



Escuela Politécnica

**UNIVERSIDAD DE EXTREMADURA**

**Escuela Politécnica**

**Máster en Ingeniería Informática**

**Trabajo de Fin de Máster**

**Startup BP: Planes de negocio de  
Startups**

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## **Resumen**

*Este trabajo de fin de máster presenta una visión global del estado actual del mundo empresarial de las startups, haciendo un repaso a lo largo de todos los elementos que forman su ecosistema.*

*En concreto, se introducen los roles que intervienen en el proceso empresarial: emprendedores e inversores; especificando los distintos tipos que existen de estos últimos. Además, se introducen diversos tipos y criterios de inversión.*

*Asimismo, se estudia cómo mejorar este mundo a través de la tecnología, en concreto la automatización del proceso de inversión y la reducción de la brecha existente entre emprendedores e inversores.*

*A raíz de todo este proceso de investigación y con el fin de reafirmar sus resultados se presenta la herramienta (y a su vez startup) Viable, basada en el concepto "Minimum Viable Product". Dicha herramienta propone una plataforma software que sigue los criterios de emprendimiento más vanguardistas del momento, y cuyo objetivo central es acercar y hacer la vida lo más fácil posible a emprendedores e inversores.*

**Palabras Clave:** Startups; Emprendedores; Inversores; Automatización; Minimum Viable Product; Plataforma Software



## **Abstract**

*This master's thesis aims to show a general vision of the current state in which is the business world, focusing specially on startups. It provides an overall review of all its environment elements. Specifically, roles that form part of business process are analyzed, namely entrepreneurs and investors. Also the different types of investors are evaluated and different investment types and criteria. Besides, it is studied how to improve this business world using technology, making a special focus on automatizing investment processes and reducing as much as possible the gap between entrepreneurs and investors. Due to reaffirm the results of this research process, the tool (and startup) Viable is presented. Viable is based on the concept "Minimum Viable Product" (MVP). Said tool proposes a software platform able to follow the most avant-garde investment criteria, which main aim is to bring closer entrepreneurs and investors.*

**Keywords:** Startups; Entrepreneurs; Investors; Automatizing; Minimum Viable Product; Software Platform



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# Chapter 1

## Introduction

Nowadays the business world is changing so that startups are taking more and more prominence. After all, one could say that much of the innovative effort that is currently underway comes from the hand of these organizations. Starting from the definition given by Natalie Robehmed [1] it will be said that a startup is a company that works to solve a problem which solution is not obvious and its success is not guaranteed.

This sector's situation is fully booming, which means that much of the impact, both economic and innovative, come from these businesses, and that is why more and more big investors are looking to find the best "idea" under their criteria to "catapult" their capital. As mentioned in [2] by Ahmad Fahim Didar, which shows that startups play a very important role in economic growth today, as they create many jobs, implying job creation, leading therefore to economy improvement. In addition, startups contribute to economic dynamism as they stimulate innovation and increase competition. This competition is but a challenge to bring new ideas that undoubtedly bring great value and facilitate daily life.

A term which will be referred several times throughout this work and which involves startups context (investment, funding ideas, etc.) is investors. In-

vestor is a very generic term that encompasses many different types. It will be talked of a part of the investors; those directly related to the world of startups. For startups without access to capital markets, investment is an essential source of money. Risk to investors is often high, but in many cases these often have something to say in company's decisions. It is called risk capital because this type of investment carries a high risk, because they are newly founded companies, with a high risk of not going ahead. It will be gone into more detail later talking about investors.

Along the document the term Angel Investor [3] will be used. In this context, Angel Investor idea will be the same that investors one, because they are the main who invest in startups. In this thesis it will be presented all the research work done on the world of startups and the ecosystem that surrounds them. As an example of solution to the problem that will be exposed, the tool developed during all these months of work, Viable, will be detailed.

As it will be seen throughout the development of this thesis, it will be verified that there is currently a problem regarding the difficulties that exist when it comes to finding a common ground between investors and entrepreneurs, despite the fact that both seek the same objective (business to work and both sides gain benefits), they have different ways of thinking, different points of view, and it is really a tedious task and a rather long negotiation "road" to both as mentioned in [4] by Luis Villalobos. In many cases, first negotiations are carried out as if it were a chess game. Each party tries to play in the best possible way to defeat its rival. Much of this is a mistake, since both entrepreneurs and investors must see that they are not competing with each other, but both should present their points transparently and state in a clear way that both seek benefit, and therefore mutual work and common dedication by both of them will make the task much easier, instead of trying to "defeat" each other.

When talking about startups, it is needed to talk about the "other party" that is involved, the investment. It is inconceivable for a startup to go ahead without having some type of investment/financing, so that in the same way that one part will be discussed, the other will also be analyzed.

In addition to those factors directly involved, other parties also play an important role in this field of entrepreneurship, such as Accelerators [5], Incubators, Business Angels (as defined in [3]), are focused investors in providing capital to startups), etc. Both the profiles of investors as those of founders, as well as employees of the startup itself, will be evaluated independently.

Once a review of startups, investors, their relationships, etc, has been made. It will proceed to demonstrate why and how technology can help this process of interest exchange; also a specific tool working to help precisely this will be presented, and will be made an analysis both of business and the underlying technology that allows this task to be developed. The solution that will be exposed has a real and demonstrated value, which will be clearly and organized justified.

The tool is based on current business techniques, used and accepted by the international community. In the same way, technologies and means used for its development are widely used, being therefore a complete and updated research and development work.

