 people participated to the meta-hackaton and out of this huge meeting, 191 projects were created afterwards. Some of the most successful projects were *Collanguages*, about the sharing of languages among colleagues, *ToBike Now!* about the creation of an application useful for the improvement of the bike sharing service of the city and *Med Mapp@To*, for an easier orientation on the first days of University.

3.4.2.3 Umanesimo Corsaro

Umanesimo Corsaro is a project created by Castalia, a universitary spin-off created out of the department of Humanities, aimed at developing a series of conferences on the relationship between hard sciences and humanities and their relationship. The main objective is to demonstrate that humanities can be now more than ever useful in the society and how each student in humanities can valorise its competencies on the job market. The project, which raised €3.000 from 67 backers, was held in Turin on 3rd October 2014.

3.4.3 Eppela

Eppela is an Italian crowdfunding platform born in 2011 from an idea by Chiara Spinelli and Nicola Lencioni, who wanted to test the Italian market with the successful business model adopted by Kickstarter.

Eppela is an all-or-nothing reward-based platform which applies a fee of 5% to the various project owners, 3% of which is destined to Pay Pal, the only payment method accepted by the platform.

Like many other platforms, each project is subject to a strict selection process prior to its acceptance by the platform's staff. Research is made on the project creators before their projects can be uploaded and also their budgets, coherence and credibility are tested before the final publication is made on the platform.

The platform can be categorised as a generalist platform as it comprises projects of different nature. About 80% of the projects are in the Art and Entertainment category but in the last few years, the platform is focusing always more on subjects related to science and projects sponsored by researchers and Universities.

Once a campaign is uploaded, it cannot be changed and it will keep its characteristics throughout its entire duration. Also, the platform is present only over the Italian territory and hence campaigns are mainly addressed to the Italian market. However, even if young and more suitable for an Italian audience, the platform has a 55% project success rate over those published, more than 1800 financed projects, €500.000 co-financed by mentors and a volume of offers of about 7 million (Eppela, www.eppela.com).

In the Homepage of the website, the current ongoing projects are shown, divided into sections according to their status (new, ongoing, financed, and expiring) and in the bottom there is the list of sponsors and mentors of the platform, who often cover up the money needed to raise the amount targeted.

Project are also categorised depending on their topic, which are currently 12:

- Design;
- Editorial;
- Cinema;

- Civic;

- Art;

- Theatre;

- Games;

- Education;

- Music;

- Food;

- Outdoor;

- Technology.

The platform is easy to use and very versatile: projects can be uploaded both in Italian and in English and project creators are helped by an easy form to fill. Potential funders can easily browse the website and look for some of the most interesting projects to fund. Eppela provides also a guide for new project owners, explaining how crowdfunding works, the actions of co-marketing undertaken by the platform, and the many different campaigns that can be enacted (reward, pre-order, ticketing, charity). Co-financing is also enacted on the platform: big Italian companies collaborate with Eppela in order to reward creativity and innovation. These mentor companies have decided to fully enjoy the experience of crowdfunding by organizing specific calls and by co-financing the projects once, they have reached more than 50% of their targeted amount. These companies are:

- Postepay Crowd, which sponsors the "maker generation" and projects related to digital, mobile or social innovation by offering co-financing for a maximum of €5.000 for each project;
- Fastweb FastUp, which co-finances projects in the area of demotic, robotics, infrastructures and ecosystems, digital education and smart cities for €10.000 for each project;
- UnipolSai Future Lab supports projects related to culture or creativity, sharing economy, requalification of slummy areas of our country. This company offers up to €5.000 of co-financing for projects that reach at least 50% of their budget from 30 different backers.

Each project has its own page, having a video explaining the topic of the project on the top and a body with all the information regarding the aim of the project, the team behind it, the target to be achieved and in how much time the fundraising will be over. The time allowed by the platform in order to reach the budget ranges from 15 to 40 days and in the project's webpage, the creators have to clearly write down how the money raised will be used and who is behind the project creation and actualization. Rewards have to be set too according to the entity of the expected budget and according to the project's nature but in this matter, the platform provides examples and suggestions in order to set reasonable rewards for the potential backers.

The platform has a Facebook page, Instagram, Twitter, YouTube and Pinterest, Medias which are used to promote current projects that are expiring but also to show pictures of events successfully funded projects that have turned into reality.

The most successful projects uploaded by Universities and researchers on the platform so far have been quite a few, namely *#SmartME: la Messina del futuro*, *Energy Switch: il fotovoltaico è meglio piccolo!*, *COVA – COllaboriamo a VAlorizzare i monumenti minori*, *Voglio fare impresa!*, *Sabato in Biblioteca!* e *La Russia di Sochi 2014*.

3.4.3.1 *#SmartME: la Messina del futuro*

The first project that we are going to analyse is *#SmartME: la Messina del futuro*, project that raised €34.132 over an initial target of €15.000 with the help of 84 project backers.

The project was born from the idea of a group of researchers of the Mobile and Distributed Systems Lab (MDSLab) of the University of Messina together with the Industrial Liason Office and the IT University Department (CIAM). The aim of the team, whose leader is Antonio Puliafito, is to create a sort of "dialogue" with the city of Messina based on the paradigm of the Internet of Things (IoT) to foster the creation of an innovative and virtual city. The academic spinoff DHLabs is also involved and it helps in the realisation of ad hoc detectors with the sponsorship of the

Messina Municipality. The core of this project resides in the idea that research can be more than good and beneficial for the community and that the University can also have a technological role and can involve all the citizens in making services for the city. Funds raised will be exploited to create an open data platform that requires sensors and Arduino Yun cards to be installed all over the city on buses, buildings and streetlamps. Thanks to these instruments, it will be possible to gather data and process information for the creation of services that will be made available through smartphones or tablets. Quality of the air or traffic in the city could be monitored and the data could be even used to find free parking lots in busy areas of the city. These are only some of the services that could be carried out with this smart city that will in turn help the citizens of Messina in becoming Smart People.

Rewards given to the backers were an acknowledgment on the website and gadgets for donations lower than €50, acknowledgments, and free use of the data, services and access to the development of the project for donations between €50 and €500.

3.4.3.2 *Energy Switch: il fotovoltaico è meglio piccolo!*

The second project analysed is *Energy Switch: il fotovoltaico è meglio piccolo!*, project which raised €5.536 over an initial target of €5.000 with the help of 45 project backers and co-financed by the mentor company PostePay Crowd.

The project was born from the idea of a young student in computer engineering from the University La Sapienza of Roma, Daniele Sora.

The aim of this young entrepreneur a device called Energy Switch that would allow directing the energy coming from photovoltaic systems into those devices that need the most and leave the others to the energy provider.

This because people usually think that in order to have a well-functioning photovoltaic system you have to put huge solar panels on top of the roofs, however this is incorrect. Only two panels are sufficient and efficient in providing the energy needed to a small house. Those devices that are recharging or are in stand-by give a great percentage of the energy used in a house, around 50%. If people could contain the costs implied by these devices, with a small photovoltaic system a huge saving could be made.

Rewards given to the backers were an acknowledgment on the website and gadgets for donations lower than €100 and acknowledgments, aluminium solar panel charger and a smart watch were given for donations between €100 and €500.

3.4.3.3 *Voglio fare impresa!*

The third project analysed is *Voglio fare impresa!*, which raised €4.305 over an initial target of €4.000 with the help of 104 project backers.

The aim of the campaign is to finance the juridical start-up of two companies, whose business ideas will be developed in the business incubator IDI of the Department of Economics of the University of Salento.

With the money raised, two groups of students will have the chance to have all the material needed to build their work group and develop their business idea. In the process, partner companies of the incubator, who will give advice on how to solve problems and handle the market in order to increase their customer range and be successful, will help them.

A board is also going to be elected, in order to better evaluate and reward the best ideas that will turn into real companies thanks to the project.

The chosen incubator is a highly informal institution and getting in touch with innovative business instruments and getting advice by partners is extremely easy and natural. In creating this project, the professors Stefano De Rubertis, Amedeo Maizza e Francesco Giaccari have set two main challenges: first, to relaunch the organizational culture and second, to make a highly formative project by giving quality and employment opportunities for recent graduates in Salento. Besides the start up, the incubator IDI aims at increasing and promoting the social relationships of students, by challenging them in a network of professionals, consultants, entrepreneurs and high quality professors who may help them grow professionally and academically; furthermore, another aim is to offer students some of the best instruments of analysis, data capture and monitoring of different aspects linked to business administration.

Ideators and coordinators of the campaign are Pasquale Stefanizzi and FIRM (spinoff from the University of Salento).

The target amount, €4.000 will be split for the following purposes:

- Eppela Fees- €200

- Transactions Fees - €60

- Merchandising - €360

- Marketing Campaign Budget - €380

- Amount to support the Startup - €3.000.

The rewards that were given to project backers were gadgets (t-shirts, sweatshirts and cards) for donations up to €50, stickers and the title of ambassador of the incubator for donations up to €80, local food products for donations up to €100 and a special mention at the final event plus gadgets and local food products for donations up to €200.