This project begins in March 2016, when the development of Viable's product began. Viable is a software platform whose main objective is to automate the investment process and reduce as much as possible the gap between entrepreneurs and investors.

Since then a lot of information have been reviewed while developing the tool. Having recently been introduced what is known as MVP (Minimum Viable Product), as defined in [6] an MVP is the smallest version of a product that can be released. It must have enough value for people to be willing to use

or buy it initially, to demonstrate a future benefit to get the attention of the first customers and to provide a feedback loop to guide future development. In addition it has been getting in touch with the whole ecosystem of the world of startups through different events and experiences). The work will therefore focus on these types of organizations, how they are born and how they start their projects and what difficulties are found throughout their early and not so early stage of development.

More specifically, it is intended to reflect how is startups sector, evaluating all the parts that form their world. An analysis will be made of all the profiles involved from the creation, investment, startup, etc. And will also be studied the impact of these types of companies in the economy by analyzing a real example: the Viable startup. It will be analyzed more thoroughly what is meant by startup throughout the document, giving more details.

The document will follow the following structure. In the first place, the objectives that will be addressed throughout the work will be presented. Next the state of the art is introduced, in which the theoretical base that underlies the work will be discussed. Subsequently in the section of Material and Method, which will be the main and most extensive of the document, the following aspects will be discussed:

- Methodology followed during the development of the work.
- Detailed theoretical framework of the business ecosystem.
- Existing problem to be solved.
- Evaluation method that has to do with the inherent problem.
- The tool itself, Viable, which solves said problem.

After this section the results obtained will be commented and contrasted with what will have been exposed in the State of the Art and finally the

conclusions obtained from all the work developed will be analyzed.





# Chapter 2

## Objectives

In this section, the objectives that will be covered during the development of this master's thesis are presented individually. In addition, as transversal objectives it is proposed to present this work within the call of January-February 2017, fulfilling all the established deadlines, demanding to carry out a careful and well-planned planning.

- Contextualize the current status of startups and introduce the technical aspects that are followed when investing.
- Demonstrate the need to reduce and bring together visions and ways of understanding the economy and businesses of Entrepreneurs and Investors.
- Raise and demonstrate how technology is the optimal way to reduce the gap between them.
- Ask how this automated process can lead to the creation of a startup of impact in the market, or help other existing startups to progress.
- Discuss the technical aspects on which the work is supported.



# Chapter 3

## State of the Art

In this section the state of the art will be discussed; It will be commented how is the currently gap existing between entrepreneurs and investors, how it is managed by both sides and how each one tries to "get closer" to the other and how they do it. This is one of the main points that surround the whole context of the entrepreneurial ecosystem and which in turn causes more "headaches"; it is, therefore, the core of the project and which situation will be discussed and how it is currently approached.

It is of the utmost importance that both sides, entrepreneurs and investors, know, understand and have an objective understanding of the operation of valuation processes to measure the potential of a startup. When both parts agree on expectations, positive and productive relationships between founders and funders are promoted. In addition, investors and entrepreneurs benefit separately when they know the answers to the essential questions. What are the most important factors that Angel Investors [3], investors who invest in startups or entrepreneurs, should consider to determine the value of a company? How can entrepreneurs present better their companies to attract investors in the early stages and build effective relationships? These are the key questions that incalculable startups must face (and they currently facing).

One of the main problems that entrepreneurs must deal with is that investors are in many cases quite inaccessible; it is difficult to make an appointment with them, to call their attention and even if a meeting appears, investors usually do not last more than five minutes (and even if they can be got it is likely that the investor will not invest). This is therefore the challenge entrepreneurs have to face, on one hand getting the attention of investors simply to make an appointment for a short time and on the other hand, to have the skill to get the attention of them.

However, investors do not have it as easy as could be thought, because since investing in startups involves a very high risk, as can be seen in [7], nine out of ten startups do not get success. How to choose good startups to invest in then? How can one predict that the chosen one will go ahead? For this, investors use evaluation systems, in order to be as sure as possible of not investing in something that ends up failing and does not produce any kind of benefit. Nowadays, Investors' valuations are based on criteria that they define and are based on points that they consider key that companies must accomplish to be at least worthy of their attention; some of these factors affect how the "Angels" value a company. Some of these main factors are, for example, the strength of the management team, the size of the opportunity or the scaling potential of a company.

More and more investors are better organized, and also startups are better prepared; The first one have to try to know and meet as many of these as possible, because the more they have available, the more likely they are to find what they seek and need. The second one have to try to reach to the investors to get the needed investment. The key point that solves the problems of both, is the ignorance. How can startups become recognized? How do investors find that business idea, that perfect business to invest and get profits? This is one of the "pending subjects", or at least with a lot of improvement margin

of the business ecosystem, since there are programs, events, conferences, etc that make easier the interaction between the two sides. However, there are no consistent and automated tools that actually make the tasks much easier (evaluation of businesses, contacts with investors, improvement aids, provide an entrepreneurial network, etc.). As can be seen in [4] "More than 90% of Angels Investors are currently looking to make more investments. However, there are limitations on their ability to invest: they do not see enough offers that agree their investment criteria, most of investment proposals they receive are of poor quality and often they cannot negotiate acceptable investment terms and conditions with entrepreneurs".

Although, there are tools that partially help to reduce the gap between entrepreneurs and investors, and exist some web portals that bring together sets of factors for startups to value their project (statically, simply as a guide, as a reference only for entrepreneur), as well as investor houses or angels groups that have a small applications to make easier the task for startups trying to contact them...Nothing "universal" that provides an environment to cover the entire ecosystem related to entrepreneurs and investors has been built.