3.4.4 Why were these campaigns successful?

As for the projects of Universitiamo, they have been successful mainly because their aims were straightforward from the beginning, as their videos and their projects description are very detailed. Moreover, the team behind each project is carefully described and presented in order to create a relationship with the potential backer who visits the webpage. As for the description of the budget and the usage of money, *Fight the Mosquito Bite* is the only project who does not have a detailed breakdown of the required financing. Moreover, being Universitiamo a specialist platform, the target is set ex ante so that project creators do not have to research the market. All of the campaigns are highly shared and spread all over the available social media (Facebook, Twitter, YouTube, Pinterest and Instagram) and there is a high degree of communication and transparency, as stakeholders are informed on the campaign's development from the beginning to the realisation of the project.

The campaigns of Fondazione Ricerca e Talenti provide a clear but brief description of the projects and the budgeting is not made clear to backers. Since the platform is mainly sponsored and developed by the University of Turin, backers of these projects can be mainly students or academic member hence this could be one of the reasons why these campaigns have all been widely financed. The communication strategy adopted by these platforms has been one of a kind: besides the efficient use of Facebook and Twitter, the creators organised several conferences and meetings to

promote the projects and they even created video that was then uploaded on YouTube. Transparency is not always a feature encountered in these projects and there have been very few updates on the campaigns' development after their successful funding.

The last platform analysed, Eppela presents all the features for success. Not only each of the projects presented refers to a clearly defined target but also the videos and the descriptions of each project are very detailed and precise. Even though the videos uploaded are of a lower quality with respect to those of the other platforms analysed, each of them is very straightforward and provides all the necessary information for a potential backer to become involved in a campaign. Each project has done a massive communication campaign all over the social media and this has definitely helped in achieving the target funding. The peculiarity of Eppela's projects reside in the fact that mentor companies can come into play and finance projects in which they are interested and help them in reaching the target. As for transparency, each of the projects analysed have shown detailed information and post-campaign updates in order to inform backers about the development of the campaign.

CHAPTER IV

HOW SUCCESSFUL CROWDFUNDING CAMPAIGNS ARE CREATED

4.1 The strategy behind the success

In the previous chapter we have analysed different crowdfunding campaigns, we have gone through the main reasons for which these campaigns have been successful, and how able the project owners have been in raising funds from the crowd. Some of the mechanisms involved in getting project backers are similar to those of start-uppers looking for funds in the initial phase of their company's project but as we will see, there are also other features that could make it much easier for a crowd funder to get the money needed to realise its project.

A start-upper looking for funds in the seed stage mainly has to deal with three crucial activities in order to reach his funding goals:

- Identify space and demand for the innovation
- Take the opportunity
- Be able to transmit the growth and profit potentials of the project to possible investors.

Among these phases, the first one, also identified by Short et al. (2010) as opportunity recognition, is the key process in the creation of new processes, products and technologies and it is considered to be at the heart of entrepreneurship.

When the entrepreneur has to get funding from conventional channels, he will have to face a limited number of specialised investors, interested in solid data and in reliable information, an accurate business plan showing high future profits and a truthful recovering of the investment in a limited number of years.

However, if we operate in a crowdfunding context there are different quality signals perceived by funders of crowdfunding platforms. A study by Mollick (2013) reveals that funders are mainly attracted by communications and project aesthetics, like the presence of an explanatory video or the presence of constant updates in the project's

webpage but they are also repelled by errors such as spelling mistakes and flaws in the project presentation (preparedness). Hence, even if the crowd of crowdfunding platform may not be seen as a group of investment specialists, they can still be very scrupulous and sensitive to details. It has to be born in mind though, that the opportunity recognition phase is still the most crucial one in involving backers in the creation and beginning of the campaign, because "not only the entrepreneurs have to identify an opportunity, but also the crowd has to recognize and evaluate it" (Lehner, 2013, p. 13).

Challenges for crowdfunders are mainly linked to communication issues because, as opposed to traditional financing, the crowd is composed by a great heterogeneous mass of web users, which, even if considered by grouping it into communities present in the platforms, there is still a high rate of variability for their different needs, skills and competencies. Lehner (2013) identifies two types of crowd members, namely:

- Passive listeners, relying on the available information
- Active seekers that are looking actively for investment opportunities.

It is of high importance to involve the network of investors in the opportunity recognition phase after a careful strategic communication planning and with a set of heterogeneous targets, for which a single channel like the business plan would have a limited impact (Steinberg, 2012).

Differentiating the instruments of communications and the relative communication channels is key to get the attention of active seekers but there must also be strategies and instruments aimed at involving passive listeners. The crowd can be involved through social media like Facebook and Twitter but also through specialised blogs that deal with specific topics.

Thanks to the web, the team of funders can reach a huge amount of individuals besides the number of family members and friends that usually makes up for the initial group of backers for the project. Even family and friends turn out to be strategic in the communication strategy, as they are key for the development of ever-growing network effects.

So what does it take to make a successful crowdfunding campaign? Many crowdfunding Websites provide operative frameworks and best practices to guide project funders into organizing efficiently campaigns and into managing them effectively. Kuppuswamy e Bayus (2015), underline that the help is usually provided by individual initiatives, where campaign funders, both successful and failing, offer their knowledge and experience through comments to beginners. Sometimes, even the same crowdfunding platforms offer examples, like the Success School offered by RocketHub on their webpage. Here, funders who reached the desired threshold or have received an overfunding are invited to describe their strategy, the results achieved, their opinions and thoughts on the campaign development and on the platform services (Steinberg, 2012).

Even though frameworks and best practices for creating successful campaigns are very common, they are not the only thing that a crowdfunding project's creator needs in order to be successful. Crowdfunders need to be highly motivated in order to carry out a crowdfunding campaign and an interesting study on why people are motivated to fund and post campaigns in crowdfunding platforms was performed by Gerber and Hui (2013). In their study, aimed at studying the motivations of people to participate on crowdfunding platforms, they used an inductive research approach, by conducting interviews with campaign creators and funders following a list of questions. They interviewed both creators and funders and their motivations were the following.

Among the motivations for campaign creators, they found out that of course the first reason to get into crowdfunding is to raise funds, one of the reason being that they do not know other means to collect money from such a huge number of people in many different tranches. In addition to raising money, creators engage in crowdfunding to widen the interaction with backers and create with them a long-term relationship. Moreover, creators want to receive validation in order to increase their confidence in making a determined product or service and this behaviour is consistent with social cognitive theory. In addition, they want to replicate successful experience of others and hence they are motivated in creating a crowdfunding campaign when they see others doing it. The last motivation for creators that has been highlighted in the study is to expand awareness of work through social media. For what regards the funders, one of their motivations is to seek rewards: funders are usually people looking for

limited edition objects or just looking for very special products on which they believe their money will be well spent on. Also, they want to support creators and causes to which they somehow find related to and they feel consistent with their own identity. Funders are also motivated to engage and contribute to a trusting and creative community and to increase the connections with creative people.

It is also interesting to note the patterns of behaviour of both project backers and funders as investigated by Kuppuswamy & Bayes (2015). Backers tend to support a campaign with funds in the first and the last week of its funding cycle and the behaviour can be represented with a U shape graph. This behaviour works both for successful and unsuccessful projects and there exists some sort of deadline effect, which increases the amount of backers especially in the last day of the funding cycle. Moreover, backers are less likely to back a project once the target amount is reached even if it there is still time and the chance to do it and they are almost all one-time backers, meaning that they are people in the project funder's social circle and that they will not be pledging other projects residing in the platform.

Creating a crowdfunding campaign is a complex process that requires detailed planning and an accurate strategy but also instruments to communicate in the best way possible all the advantages and profit potential to viable investors.

Schwienbacher and Larralde (2010) have been some of the first researchers to have made a complete study of the phenomenon, by looking at the causes of its diffusion, on the factors determining its choice rather than going for other forms of funding and some other operational problems.

These authors identify 7 factors an entrepreneur has to take into account before using crowdfunding as a method of financing: the lack of pre-existing resources, the presence of risk, moral hazard and information asymmetry, the organizational form imposed by crowdfunding, control preferences of stakeholders, financing amounts required by entrepreneurs, the legal issues regarding equity issuance and multiple investors and the "wisdom of the crowd" argument.

The first factor, the lack of pre-existing resources, represents the most discussed one and also the main reason for someone to get into crowdfunding, as it represents an instrument able to fill the funding gap but also instrument that allows not only the financial contribution but also the personal skills contribution.

The second factor, the presence of risk, moral hazard and information asymmetry, is one of the strategic implications of crowdfunding, which allows spreading the risk over an unlimited number of individuals and the costs implied. As for information asymmetry, investors often do not have the same amount of information that project founders have, also for the fear of copyright infringements. The third factor, the organizational form, deals with the fact that investors are often more prone to giving money to no-profit organisations, as they provide better quality products and services even if at the disadvantage of quantity and are hence more quality-driven rather than profit-driven. The fourth factor, the control preferences, is about the conflicts of interest between owners and managers. Many authors, like Harth and Moore (1998) believe that control has to be held by one of the two and not by them jointly. In the case of crowdfunding, owners can be numerous and may have contributed to the project by a very small amount so it would be very uncommon for crowdfunders to have decision power over projects they have funded. Therefore, it seems quite trivial that in the end, the project owner will get all the relevant decision having power over its project.

For what regards the fifth factor, the financing amounts required by entrepreneurs, represents a very important factor because the higher the threshold of financing, the bigger will be the number of investors needed to fund the project.

The sixth factor, legal issues regarding equity issuance and multiple investors, is directly linked to the equity crowdfunding regulation of each country, where it exists. As we have seen in the previous chapters, equity crowdfunding regulation is present but it is still evolving.

The seventh discriminating factor is represented by the "wisdom of the crowd" argument, which states that "*a crowd can at times be more efficient than individuals or teams in solving corporate problems*" (Schwienbacher & Larralde, 2010, p. 12). Not only the crowd offers advices from a potential customer point of view, but it can also provide experience, creativity, and insights that could have not been clear at the beginning of the campaign.

Which information and advice can we get out of these discriminant crowdfunding factor described by Schwienbacher e Larralde? The instructions they provide are related to the first steps to follow and they are presented in the table below.

| Knowing how to communicate efficientli with Web 2.0, to create interest and influence users' choice | Leverage on the initial network of friends and families | Use information asymmetrie s by discouragin g the participatio n of poorly motivated investors | Understand and seek among investors the necessary competenci es for the growth of the project | Involve and stimulate potential funders to make them offer their contribute in terms of skills and creativity | Know the legislative framework in which to operare and the legal implications for founders and stakeholders (especially in equity-based CF) |

Source: Author's elaboration from Schwienbacher & Larralde, 2010.

An important study, realised thanks to the experience on the field and thanks to empirical observations provides us with a realistic framework but also an interesting operative guide on how to create a successful crowdfunding campaign. The research by Steinber, DeMaria and Kimmich (2012) has the main aim to provide aspiring campaign creators with a rich and useful advice and proposals in order to maximize the returns of their crowdfunding projects.

Prior to the creation of the campaign, it is important to make an accurate and realistic evaluation of the product or service that will be created or offered thanks to the campaign and it is also important to assess the creator and his team. Moreover, it becomes quite useful to look at some of the building blocks of several successful campaigns over the internet, which according to Steinberg (2012) are:

- A solid idea and sellable vision for the product or service;
- Careful pre-planning and preparation;

- A strong presentation, ideally coupled with high production values;
- A reward structure that appeals to the project's audience;
- Ongoing outreach to backers;
- Effective social media, marketing and PR strategies;
- The presence of a popular pre-existing brand or personality that is attached to the project or an existing audience for the property.

The authors also stress out the important point that in the decision making process it is also crucial to choose the right crowdfunding platform, by taking into account also the different fees and project topics that characterise the platform.

The framework provided by Steinberg is divided into four progressive phases:
- Ideation and planning of the campaign (Pre-Launch Planning)
- Actual launch of the campaign (Launch Program)
- Management and evolution of the campaign (Post Launch Management)
- Gathering of the feedback and developments after the completion of the initiative (Post-Completion Follow Up).

The first phase, Pre-launch planning is of critical importance, as it represents the moment in which the positioning of the products or services is made, common goals and visions are created and the target backers and potential consumers of the concept to be developed are identified. It can be useful to study and analyse past successful campaigns in order to study weaknesses, key strength points, understand management processes and evaluate the target of financing with respect to the entity of the project.

The initial phase is also the best moment to choose the desired time span of the campaign: by setting an interval very close to the launch, the success rate of the campaign could be limited as not many investors could not be activated and interested in the project so soon.

Before moving to the next phase, the Launch Program, it is also important to have a first group of backers around the project and trying to make other people interested is also quite useful, especially the active seekers but also all the friends and family.

Pre-Launch Planning
(ideation and planning of the campaign)

Launch Program
(launch of the campaign)

Post Launch Management
(management and administration of the campaign)

Post-Completion Follow Up
(feedback, analysis of the results, consultation)

The family network represents the starting point of the project backing but it is also the core of people that are most reliable in the initial financing of the project as they mainly rely on prior trust relationships in order to fund projects.

The Launch program is decisive for the making of the communication strategy and interaction with the backers in order to create a connection and further interest but also to describe in the best way possible the created project. The essential communication means thanks to which the project is sponsored are mainly two: a video and a detailed description of the project. The video is one of the most persuasive tools that campaign creators have in order to involve a broad audience of potential investors and hence it must be very effective. In order to maximise its efficacy, the video has to make a significant impact on the viewer on the initial 15 second, it has to be comprehensible for a broad audience and it has to be short but has to provide all the information about the project very clearly.

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For what regards the project plan, it is the key instrument that is made to incentivise the financial contribute of the investors: it has to describe the project very clearly, and represent the validity of the product or service of the initiative but also the reason for which the crowd cannot help but contribute to the campaign.

These important tools represent important means through which also passive listeners can be attracted by the project and can deepen their information on the campaign, the team of creators, the mission and the main goals and usage of funds. For the active seekers on the other hand, these tools are helpful in gaining information on which they are more interested and to which they give more weight when deciding whether to fund one project or another.

For the authors, also the definition of rewards plays a key role in this phase. It is quite a complex process to decide and measure the value of a reward as many variables have to be considered, like the intrinsic value of the prototype, which includes planning fixed costs, tests, marketing and production, the threshold and an estimate of the symbolic value for the backer. These activities are needed when dealing with a pre-order crowdfunding campaign but when dealing with other types of campaigns sometimes rewards are very different from the product offered and they only offer symbolic objects like gadgets, thank-you notes, or by inviting backers to events or by writing their name on the acknowledgements. Rewards are also different depending on the amount donated and are usually organised in waves, the more someone donates, the more valuable will be the reward.

The third phase, the Post Launch Management is the process by which the campaign is managed and controlled, developments and challenges are taken care of and it is also the phase in which implemented strategies are changed or reinforced and it is also here that feedback are received and used to correct certain behaviours. Steinberg mainly highlights three essential operations needed to ensure the success of the campaign at this stage.

The first operation to be done is to give constant updates of the information given to project backers. It is important to maintain a relationship with the people who have helped project creators in reaching the desired funding threshold. A constantly updated campaign will increase the chances of being known as a well marketed

campaign and could give the chance to get more financing thanks to the network effects generated as also stated by Mollick (2013) and individuated as social capital.

The second crucial operation to make is to constantly stay connected and to keep in touch with the backers and the community of the platforms: forums and blogs are great places too where crowdfunders can exchange opinions, share ideas, give advice and develop a network of future backers.

The third operations to be done is to keep a high level of concentration throughout the whole process, which is necessary to avoid mistakes and to deliver a high quality service or products.

Once the campaign is over, successful or not, it is time for the Post-Completion follow up phase. It is in this phase where feedbacks on the campaign, considerations on the project and opinions are gathered and it can represent a way for testing the involvement but it also gives important data on how to possibly deal in the future with other campaigns and projects. This phase is very interesting because we can have positive exchanges of experiences and knowledge through direct and indirect statements. A great example of this is given by the "creator Handbook" of Kickstarter.

Not only the success of a campaign but also the failure can be useful if taken as a lesson thanks to which creators can understand weaknesses and errors that have been made. The sharing of this knowledge is crucial and important for the development of crowdfunding itself but also for the interaction among users and the creation of network synergies.

4.2 Crowdfunding Investors and Social Medias

4.2.1 Scientific research and social media: how innovations are diffused via the web

As we have stated in the previous chapters, there is often a general misconception that it can be extremely hard for a scientific project to reach out the crowd and generate the funding needed to complete a crowdfunding campaign. Research on the topic however demonstrates that the probability of creating a successful campaign

depends on the amount of crowd that is reached through social media and offline channels rather than the topic of the project. Creating a campaign is only the starting point of the creation of a relationship between the scientist and the crowd and according to Wheat et al. (2012), "scientists who spend time nurturing these relationships (with the crowd) and cultivating new ones will likely experience rewards beyond monetary gain. The true potential of crowdfunding lies not in raising funds for conducting research, but in the opportunities for public outreach and science education engendered by this type of funding model". Hence making science available also to non-experts could be a great opportunity for the entire crowd, creators and funders included. This business model hence would only create chances to increase transparency and public involvement and creating bonds among people regardless the prior scientific knowledge.