Some examples of similar projects will be discussed below.

On one hand, the F6S platform (<https://www.f6s.com>) is a web portal that allows entrepreneurs to connect to accelerators and other agencies. The main characteristic is, therefore, that offers the possibility to create a network so that startups can make themselves known. However, it does not manage any type of evaluation or "link" automated with investors. On the other hand, YouNoodle (<https://www.younoodle.com/>) gives to startups the possibility to evaluate their business ideas and it advises them according to the selected factors. Despite this, it lacks the next step that is to make known those ideas, or allow investors to look for ideas in an inverse way.

There is also, covering another part of the process, the web portal Angel

List (<https://angel.co/>) which is a connection point between startups and investors. It offers a robust and easy-to-use interface that allows the user to work in a very comfortable way while enriching himself by navigating an environment full of business activity. In spite of this, it does not allow entrepreneurs to provide well-structured information and, likewise, investors do not have a very comprehensive personalization to be able to really focus on the aspects that interest them.

Focused exclusively on investors, it can be found for example the CB Insights tool (<https://www.cbinsights.com/>). Being very complete when analyzing the market for startups, trends, providing real-time statistics, etc. It does not stop to offer services for the entrepreneurs; it is a dedicated platform whose main and only purpose is to provide functionality to investors.

Finally, dedicated to the direct connection between startups and investors, there is the Clarity platform (<https://clarity.fm/>), which organizes video calls and concert meetings between both sides. In spite of this, these meetings are managed by the little information that the startup provides, being it in many cases insufficient. As a result of this, both parts find themselves in conversations which are poorly productive. Usually they almost do not have the same objectives, being these little beneficial, so much for investors as for entrepreneurs.

These and many other existing tools, as it can be seen, offer great quality of resources, but always without managing the entire process. In this work, it is intended, prior to a comprehensive analysis of the ecosystem, to present a tool of a universal nature that allows covering all the focuses and main critical elements present in the matchmaking that faces investors and entrepreneurs.

# Chapter 4

## Material and Method

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This section will start by talking about the methodology followed during the development of this thesis. Then, the theoretical framework of the business ecosystem where Viable is based will be detailed, followed by the explanation of the problem this tool aim to solve.

Finally, the different methods of evaluation existing to solve this problem



will be detailed, together with the explanation of the tool itself: Viable, which will solve this problem.

## 4.1 Methodology

This section will discuss how the work was developed, what technologies were available and what were the approaches and foundations that supported such development.

Following Lean Startup's canons, the goal has always been to develop an MVP. As explained in the Introduction, Minimum Viable Product, [8] is that viable minimum product that allows validating at least part of a business. Therefore this will be the first prototype to be taken to the market to find the first reactions of target customers. This tool:

- Provide the first clues to pivot (change or migrate) the model or persevere in it.
- As explained in [4] it will allow entering into an "invertible" scenario: this means that today, most investors will require going through this phase. Otherwise it will not be possible to show business numbers and metrics, and that is very important for the investor.

As mentioned, the "modus operandi" of Lean Startup is to develop the product in a way that satisfies investors. In many development moments, objectives can change, and this will also guide the development of the project. Change-oriented development and following an agile methodology, SCRUM, have been the keys of the methodology followed throughout the work progress. SCRUM, as defined in [9] is a process in which a set of good practices are applied on a regular basis to work collaboratively, as a team, and to obtain the

best possible result of a project. It is oriented to changing environments, requiring partial deliveries on a regular basis, where requirements are poorly defined or can be redefined, where innovation, competitiveness, flexibility and productivity are essential. In a rough way, the team establishes approximate iteration duration (one week for example) and at the beginning of each iteration, goals are set for the duration of the iteration, they are reviewed and another iteration is performed, starting with the previous one.

To carry out the control of the tasks has been used a tool that allows this among other things. This is Trello; basically it is a collaborative tool that organizes projects on planks. It is based on the "Kanvan" method [10] (developed by Toyota in the early 1940s), also called "card system" because, that is exactly what it does, it organizes the system using cards that catalog elements in order to organize best. Within this project, Trello has been able to manage:

- A hierarchy of users, some may see certain things that others do not, or modify them.
- Creation of boards to differentiate each development phase (Design, implementation, tests...).
- Within each board have different sections (lists), for possible versions, "tasks pending".
- Within each board insert cards that can be moved between them, to update their, to notify that its state has changed, or that it has been completed, etc.
- Detail on each card multiple information, comments from users with permissions to do so, set up a color-based labeling system (it was very useful to know that a functionality was not available, only implemented

in a local version, etc.) , Share it, set deadlines in which the specific task can be developed...