In support of the concept that scientists have to engage broad audiences in order to have successful crowdfunding campaigns we have an important contribution by Byrnes et al. (2014). A scientist has to firs build an audience for their project and it would be more helpful if they did it long before the beginning of the crowdfunding campaign through Social Media and blogs. Once the campaign has started, the scientist has to put a lot of effort in keeping the connections with the crowds and science, by sharing information via email or with Facebook posts. This engagement attracts the audience to the project, helps creating a larger network but also increases the chances of getting higher amounts of funding. In their analysis, Byrnes, Ranganathan, Walker & Faulkes (2014) show that the network sizes of the social Medias of scientists increase project's success. However, it is not only with the help from family and friends that the network enlarges hence the scientist has to grow his audience by using Twitter, by posting on blogs, contacting local Radio stations, by sending emails to organisations and by contacting the press. Additional forms of outreach may also include involvement with local partners, giving public lectures and speeches but also involving universities. The amounts raised for research thanks to crowdfunding are still relatively small with respect to those that can be raised by public funding but future developments may turn crowdfunding in the major method of financing for young scientists and researchers. Another important conclusion by Byrnes et al. is that "to be competitive in the new and dynamic crowdfunding

environment, universities must find ways to develop and enrich policies and practices that foster active outreach and engagement by their faculty". The interaction and the connection of crowdfunding, scientist, researchers and universities could benefit all of them not only financially but it could create public science literacy, public support for science and new networks. Besides making an effective video and a detailed description of the project as we have seen in the previous paragraph, giving updates on the campaign and up-to-date information is necessary in order to succeed. A study by Xu et al. (2014) reveals that updates are critical for a successful campaign. In their research, they sampled 8529 campaigns from Kickstarter and they found out that the chances of success of a project without any update were 32.6%, percentage that increases up to 58.7% if updates are made. They divided updates according to the function they had and the taxonomy was the following: social promotion, progress report, new content, reminder, answer question, new reward and appreciation.

Figure 9: Distribution of updates in the seven themes.
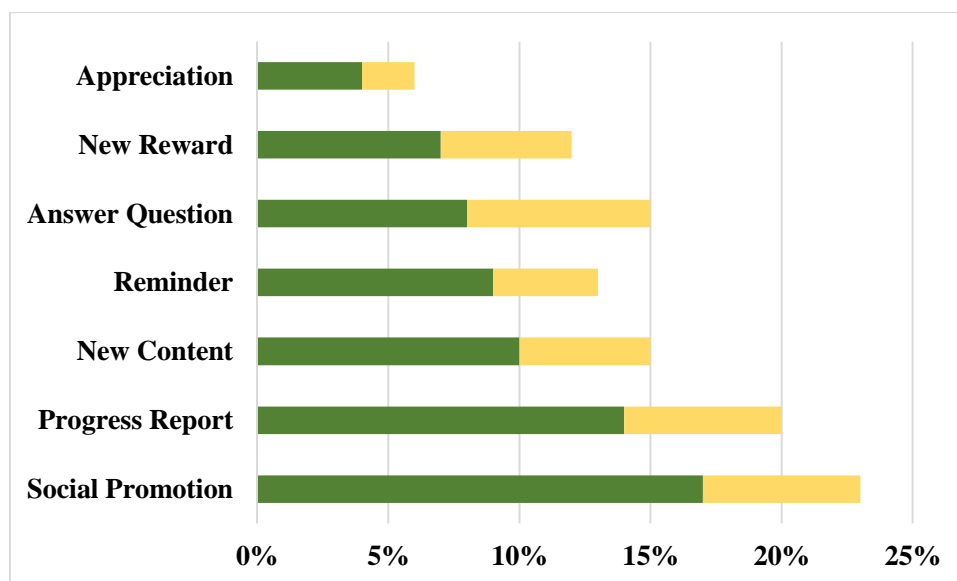
Source: Author's elaboration from Xu et al. (2014). The green lines indicate the percentage of success of the update and the yellow lines indicate the percentage of unsuccessful updates on that topic.

Social promotion, the most common type, represented about 23% of the updates and these were used to encourage backers in spreading the project on social media. Progress report was the second most used update, representing 20% of the total, which was followed by New content and answer question (15%), Reminder and New

Reward (13% and 12%) and last Appreciation (6%).On average, successful campaigns had more updates in many different themes and different time phases with respect to those who turned out to be unsuccessful. In addition, when the updates regarded the addition of a new reward, they were more likely to increase the success of a project with respect to updates themed as new content. Hence revising reward levels after a campaign is launched is a more effective strategy than revising the content. The success of projects was also positively correlated to the length of the update itself and it was negatively correlated with the length of the project's description (Xu, 2014).

For what regards the timing instead, the initial time of the campaign is the best to promote the project with updates.

Most of the problems related to the poor success of campaigns resides in the lack of updates given by the project creators. About this topic, crowdfunding platforms still do not provide many help and guidelines are almost inexistent on how to successfully create updates about one's project. Platforms usually provide embed links thanks to which creators can share their webpage on blogs, emails and social media but this may not be enough as the actual content of the message they are sharing the link with is what really matters. It could be helpful for the future, in light of this paper, to implement tools and prompts in the crowdfunding platforms to allow for better advertising strategies through the updates.

CHAPTER V

THE CAMPAIGN PROPOSAL: LET'S BITE THE DOG LYMPHOMA

After investigating on the crowdfunding general literature, its regulation, the most important crowdfunding platforms for scientific research and the actions and strategies behind a successful crowdfunding campaign we are ready to go deep into our case study.

Our work consists in developing a crowdfunding project for a group of researchers from the University of Padua and to design a marketing and communication campaign in order to promote the project and to ensure that it will be designed for success. This project is only a draft but the chances for its development and realisation are quite high given the strong collaboration between the Department of Economics and the Campus of Agripolis.

The group of researchers is the one led by Luca Aresu, Associate Professor of General Pathology and Veterinary Pathological Anatomy at the University of Padua.

Professor Aresu, is located in the campus of Agripolis in Legnaro (PD), which hosts the Department of Veterinary Medicine as well as the Department of Biomedicine, the necroscopy and hospital building, the Department of Land, Environment, Agriculture and Forestry (TESAF) and the Department of Agronomy, Food, Natural resources, Animals and Environment.

The main areas of research of professor Aresu are lymphomas and tumours found in dogs and how they develop and grown in these animals.

In the first place, we thought that the most suitable platform for hosting the project would have been Eppela, mainly because the platform is increasingly becoming the host of many scientific research's projects and it is also the platform where most of the Universities have turned to in order to promote their projects. However, after conducting an interview with Professor Aresu and his team, we came to the conclusion that the 40 days' threshold for hosting a campaign provided by Eppela would have been to restrictive for the project and it could have resulted in a

detriment to the campaign. Hence, by interviewing the team and by better understanding their needs and wills, we decided to create a project to be uploaded on the platform Buonacausa.org, which does not require any fee for making the project and can have pledging times longer than 40 days.

After a brief explanation of the interview performed, we will cover the phases of the campaign creation, following the framework provided by Steinberg, De Maria and Kimmich.

5.1 The interview

To get as much information as possible, we performed a structured interview with the professor and his research team and we tried to understand their needs and more specific details for the development of the crowdfunding campaign. The interview lasted about 40 minutes and it was composed of 18 questions (which can be found in the Appendix together with the answers provided). Prior to the interview the team was contacted by email, in order to give them a background of the thesis, its aim and we provided them with the list of the interview questions.

In order to formulate the interview question, a number of secondary data was used mainly because it represents a cheap and time-efficient method for acquiring information. The main sources used were books and publications, electronic articles and internet databases.

5.2 The Pre-Launch Planning

By looking at the most successful campaigns in the field of research that have been explained in Chapter III, the key requirements for an effective crowdfunding campaign can be easily grasped. The crucial steps before launching a campaign are a clear project description, a scrupulous target audience and an essential but explicative video pitch, a detailed budget and a crowdfunding platform suitable to the needs of the project creator. Moreover, a detailed reputation infuses trust in the potential backers, appealing rewards increases the link with the funders and lastly a powerful marketing plan define the success rate of the campaign. It is also important

to look at other similar successful campaigns to get hints on how to develop the project. In fact, some choices like the video and the type of the rewards have been influenced by the campaign created by Marcela Uliano, a computational biologist who created a crowdfunding campaign to stop the invasion of the Golden Mussel in the Amazon.

5.2.1 Description of the project: Let's Bite the Dog Lymphoma

The aim of the project, which was named Let's Bite the Dog Lymphoma by Professor Aresu, is to identify the driver mutations that are responsible for the development of the lymphoma in dogs. Thanks to the money raised by the crowdfunding campaign, the team of researchers would be able, thanks to kits and genome sequencing, to understand not only the role of the mutations in the pathogenesis but also if there are any linkages between lymphomas and certain races of dogs, certain age ranges and sex of the animal.

The second step of the research would be to use the identified mutations as biomarkers in the blood in a predictive way in order to understand whether a certain dog may have a genetic predisposition to the lymphoma or not.

Lymphomas are a form of cancer that affects the immune system and more specifically it affects the lymphocytes, white blood cells. There exist two main types of lymphomas which are Hodgkin's or non-Hodgkin's. Lymphomas develop when lymphocytes grow and develop uncontrollably into tumours, crowding out healthy tissues and organs. There are two main forms of lymphocytes: B and T cells. Usually, most cases of lymphomas in dogs involve the B-lymphocytes. Even if they are quite rare in dogs, lymphomas are more prevalent in Boxers, Golden retrievers, Saint Bernard, Basset hounds, Airedale terriers, Scottish terriers, and Bulldogs.

The cause of the creation of the lymphoma are still unknown and that is why scientists put a lot of effort in researching its causes and in understanding its development to hopefully find cures for the future. Clinically, the current treatment for canine dog lymphoma includes dose-intense multidrug chemotherapy but even if it improves the duration of remission and prolongs survival of sick patients, the

disease is essentially incurable[8]. Research show that vaccines combined with chemotherapy significantly prolong remission and survival showing that more detailed biological research is needed on the topic.

Lymphomas are the most common form of blood cancer and they represent 55,6 % of all blood cancer. The funding would allow the team of researchers not only to study more deeply the mutations which are characteristic of the dog lymphoma but it would also allow them to create kits or prototypes, both diagnostic and therapeutic, which could then be also utilized and developed by private companies through financing. A paper will be written to show and explain the results to the target audience but also seminars and conferences will be held both at a national and international level. In addition, as the dogs' immune system is very similar to that of humans, successful research in dogs could turn out in successful cures even for sick human patients.

5.2.2 The Target Audience

Even if the research will deal with specific medical issues, the target crowd of the campaign will not be made up of scientist. The target of the campaign will mainly be composed of dog and cat owners, animal lovers and people which are sensitive to the health and well being of animals in general. The scope of the campaign would hence include people of any age, sex and with interested connected to the protection of the environment and animals. Of course dog owners of the dogs' races most attached by the lymphoma would be the most attracted by these type of campaign but given the fact that it is quite a common topic but the target could still include any person at a national level.

The number of cats and dogs present in the Italian family houses is around 60.5 million out of which more than 6 million are dogs and more than 7 million are cats.

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[8] Source: http://sir.miur.it/index.php/finanziati/index retrieved on 13/02/16

Total Pets	60.466.000
Dogs	6.950.000
Cats	7.480.000

This data clearly shows that a big slice of the Italian families loves animals and could consist in potential backers for the crowdfunding campaign presented. The report Assalco-Zoomark 2015 clearly shows that over the years, the dog has become a key element of the family unit and hence by targeting not only animal lovers but also dog owners could really increase the success rate of the campaign as a whole.

5.2.3 The Video Pitch

The video is the showcase of the project and it is essential to grasp from the beginning the trust and the attention of the public.

The team of Professor Aresu would like to create a video that is essential and as explicative as possible. The video should affect the community immediately and for this reason, the team believes that by explaining their project with a cartoon video, they would reach a very big amount of people. An animated cartoon could be much more effective than using real images: they would like to avoid being too romantic or too much scientific and they believe that a cartoon would make a great compromise between the two options.

In the video, after a brief introduction of the team and the university, it will be explained what is DNA, what are the chromosomes, what is a mutation, what is a lymphoma and how it originates and then they would show each mutation associated to the different dog breeds that are usually characterised by the presence of the lymphoma. Then, there would be the call to action where it will be explained why the team is looking for funds and in the end, there would be the link to the page where to donate.

The video however should be less than 3 minutes in order to be as impactful as possible.

Opening	Introduction	The Project	Call-to-action	Closing
Pictures and logo of the project	Presentation of the team to the community	Presentation of the project	Ask the reason why funding is needed	Link to the page of the project
5 sec	30 sec	1 min 20 sec	1 min	3 sec
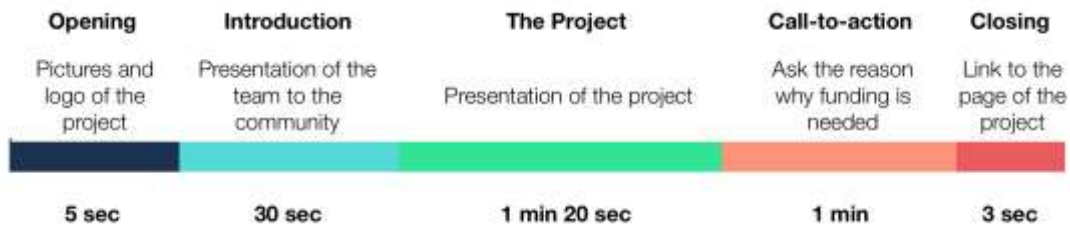
Source: Author's Elaboration from Eppela's Guide on how to create a crowdfunding video.

The first part of the video should show either the picture or the logo of the project for about 5 seconds, for the next 30 seconds there should be a brief introduction of the team to the community of backers and the following 80 seconds would be the most important part, where the project is briefly presented in the clearest way possible. The next minute would be dedicated to the call-to-action, meaning that in this time frame the project creators have to ask for funding and state clearly why someone should back them. The closing part instead, should show the link to the projects' webpage where the viewer will have the possibility to fund the project.

5.2.4 Budget and duration of the campaign

Regarding the budget, during the interview the team suggested that the necessary amount for completing the research would be €30.000.
The amount will be spent as follows:
- Kits – €7.000 €
- Cell testing Reagents – €7.000
- Materials – €4.000 €
- Equipment – €10.000
- Unexpected costs and rewards – €2.000

Given the national scope of the project and given the very high attractiveness of the project even for the non-dog owners we believe that setting the pledging time to 3

months would be the best strategic choice to make even if similar projects have raised the target amount in 30 days. This is mainly justified by the newness of the team to the topic of crowdfunding and to the extremely high amount to be backed.

5.2.5 The Platform: Buona Causa

As previously stated, due to the increased scientific orientation of Eppela we initially thought that it would have been the most suitable platform for the project, given its international crowd and also given its extremely user friendly interface. However, after performing the interview with Prof. Aresu and his team, we got to the conclusion that it would have been too risky to try and raise € 30.000 with only 40 days available for the promotion of the campaign. Moreover, Eppela holds 5 % of the total sum achieved and it applies small fees to all the donations which the team though that it was money that could be instead saved and used for the research.

After a detailed analysis on the available platforms, we decided to turn to Buona Causa. Buona Causa is an Italian donation platform of civic and ethic crowdfunding dedicated to project which are aimed at helping civic projects which need sustain. The platform allows to organization, public institutions, supporters and activists to cooperate on crowdsourcing initiatives and projects aimed at improving social value. The platform was founded in 2011 and it is managed by a no-profit organization, Treewave. The platform does not hold any kind of fee on donations and the projects are only donation and reward and most importantly they are "keep it all" types, meaning that even if the target is not reached, project owners will cash in all the donations.

This platform hosts a very high number of projects (1.000) and it presents a very high average user participation if compared to other platforms of the same type (more than 4.000 users involved with respect to Commoon with 13 users involved and Pubblico Bene with 200 users involved).

The platform asks immediately for a subscription even for the users who are just browsing for projects to fund. This allows for more cohesion inside the network and, thanks to the identity verification, it allows for a greater transparency among the other participants in the community.

Buona Causa does not have an examining commission but it has the right to delete all those contents that are not suitable for publication.

Another important feature of this platform is of a more practical nature and it relates to the method of collection of funds. Eppela was only allowing for credit card as a mean to collect payments but Buona Causa allows both credit card and bank transfer as a way to collect the donations, hence making it easier for the team of researchers to collect the funding for their university project.

5.2.6 Reputation of the Team

The research team is composed by Professor Luca Aresu, the technician Serena Ferraressi, Post PhD student Massimo Milan and other people who are not specifically related to the team but they do help the research like Mery Giantin and other technicians from the Department of Pathological Anatomy. The team is hence composed by 3 main members, which sees Professor Aresu as the main member, and 2 collaborators.

Professor Aresu mainly does research as a pathologist specialising in immunology and kidney dysfunctions in dogs. Now he deals this topic mainly at a diagnostic level. Moreover, he is responsible and manages a European Diagnostic Center of dogs' kidney pathologies. Professor Aresu got a PhD in Veterinary Anatomic Pathology (cum laude) from the Department of Animal Pathology, Faculty of Veterinary Medicine in Turin.

In 2008, Professor Aresu started researching the dog lymphoma together with Massimo Castagnaro and with their project proposal; they won a PRIN (Progetti di Rilevante Interesse Nazionale).

A PRIN is a program created by MIUR which aims at sustaining research by providing funding to Universities. Any researcher or professor from any field of research can participate and present their projects of any topic. The funds are assigned according to three key requirements which are co-financing, group research and peer review.

In this PRIN of 2008, named "Study for the characterization of canine lymphomas and leukaemia: morphology, immune-phenotype, clonality, gene expression profile

and proliferative and invasion markers.", Professor Aresu had the role of a Co-investigator and together with the other team members (Massimo Castagnaro, Fulvio Riondato, Fabrizio Fabris and Stefano Comazzi) they were able to get € 128.000 for their research over a 3-year period.

In 2008 moreover, Prof. Aresu received a grant ex60% (which is a funding provided by the University taken from a fund provided by MIUR aimed at sustaining local research programs) for the project "Characterization of Biomarkers in Canine and Feline Mammary Tumours and he also received another one in 2009 for the project "Animal Model: canine lymphoma and mammary tumours" and in both he had the role of Co-Investigator. Another important funding received by professor Aresu in 2015 has been that of the SIR, from which thanks to his project "An Integrative Analysis of Methylome and Transcriptome in Canine Diffuse Large B-cell Lymphoma" he received more than €520.000. In this project, in which he had the role of Principal Investigator, his aim was to study the base mechanisms linked to the dog lymphoma: genetic mechanisms, epigenetic mechanisms, mutations and race predispositions.