- In the following image an example of a board can be seen, with different lists and these in turn with different cards:

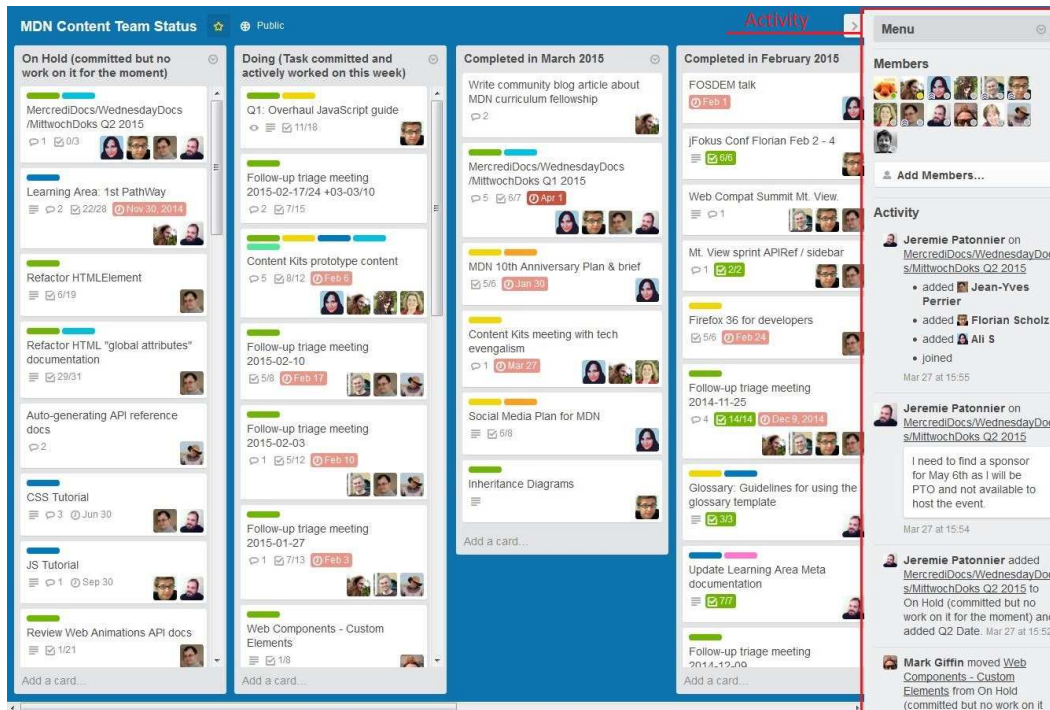


Figure 4.1: Trello Board example.

The application has been built from scratch using current computing tools and with a solid and justified basis. The technological team consists of two components, and has always worked in Caceres, Spain and in the same environment; both have taken care of the technical part the application requires. On the other hand the other part of the team, formed by the designer and the CEO, dedicated to the administration, marketing and study of the fundamentals that underpin the project, has also worked together in Lisbon, Portugal. Weekly meetings have been established via videoconference (using Google

Hangouts), to set the week's goals (usually on Mondays) and to check their reach (usually on Fridays). The development team tried to achieve the objectives as fully as possible and on Thursdays, an attempt was made to offer a stable version of the week's progress, so that the other part of the team could test the new changes and approve them at the beginning of the next week. But not everything have been non-face-to-face meetings; at least once a month there is a day in which the whole team is meet in person (sometimes it has been in Caceres and others in Lisbon) to improve relations between the components and also to have reflections of the objectives, Sharing ideas, giving impressions regarding the work that has been carried out and the advances that are wanted, etc.

## 4.2 Development tools

Given that this thesis is based in a real project, build to make the Viable startup a success and that the application that was developed had a real value a very comprehensive, secure and revised has been performed through all the project.

### 4.2.1 Software Architecture

The software platform that has been used to support all the application logistics has been Eclipse. This tool was chosen because it is very familiar and known by both developers and offers everything that was needed to solve the project. Also, it perfectly supports the programming language that has been used, Java. At the moment it is a very used language, and therefore very well known by the programmers, indeed with an advanced knowledge.

In order to make the development easier, it was decided to use a development framework (technological structure formed by different modules that

cover much of the needs of the developer) indeed, it was chosen a really complete one, currently used in most technological sector: Spring. Spring is a licensed framework from Apache Software Foundation for the development of open source applications for the Java platform. Without entering much in detail, this allows controlling, among other things, the interaction of objects with the database, security and integrity control (orchestrated by the framework itself), and also assures that they are going to integrate seamlessly between them.

This framework allows having a complete architecture with well differentiated modules that will be explained further supported by the image shown below.

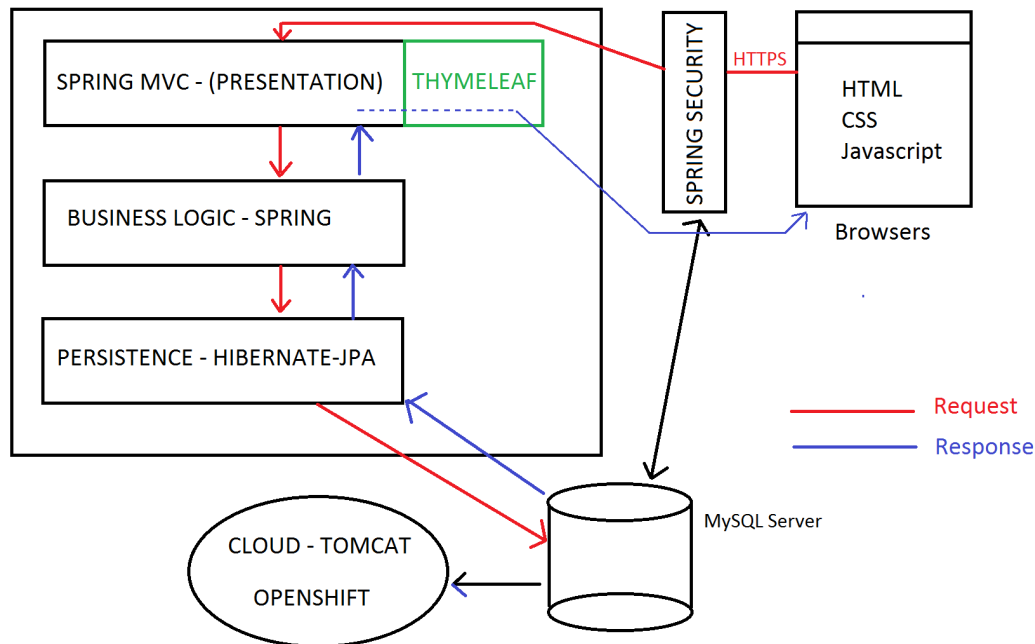


Figure 4.2: Software architecture.