For what regards private funding, Professor Aresu received € 2.035 financing in 2010 by the Ghent University for the project "Analyses of kidney biopsies of 11 dogs under pharmacological treatment" and € 8.500 funding from Virbac S.A (a French company dedicated to animal health) for the project "Morphological analyses of 16 kidney biopsies". In 2012 then, he also received € 6.235 from Urodelia (another French company which creates kit for the cure of tumours in dogs) for the project "Measurement of minimal residual disease using real time PCR in canine lymphoma".

Serena Ferraresso, the postdoctoral researcher, has published a total of 56 papers, which have been cited 276 times. Massimo Milan has also made 54 publications which have been cited 302 times. Luca Aresu has also made 66 publications and his works have been cited 492 times.

Year	Type of funding	Topic of the research	Amount received
2008	Public – PRIN	Study for the characterization of canine lymphomas and leukaemia: morphology, immune-phenotype, clonality, gene expression profile and proliferative and invasion markers.	€128.000
2008	Public – Ex60%	Characterization of Biomarkers in Canine and Feline Mammary Tumours	N/A
2009	Public – Ex60%	Animal Model: canine lymphoma and mammary tumours	N/A
2010	Private – Ghent University	Analyses of kidney biopsies of 11 dogs under pharmacological treatment	€2.035
2010	Private – Virbac S.A	Morphological analyses of 16 kidney biopsies	€8.500
2012	Private – Urodelia	Measurement of minimal residual disease using real time PCR in canine lymphoma	€6.235
2015	Public - SIR	An Integrative Analysis of Methylome and Transcriptome in Canine Diffuse Large B-cell Lymphoma	€520.000

This clear picture of the achievements and of the funding received by the professor Aresu over his career and the relevance of the scientific production of his team create in the potential backers an increased sense of trust. Moreover, by providing a detailed track of the team's background and academic recognitions and awards, the perceived risk of fraud and poor trust are lessened by a great amount.

Past success and proven records of accomplishment of achievements also increase the likeliness of backers to donate greater amounts of money and more likely to invest.

Team Member	N° of Papers Published	N° of Citations
Serena Ferraresso	56	276
Massimo Milan	54	302
Luca Aresu	66	492

5.2.7 Rewards

Rewards for the project have to be chosen carefully and they have to be creative, also in the way in which they will be described to the potential backers. They have to be also inherent to the project, personalised and unique, besides making participate the backer to the project actively.

Defining rewards is very important and they have to be chosen very carefully. They have to be not only proportionate to the amount donated and they should not be to high.

The platform that will host the project, Buona Causa, even if it is a donation platform it still allows for rewards to be set and chosen.

Hence we decided to put three main levels of donation and to assign a reward to each level:

- With a donation of € 5 the name of the backer will appear among the acknowledgements in the final paper produced by the team at the end of the research;
- With a donation between €5 and €20, each mutation discovered will be named after the dog of the donor or after the donor itself;
- With a donation of € 20 or more, not only will the mutations be named after the dogs of the backers but also the backer and his dog will be invited to the conference where the research team will explain the results obtained from the research.

These rewards will not only get the attention of potential backers but they will also further engage the persons which are contributing to the project.

Table 9: Summary of the project's rewards.

Donation	Reward
Donations up to €5	The name of the backer will appear among the acknowledgements in the final paper produced by the team at the end of the research
Donations between €5 and €20	Each mutation discovered will be named after the dog of the donor or after the donor itself
Donations exceeding €20	Each mutation discovered will be named after the dog of the donor or after the donor itself and they will be invited to the conference where the research team will explain the results obtained from the research

Source: Author's own elaboration.

The idea to give the mutations a name of the contributor's dogs came from the project presented by another researcher, Marcela Uliano, who in her project was rewarding her backers by naming each mutations, discovered on the mussels the name of a contributor. This type of reward turned out to be really successful and helped her reaching her target pledge for the project.

5.2.8 The creation of dedicated social media and the marketing plan

A crucial part of the creation of a crowdfunding campaign involves the collaboration and the participation of the crowd. In this matter, social media are a crucial point to be developed prior to the launch of a crowdfunding campaign. Social media represent an incredibly powerful tool to attract the crowd and to raise their support. The main channels on which the campaign will be marketed are:

- Facebook and YouTube;
- Direct email;
- Blogs;

- Press Releases;
- Events.

In the interview, we tried to investigate whether the team had been involved or was part of a scientific community and whether they were active on social medias.

The team does not write any blog nor they belong to a dedicated community but all the 3 main member are present on Facebook, having in total about 851 people that could form the initial community to which the campaign could be shared immediately.

The first step is of course the creation of the webpage on the crowdfunding platform: for that, the team would need a picture of the project which should recall the main theme of the project, representing not only the professor but also the dogs breeds affected by the lymphoma.

Figure 11: Banner image for the project's webpage.

Source: Author's own elaboration.

The next step is to create both a Facebook page and also a YouTube Channel. The name of the Facebook Page will be called exactly like the project itself, "Let's Bite the Dog Lymphoma" and it will be used to share updates, videos and information regarding the development of the crowdfunding campaign.

As mentioned in Chapter IV, updates that are mainly promoting the campaign are the most successful together with those explaining the progress of the project. This is why the posts will be mainly done by following these guidelines as to have the most success out of each shared content. On YouTube, a channel with the same name will be created, and here we will upload the main video of the campaign but also videos about the conferences, meetings and updates regarding the development campaign.

Moreover, for any kind of question that backers may have or to send direct emails, an email dedicated to the project, *letsbitethedoglymphoma@gmail.com* will be also created. Thirty percent of the initial donations will come from people very close to the team. It is hence critical to have a strong initial network before launching the campaign[9]. Direct email is a very powerful tool as it enables a direct contact with the potential backers.

Moreover, all the updates created have to be easily shareable in order to have the help from anyone with just one click. In order to do so, during the interview we asked which hashtag the team would have created to fully engage the crowd and they decided to choose the full name of the campaign #LetsBiteTheDogLymphoma, in order to be immediately recognised by the active listeners in the population.

Bloggers are also important in increasing the involvement of the crowd. At the beginning, it could be crucial to try to get some of the blogs regarding the topic of the campaign to talk about it. Even though the campaign would be targeting a very huge target crowd, niche contributors like scientists and researchers cannot be excluded. Hence, during the launch of the campaign we will try to involve blogs like the following to have them share the campaign:

- Moebius (http://www.moebiusonline.eu/), which deals with the main scientific discoveries and stands for the diffusion of science;
- Scienza in Rete (http://www.scienzainrete.it/), which promotes science among non-scientists;
- TGVet (http://tgvet.blogspot.it/), which deals with the most important updates regarding animals.
- DogAround (http://www.dogaround.it/blog), blog dedicated to dog lovers;
- PetPassionTv (https://www.petpassion.tv/blog/), created by Purina, this blog shares exciting articles regarding dogs, cats and animals in general.

Moreover, in order to drive traffic to the campaign's website, Facebooks Ads are going to be used. During the interview, the team agreed to make an initial investment to boost the views and hopefully increase the contributions to the campaign. This service provided by Facebook will allow the team to target the best prospects using

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[9] Source: http://succeedasyourownboss.com/how-to-market-your-crowdfunding-campaign/ retrieved on 14/02/16.

gender, personal interests and other socio-graphics. By investing only € 100 during the central days of the campaign during which the engagement of the crowd touches its low, the Facebook Ads tool allows to target specific groups of people with a limited budget and promote the updates posted.

As well as creating engagement on social media, the campaign will be promoted also through local newspapers, local companies and national radio.

As we will later see in the operational plan, interviews regarding the project will be released to the local newspaper "il Mattino di Padova". Professor Aresu has already released two interviews on the newspaper regarding his success in academia and the public funding he received so the crowdfunding campaign could be a great topic to create another article on.

Even if conferences would also be organised during the campaign to promote the project, we believe that, in order to fully share the campaign an all the media, even local radios should be targeted. This is why we thought that it would be a great chance to contact Radio 105 and Radio Stonata to promote the project. This because these two radios are hosting programs entirely dedicated to crowdfunding (like 105 Smart Up) where they talk about the most influential campaigns at a national level.

Figure 12: Map of dog breeders located in the Veneto Region.