As a web portal that will handle information, a robust database that stores and manages information is essential. For this purpose, MySQL Server has been used as a relational database management system, developed by Oracle

Corporation, which is the most used within this field, as can be seen in this comparative graph bellow. In it can be noted that from January of 2013 to today, MySQL is leading with Oracle and Microsoft SQL Server, well above the rest of management systems.

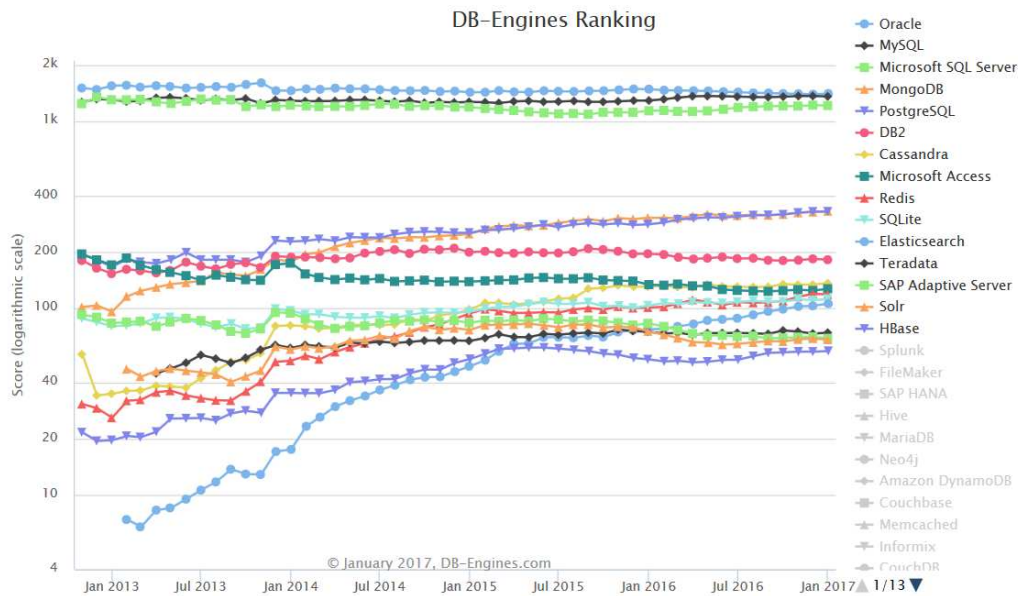


Figure 4.3: Management Systems Comparison.

This database is hosted on a Tomcat-based server (Tomcat is a web container with servlets and JSPs, [11] and hosted in a Cloud provider, Openshift).

Immediately after and to connect this database with business logic, the persistence layer (layer that retrieves data from the database and offers them to work with them in the business logic layer) appears. This is managed by the Java-oriented Hibernate tool. Basically Hibernate allows developers to abstract from the database, being able to access it from the code. Also, one level above makes use of JPA. JPA, or Java Persistence API [12] is the persistence API developed for the Java EE platform. This API allows abstraction from the persistence framework that will be used, so that if it changes at any time, it is not necessary to modify the statements used until that moment.

Then, in the next the central and heavier part of the infrastructure can be found: the business layer. This, fully managed with Spring, supports the transactions that occur between clients with the database through browsers. Besides, it supports all the algorithms behind the tool and making possible the "entrepreneur-investor" interaction.

Above is the Presentation layer. This is the one in direct contact with the web interface displayed to the user. In this project, this layer is managed with Spring MVC; following the well-known paradigm Model View Controller (MVC), which separates data and business logic from the application interface and the module which manage events and communications. This architecture allows working with the transference of objects between the different elements that interact, having at the same time a clear differentiation between them.

As an additional element, in this layer has been included Thymeleaf [13]. Thymeleaf is a Java library that implements an XML / XHTML / template engine that can be used both in web mode and in non-web environments. It fits nicely in the MVC view layer of web applications, but also can process any XML file, even in disconnected environments. The use of this library has greatly facilitated the management of complex elements directly on the web interface (on HTML elements).

In the last level and directly in contact with the end user, there is the interface. This is accessed through current browsers. At the moment, it can be accessed with Internet Explorer, Safari, Firefox and Google Chrome, although it is mainly oriented to the last one. In this layer HTML, CSS and Javascript have been used as main technologies.

- A transversal security layer offered by Spring Security has been included in order to improve users' petitions to the system. This allows to: Manage security on several levels: URLs requested from the server, access to Java classes and methods, and access to specific instances of the classes.

- Separate the logic of applications from the control of the security, using filters for the application requests to server or security aspects in classes and methods.
- Make security configuration portable from one server to another, as it is within the application WARs or EARs.

To carry out the version control has been used a tool properly designed for this: Subversion. This is a tool for version control based on repository, offers features that fit perfectly with the project requirements. Since the way of working of the team is based on an agile methodology, counting with a system that facilitates the separation of versions, not only as a way of security for avoiding corrupted versions, but also to keep track of the progress achieved. For a project of these dimensions, it is really useful to have such a management system. In addition the possibility of working with branches, allows the two developers of the team to be working with the project in parallel, making possible to later unify the results without any problem.

Subversion has support for working with our development framework (Spring) and, therefore, the integration of both is absolute, being really easy to work with the whole set, as if it were a single element.

From the user's view, known languages have been used, such as HTML, CSS, and Javascript, because they are the most accepted ones currently and offer more than necessary for the development of the Viable tool.

### 4.3 Chronology

This section will talk about the chronology followed during the development of this work. Below it can be seen the Gantt diagram of the chronology; About the Phase 2 (MVP stage), It can be differentiated 3 different deployments:



- Local deployment: It refers to the software team testing environment. The rest of the team cannot see the uploaded changes.
- Test environment: Made as an intermediate phase. Still it is a private version. Authorized users:
  - The whole team.
  - Few users explicitly authorized, in order to give feedback.
- Public environment: Anyone can access.

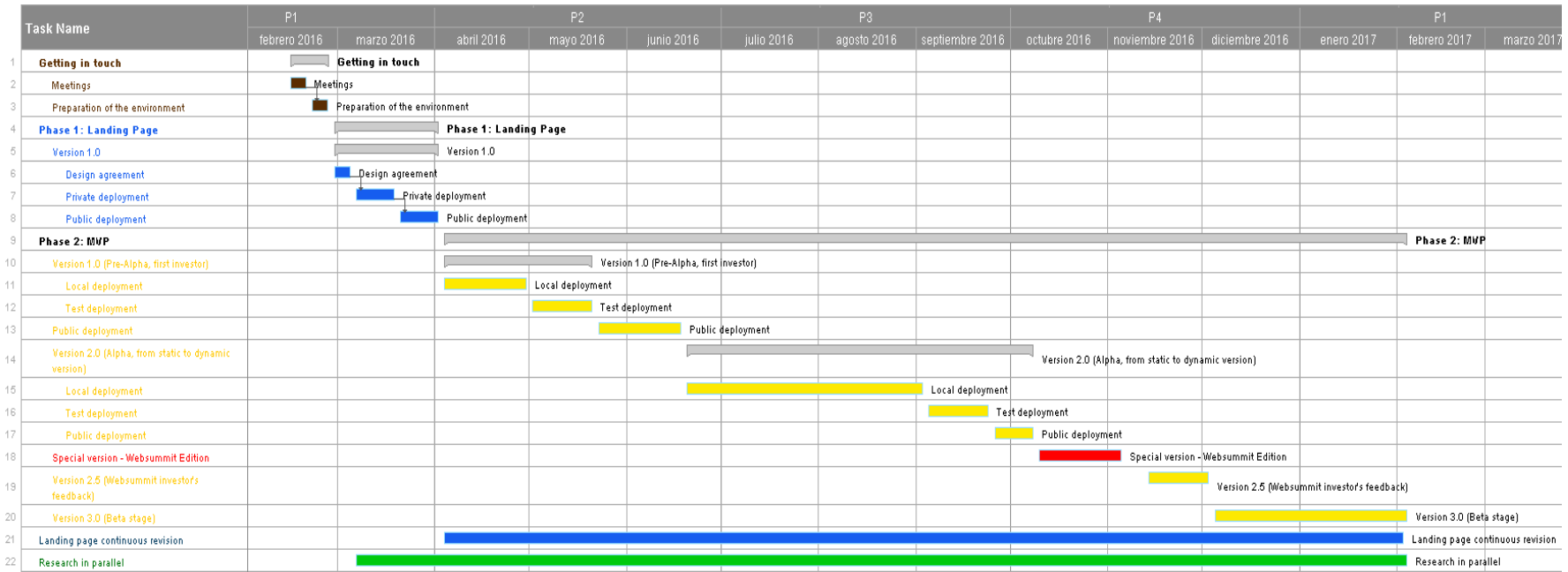


Figure 4.4: Gantt Diagram.

### 4.3.1 Challenges

The development time runs from February 2016 to early December 2016. During this period, there have been several phases, and at all times an incremental process has been followed. Although it is not a finished project, it is a tool in continuous progress and improvement, therefore its explanation will be limited to these dates, and future expectations will be discussed later.

During the months of February and March, the first objectives were established; the structure of the tool was built, creating the nucleus of what was going to be the application. During this time, the objectives were more abstract, everything was more in the air, although also the first developments began. Although the details of the tool will be given later, the business idea counts with the web portal (the central part of the project, and the most important), previously and during these months (March-April) a webpage was published in order to give information about the project, what was wanted, what was going to be offered and more information about the team and other relevant data.

Starting in May, the development team was totally focused on the main tool and, while the progress was clearly satisfactory, the targets were sometimes shifting from week to week, forcing changes in the development process, sometimes even conflicting with what has already been achieved. This is quite normal, because in the early stages of startups, the goal is to attract the attention of investors, and often these change their preferences and with this the project itself is altered.

### 4.3.2 WebSummit

During all this time and with a view to a key date, November 7, the team wanted to have prepared a functional and consistent version, which allowed teaching the keys to the project (why it is so good and how it differs from the

rest, more details on this will later be found). This date is so important because the team would attend an event called WebSummit, a technology conference recognized worldwide, focused primarily on startups in the technology sector; an ideal event to become known and present the tool. Having acquired passes for this event and with the possibility of having a place to present itself, closing a version with the most important aspects achieved at a more than acceptable level was key to the future of the organization. Although expectations did not revolve around leaving with an investment that solved the future of the company, getting contacts and making themselves known was mainly the goal. This was achieved, since it has allowed maintaining contact with at least 20 investors, of which a great part show real interest for the tool.