Source: Authors' elaboration from http://www.allevamentirazze.it/Index.asp.
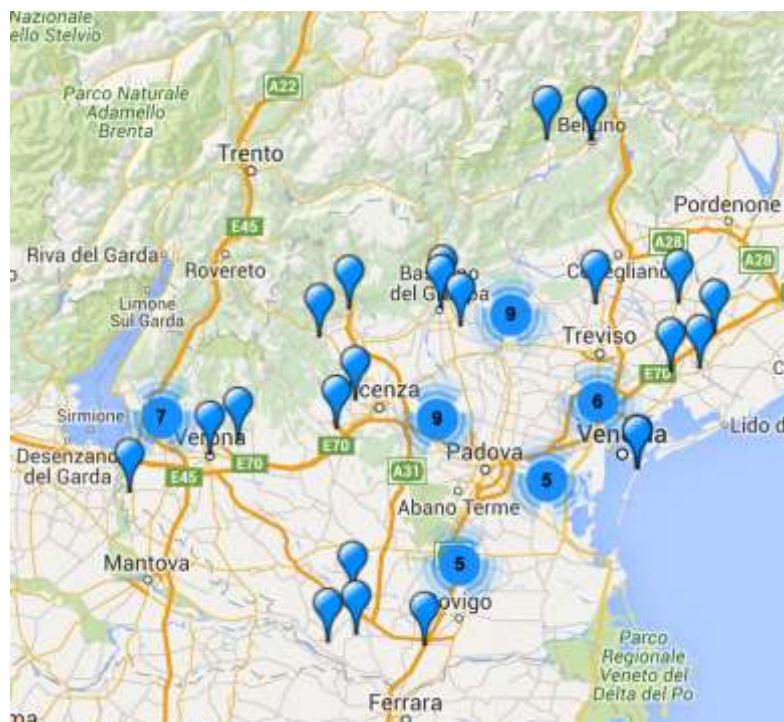
Also, given the topic and the target of the campaign, we believe that local pet food companies operating at a national level (like Arcaplanet and Maxi Zoo) and local dog breeders (in the Veneto Region as a beginning) would make great places where the campaign could be marketed and these institutions would also create a great starting point from which to get potential backers.

Since the lymphoma develops mainly on certain types of dog breeds we decided that it would be best to promote the crowdfunding campaign during events that are linked to Boxers, Golden retrievers, Saint Bernard, Basset hounds, Airedale terriers, Scottish terriers, and Bulldogs

We hence individuated some dates in which there will be dog shows in the national territory like the "Esposizione Internazionale di Parma" on March 19, the "National gathering of retrievers" on April 23.

Moreover, students from the University of Padua will be involved in making a flash mob around the city centre of Padua on June 10 2016, in order to explain the topic of the campaign to the citizens and to further engage the communities. Volunteer students will be asked to dress up like dogs and genes and to put up a little show to explain what is the lymphoma and the reasons why they should fund the campaign of Professor Aresu.

Table 10: Summary of the Channels used to promote the campaign.

Channel	Description
Facebook and YouTube	Let's Bite the Dog Lymphoma
Direct Email	letsbitethedoglymphoma@gmail.com
Blogs	Moebius, Scienza in Rete, TGVet, DogAround, PetPassionTv
Press Releases	Il Mattino di Padova
Events	Flashmob in the city centre

Source: Author's own elaboration.

5.3 The Launch Program and Post Launch Management

Once the planning is done and once all the social media are ready it is time to actually launch the campaign. During this period, the main objective is to attract passive listeners as well as active seekers to the project's webpage. If the planning phase has been performed well and if a community has been built prior to the launch phase there should be an active and enthusiastic crowd ready to fund the project and to share it with their own communities through social media. Updates should be made very frequently on each channel because every day is a chance to get additional funding and additional backers as well as stated by Steinberg (2012): "not a day should go by that you (and your friends and partners) aren't updating, tweeting, posting news, calling on prospective patrons, handing out promotional cards, or any combination of the above in order to help promote your project".

Backers are extremely important and they should be treated as the most important customers. Any comment or any question asked by them has to be addressed as soon as possible.

Moreover, in order to avoid mistakes and to organise everything in the best way possible, it is crucial to create an operational plan for the development of the project where there are listed all the steps necessary to be successful. The following Gantt chart has been created to highlight the main steps and the most important activities to be done in order to achieve the wanted success.

Also, during the Post Launch Management it is important to create events, make constant updates regarding the developments of the campaign, to keep connected on the internet and on all the other media.

Table 11: Gantt Chart of the crowdfunding campaign "Let's Bite the Dog Lymphoma"

Registration on Buona Causa and draft of the campaign

Decision of the duration, budget and making of the video

Description of the project and background of the team

Decision of the rewards

Creation of the Facebook Page

Creation of the YouTube Channel

Upload of the final video in YouTube

Preparation of the image of the campaign

Decision of the day of Launch

Press release to be shared with "Il Mattino di Padova"

Direct Mailing to announce the launch of the campaign

Let's Bite the Dog Lymphoma Launch

First Post on Facebook

Press Release is sent to local newspapers

Contact with Arcaplanet, Maxi Zoo and local dog breeders

Answer the comments and add images to the camapaign webpage

Esposizione Internazionale Canina di Parma

Posting of updates on Facebook, University mail and website

Share the articles of the media who shared the project

Post updates on Facebook, answer emails

Contact with the bloggers to share the project

National Gathering of Retrievers

Share the project on the national radio

Send further emails to get more backers

Informative conference at the University to explain the project

Remind it is the last week available to give contribution

Remind on all channels that the campaign is about to be over

Flash Mob organised by students to promote the project

Conclusion of the campaign, send thank you emails, Facebook post

Send rewards

From now on, provide constant updates

Purchase of the necessary materials

Review and beginning of the project

Production of the final paper

Source: Author's own elaboration.

5.4 Post-Completion Follow up

Once the campaign is over, it is time to send or create the rewards, gather all the feedbacks received from the backers, should they be positive or negative and out of this, the team should be able to either make better crowdfunding campaigns in the future or they could use the network created during the campaign to let the community know more about their work and what they do.

Of course it is in this phase that the team would actually start working on the project and it is crucial to post updates regarding the evolution of the project and all the regarding information. As we said, the outcome of the project would be to produce a paper regarding the dog lymphoma and to make a series of conferences to explain the results.

During the interview, Professor Aresu highlighted the fact that for him, there should be more cooperation between what is done inside the University (by professors, researchers, PhD students and post-docs) and the population outside. Studies done should be made more public also to create a bond between the population and scientists. He believes that there should be an ongoing conversation in the population both as public dissertation and as scientific research, but also as search for funding from the communities and a crowdfunding campaign could be the starting point to create this connection.

CONCLUSIONS

Crowdfunding has seen huge improvements already in the US with the creation of platforms in a lot of countries and now Italy has gone even further with its digital agenda for the start-ups that includes crowdfunding. Nations that are willing to overcome their socio-economic challenges like unemployment and declining GDP are looking at crowdfunding as a possible and applicable solution. Moreover, innovation and technology are the most important aspects to be competitive at a global level and crowdfunding allows to access new ideas and play an important role in acquiring unique resources.

The real power of crowdfunding is the ability to involve emotionally and align to the interests of the project and to start a challenge. Crowdfunding creates a new kind of active participation, a participation that goes beyond the simple "like-ing" of something on Facebook, where people click a button to indicate support. Crowdfunding platforms lead to a more mature engagement, creating conversations between entrepreneurs and their investors and, as we have seen, even between scientists and "patients". This creates a new kind of model in which the investor does not only have a financial stake in the success of the idea, but also an intrinsic connection with its core values and the motivations behind the project.

Crowdfunding is still at the initial stage of the business, and it has still a lot of room and time to develop.

The growth of equity crowdfunding in Italy and in the US will constitute an important mechanism for the economic recovery of Europe especially as a recent research indicates that 80% of job creation comes from small and medium enterprises (SMEs)[10]. Make capital available to SMEs and entrepreneurs is crucial for European economic recovery.

However, in order to do so, crowdfunding projects must be successfully shaped they need to have a clear strategy, a reasonable and accurate target, be uploaded in the platform more suitable to the considered project, develop engaging and attractive rewards for project backers, to create a powerful pitch involving stories, passion and

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[10] Source: Pensare in grande per la piccola impresa Il contributo dell'UE a favore delle PMI, available at http://ec.europa.eu/DocsRoom/documents/874/attachments/1/translations/it/renditions/native .

multimedia, select communications channels very carefully, develop a marketing and operational plan, to put a time limit, monitor the progress and to be ready on the social media. These represent crucial points to be satisfied in order for a project to have a great impact over the internet.

Also, if we consider crowdfunding projects created by scientists, we will have the confirmation that the topic of the campaign does not matter: if a project is constructed to be successful and if it is carefully planned, the crowd will be engaged even if they are not so familiar to the project as the effort towards a detailed strategy will determine the final result of the campaign.

In our case, the topic of the projects here analysed are not well-known one but still it involves dogs, which have become increasingly important in everyone's family, especially in case of the Italian population. This makes it easier to promote the project among the population. Many scientists and researchers could turn to crowdfunding to get the funds needed to make research but the real question is whether crowdfunding would be able to replace public and private funding for research. The phenomenon is very widespread in the US but here in Italy the topic is still not well known and in the initial phase of its development. We could say that a replacement is very likely to happen but it would have to wait for at least a decade given the novelty of the phenomenon, the poor knowledge of it and the still developing legislation. For the moment, it could definitely consist in a driver for growth and an additional resource to the poor ones yet provided by the public and by private institutions.

As Professor Aresu suggested, it would be a great improvement if the University of Padova could implement and create its own crowdfunding platform: not only to get funding from the public and to offset the lack of resources granted from the public but also to create engagement with the communities and to change the perception of science among non-academics. A platform would allow the creation of an infinite network of people, where each person's contribution could make the difference. Crowdfunding could constitute an essential and since now undervalued turning point in a society which would allow citizens to have an active part contributing to a collective growth.