The month of November served to organize everything learned at the conference and put ideas in order for the near future. In December, a "Beta" phase of the application begins, which is simply to continue developing the tool according to the needs that the investors believe it needs to supply. These use the environment for free, being able to benefit from the functions that it provides, and they give their opinion and help to improve the tool, so that after 2 or 3 months (for the month of March 2017 approximately) the company can have a product with such a value that pushes these investors to put money to keep progressing.

## 4.4 Theoretical Framework

In this section will be treated all the concepts, elements, roles, that are orbiting in the business ecosystem, and in which the developed tool will focus later.

### 4.4.1 Investors

This subsection will talk about investors and the role they play in the world of entrepreneurship. The investor is that person who renounces the expense or consumption of their wealth at the present time in the hope of obtaining future profitability [14].

In the context in which it is being described, investors are what were previously called "Business Angels" or "Angel investors". They are those investors who offer investment in startups and who generally obtain in return participation in the business. In addition, because investments are very high risk (as discussed above, a startup has a high probability of failure) these are made with the objective of multiplying by 10 or more the investment initially made (usually in a period of 5 years).

Although Business Angels respond to a heterogeneous profile and therefore difficult to typify, there are some characteristics that are common to all of them and that serve to differentiate them from other types of investors:

- They invest their own money, unlike the Venture Capital [15] entities that invest the money of third parties.
- Make their own investment decisions.
- Invest in companies whose promoters do not have a relationship of kinship or friendship.
- They seek to make money, even if this is not their only motivation to invest, not even the main one.

While it seems that this type of investor works independently (not for a company) it is becoming more frequent to see organizations, companies formed by several of these dedicated expressly to invest in startups. An example of these organizations is the Portuguese Association of Business Angels (APBA)

[16], whose objective is, among others, the search for startups to provide capital, as if it were an investor.

The way of proceeding of the Angels is always the same, and everything begins in the Valuation. As detailed in [4], at the time of the investment, valuation is the main determinant of performance for investors. In other words, what investors receive is based on the increase in the valuation of the shares in exchange for their capital (money that the company has to invest in). Unfortunately, valuation is the most misunderstood part in the investment process and often leads to controversial negotiations that put the relationship between the entrepreneur and the investor on the wrong foot. As discussed in the introduction, most entrepreneurs and investors have oblique points of view; in other words their views do not have a priori a common goal. In fact, the two parties do not even speak the same investment language.

Although the objective of this work is not to deepen into the technical and financial aspects of the process, it is notable to note that the biggest headaches in the way of investment are around this assessment that is discussed; in addition there is a great deal of literature and documentation that explains the ways of proceeding to make a correct valuation, how to act in case there is no agreement of both parties, etc.

#### **4.4.2 Entrepreneurs and Startups**

This section will talk about the "other side of the coin". An entrepreneur is a person with a strong determination to deal with situations that carry a risk. In the workplace, the word undertake (in a business way) means taking advantage of a business opportunity and organizing the resources necessary to carry it out [17]. The entrepreneur will in most cases start a startup, usually with a specific business idea that aims to develop and which will bring benefits in the medium-long term. The concept of entrepreneurship as such today is

not conceived if someone does not have some kind of investment to start the project (unless the entrepreneur himself has enough funds to invest in his business).

We can give a standard definition of startup, obtained from [18], like that company of new creation that has great possibilities of growth and, in many cases, have a scalable business model; in most cases they are projects with high risk where success is hardly guaranteed.

Within the world of entrepreneurship, a term is growing that is becoming increasingly noticeable. This concept is Lean Startup. Lean Startup was defined by Steve Blank and provided this name by Eric Ries. [19] Lean Startup is a methodology that uses different techniques to achieve 1 single objective: Creating viable businesses. That is, creating businesses that can sell repeatedly and grow. When it is said viable, it comes to be that it is to construct viable projects that initially consume very little cash. But also, trying to take every resource to the maximum, generating the least waste of resources. According to the author, three "Lean" techniques are used:

- The design of Business Models (i.e., a tool to visualize what is being built).
- Customer Development (a guide to know what steps to take to build a new business).
- Agile Development (a method that allows, using preferably free tools, to produce software, physical products or services from an idea: The launch date of the product is the same day it is thought of).

Although Lean Startup can be applied to any type of business, and not only the creation of a new one, but a company that wants to launch a new product following this methodology, it fits very well with the profile of people who want to start in the world of Entrepreneurship without having a too extensive pool

of resources. Now, is Lean Startup better than a traditional business model? Like all, each has its advantages and disadvantages, but as clarified by Eric Ries in [19], the probability of business failure in less than 5 years following a traditional methodology is 90%, being reduced to 40% with Lean Startup.

With this methodology what is intended is not to fall into obsolescence, being continuously updated and renewed, as can be seen in this image.