APPENDIX I

The Interview of Professor Aresu and his Team[11]

1. **What is the name of the project and what is it about? What is the main aim of the project? (Description of the project and how the money is going to be used)**

The name of the project that we thought would suit best the project is Let's Bite the Dog Lymphoma in a quite sarcastic way.

The aim of the project would be to use kits and DNA sequencings to investigate the presence of driver mutations at the base of the dog lymphoma in order to understand which are they and which importance they have in the pathogenesis and if they are linked to certain races, ages and sec and eventually discover their therapeutic approach. The second step would be then to use the identified mutations as biomarkers in the blood in a predictive form, to understand whether the dog can have a genetic predisposition to develop a lymphoma. Hence, we would like to raise these funds to study more deeply the mutations that are characteristic of the dog lymphoma and then eventually create diagnostic or therapeutic kits or prototypes which could then be used by companies though financing or developed by private organizations.

2. **Which are the research team members? Which is the role of each of them? What have been their main accomplishment in academic research? (this is important in order to get an idea of the team reputation)**

I, professor Aresu, research as pathologist specialized in immunology and immunopathology, researching the main problems in the dogs' kidneys of immunomediatic origin and also at a diagnostic level Moreover I manage and European diagnostic service for kidney pathologies found in dogs.

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[11] Author's translation from a registration of the interview in Italian.

About 7 years ago I started taking care of the dog lymphoma and I have also won a PRIN (Progetti di Rilevante Interesse Nazionale) and last year I won a SIR project (Scientific Independence Research). I mainly deal with the base mechanisms linked to the dog lymphoma: genetic mechanisms, epigenetic mechanisms, race predispositions and mutations. The research team is composed by me, the tecnincian Serena Ferraresso, Post Doc Massimo Milan and we are also helped by figures who are not directly linked to the research team among which we have Mery Giantin which collaborates at the SIR project and other technicians form the Department of Pathological Anatomy.

I am the main member and Serena and Massimo are my collaborators. The other team members did not get any special academic award.

3. Are the team member present on the internet? Are they active on social media? Are they part of a community? Which is their visibility in the territory and in the community?

Me, Serena and Massimo have a limited presence on social media and we only use it at a personal degree.

4. Research suggest that a short qualitative video has the most impact on project backers. Which information do you think will be essential to communicate in the video? (many successful projects about research have presented in the videos their team, images of the lab in which they work, practical examples of what they do).

The main idea would be to create a very essential video which would also be as explicative as possible. It should impact the community and a cartoon which presents the project through animations would be very useful.

A cartoon would be more impactful than the use of real images which woudl result in being vapid. I would avoid being too romantic or iperscientific and I believe that with a cartoon we would have a compromise between the two antipods.

In the video, we would explain what the DNA is, what are the chromosomes, what is a mutaion, what is a lymphoma and how it creates and then show each mutation and associate it to dogs' names.

5. **What is the required funding for the realisation of the project? (meaning the budget you would require and how this amount is going to be split by each function (ex. Advertising, materials, rewards, etc). Successful projects show a very detail usage of the funding in order to be transparent and more reliable towards potential backers.**

The sum needed is around €30.000 which would be spent mainly to purchase materials for the research, kits, reagents, laboratory instruments and sequencing costs.

6. **What are the current means of financing that you have been using so far to develop your research? (private institutions, public funding, research institutes)**

The current means of financing of the team are mainly public funds linked to national or regional projects. Some research has been funded by private companies and has also received donations from NIH (National Institute of Health).

It is very hard to get this type of funding: national, regional and University funds are almost impossible to obtain given the elevate competition. Moreover, attracting funds coming from private companies is mainly linked to personal knowledge of the people involved.

7. **What is the aim of your campaign? Will there be a tangible result at the end of the campaign? (a paper, a report, a conference explaining the results, a webinar, a book)**

The final aim of the project would be to create a paper and thanks to the findings coming from the research, we would create healing kits or prototypes to heal the dogs affected by lymphomas. Moreover, after the publication of the paper, we would have conference at a national and international level. Once the data is confirmed they can be divulgated and shared with everyone.

8. **Which symbolic rewards do you think will mostly be appreciated by backers? (cards, mentioning, participation to conferences, gadgets)**

We thought that a cute reward could be that to associate the name of the gene mutations discovered (which have acronyms of different length) to the names of the dogs of the people who will sponsor the campaign (if they are willing to). The idea comes from a Brazilian crowdfunding campaign in which a researcher collected funds to study a mussel who was damaging the fish and the environment in the amazon. In this campaign, the researcher Marcela Uliano was associating the names of the project backers to the genomes discovered.

9. **How much time do you think you are going to need in order to get to the target amount of funding?**

We do not know exactly how much time would be needed in order to reach the target but we believe that the 40 days' limit provided by Eppela would be too short to reach €30.000.

10. **Would you consider partnerships with local companies to increase the scope of the campaign? (shops that sell food for animals or animal shelters for example)**

Once the campaign is over, based on the results obtained, we would definitely be willing to make agreements with private companies in order to sell the prototypes or to create together some kits to cure lymphomas. During the campaign moreover, we would also be willing to partner with dog shelters, companies that sell objects and food for animals but also with local vets and dog breeders.

11. **Which target do you think would be the one of your project? (region, age, gender, interests). Social Media are important for the success of the campaign and researchers suggest that it is important to share the project's webpage especially at the beginning of the campaign. Where will you be mainly sponsoring the project? (chosen according to the**

target backers. For example, if scientists are our target and they are mainly browsing blogs, it will be best to use science-dedicated blogs in order to promote the campaign. Other possible media are Facebook, YouTube, Twitter, Pinterest, Instagram, Science Blogs, Radio3Scienza, Radio105, Local Newspapers, TV shows, Direct Mailing, Conferences, Events)

Dogs, cats and animals owners in general or people sensitive to the interests and well-being of animals would make the perfect target for the campaign. The scope of the project would not be limited to a target of scientists but could also be addressed to all the population of any age, sec and with interest linked to the care for the environment, nature and animals. Obviously those people who own a dog would be more easily attracted by this sort of campaign, especially the owners of dogs belonging to the breeds affected by the lymphoma.

Not only at an academic level but also after the campaign, we would be glad to participate to radio programs and also to divulgate our discoveries to the newspapers. Being the target very wide and national, the channels which could be used are various. Professor Aresu has a contact at "Il Mattino di Padova" and he released interviews two times after receiving public funding for his research[12].

12. Which hashtag would you create for the project? (a dedicated hashtag increases the efficacy of the updates)

The hashtag, for simplicity would be #LetsBiteTheDogLymphoma.

13. Are you willing to pay in order to promote posts on Facebook? (ex. € 5 per day)

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[12]   http://mattinopadova.gelocal.it/padova/cronaca/2015/06/10/news/studia-i-linfomi-del-cane-per-curare-l-uomo-1.11590008   and   http://mattinopadova.gelocal.it/regione/2013/12/15/news/linfomi-vaccino-veneto-piu-alte-le-speranze-di-cura-1.8308126, retrieved on 2/02/2016 from *Il Mattino di Padova*.

Yes, as long as it is a limited investment.

14. What are the main reasons for you to get involved in crowdfunding?

The main reasons that push us to create a crowdfunding campaign are two: the Italian research funded through national projects is quite problematic, given the high number of projects and the high level of competition and, like in America, research is being funded always more by the private sector; second thing, the people interested in the well-being of animals is increasing, especially with the dog being included in the family nest and it is also increasing the perception of crowdfunding and the people willing to finance research projects related to animals is also increasing. Dogs with lymphomas hardly survive beyond six months of existence and dog lovers are willing to find cures even by using different methods of financing.

15. What are your expectations of the campaign? Do you believe that thanks to it more people will be involved in the cause but also in the problem of getting funds for research?

Crowdfunding is linked to people who have nothing to do with research. Hence a campaign would target mainly common people. As a consequence, for sure some people would be more sensitive to the problem of getting funds. Regarding research on the other hand, there exist ad hoc initiatives like Veneto Night and the Night of Researchers and initiatives organised by the University of Padua to have common people see what happens inside universities.

16. Do you think that in the future it would be useful to create a crowdfunding platform owned by the University?

Yes, it would be very useful to create a crowdfunding platform owned by the university, not because there are not enough platforms but because it would represent a certificate of the work proposed. The university could organise an ad hoc committee supra partes who would be able to select projects based on:

- Who presents them and the scientific quality of the Principal Investigator;
- Quality of the project,
- Checks performed ex post on the project made, both on the publications but also on the efficacy of the proposal.

The projects financed through crowdfunding would have to have a relevance for society as a whole and should not be only have an end in itself.

17. Do you believe that there should be more cooperation among Universities in scientific research and that it would be important to create a platform for universities in general (In Italy and Worldwide)?

There should be more cooperation between what happens inside the university (among researchers, professors, PhD students and Post Doc researchers) and the outside environment and it should be made public and somehow marketed because otherwise the university would only be seen as a group of aleatory figures.

There should be more space form the community and on the other hand, the university should be more willing to tell what it does, both as public dissertation and scientific research but also to get funds from the community. Moreover, there should be more cooperation among departments in the University. It would be important to create a unique platform for all the Italian universities but it should have limitations, like important selection mechanisms.

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