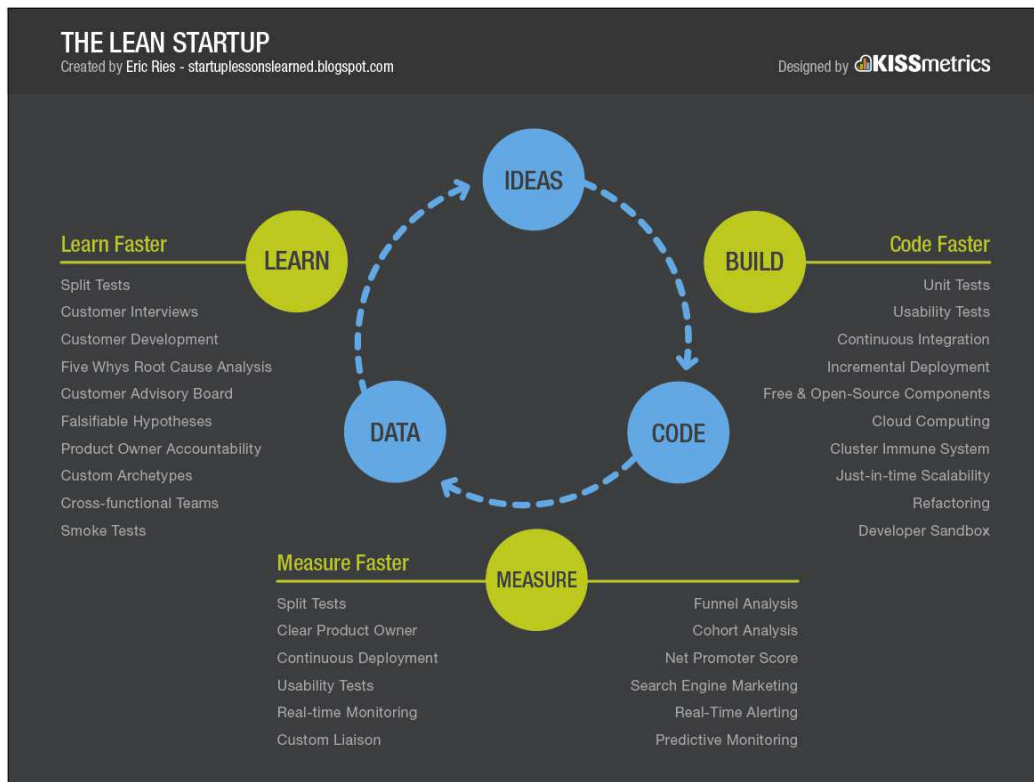


Figure 4.5: The Lean Startup Methodology.

A traditional model aims to make the business plan as impressive and solid as possible, use that business plan to get as much financing as possible, then buying as much time as possible to produce the best possible product and finally launching that product to the market with all the advertising that the business can afford. The hope is that when the product is finished and the big launch takes place the customers will be delighted with it, they will be



attracted to it and therefore will buy it.

Nowadays, and especially for some markets such as those that move in the world of entrepreneurship, betting on this type of techniques is to add another problem to the large number that already present this industry. What Lean Startup allows is to understand the business plan as a set of assumptions and then confirm those assumptions quickly to find out whether the strategy is correct or whether to pivot towards a different strategy. This is in essence the new methodology: pivot, change strategy without changing vision.

This work has been developed under the commandments that this methodology defines.

### 4.4.3 Accelerators

Next two sections will talk about "secondary" elements that take part in the business ecosystem of the startup. They are not protagonists, but are key in many cases for success or failure.

[5] A startup accelerator is an institution to push startups through a schedule based on calls with a stipulated time. These programs include mentoring (experienced entrepreneurs who offer their knowledge for improvement), intensive training, digital education and tutoring by the company. The whole process concludes with a public pitch.

The goal of every startup at the beginning is to be able to access an accelerator. Now, how can it be accessed? To be selected, a startup must pass a first and demanding filter. As Javier Jimenez, CEO of Lanzadera says, "Entrepreneurs must demonstrate that they challenge the conventions, having the capacity for effort and have surrounded themselves with a team capable of giving solutions where others see problems by creating a business model that covers real needs, is scalable and generates wealth and employment."

#### 4.4.4 Incubators

Incubators are not the same as accelerators. Both have common features but there are some differences. As explained in [18] an incubator does not have to go beyond being a physical space with some basic services that welcomes startups in early stages or even ideas at a reduced price. An accelerator is assumed to be more complex. Incubators therefore do not go much further than providing the physical environment for startups to develop their jobs, they do not offer support or any acceleration that is sometimes so necessary. In the following image there can be seen a comparison between accelerator and incubator.

<u>Basic differences between accelerators and incubators</u>				
	Physical space?	Mentoring?	Inversion?	Acceleration?
Accelerator	N/A	Yes	Yes	Yes
Incubator	Yes	No	N/A	No

Figure 4.6: Differences between accelerators and incubators.

### 4.5 Existing problem

Knowing the main roles of the entrepreneurial ecosystem, this section will review which problems can be found on this field, how they are solved nowadays and what future solutions are expected.

### 4.5.1 Entrepreneur's problems

Being an entrepreneur means going through a path full of difficulties. There is no doubt that each case is different and each will have its particular problems depending on the many factors that affect their environment and how they can launch their idea. However, there are a series of milestones that entrepreneurs must cover and that represent the real problem.

The main difficulty of an entrepreneur is to come up with an achievable, profitable and sustainable business model. The first great task of any entrepreneur is to find a product or service that can be launched to the market, which may have demand, useful to solve a problem and for which the target market is aimed at willing to pay because it is attractive.

The next difficulty is to set up a team that is capable, not to develop the entrepreneurial project, but to put it into practice and to deliver the expected results. It must be a competent and well-designed team, knowing what tasks are assigned to each member and how to carry them correctly. In many cases they will have to work against time, since some results may influence strongly on the success or failure of the startup and, therefore, it is mandatory that they know how to deal with this pressure. In addition, members should be involved, as they are usually small teams, the relationships between them will have to be affective, providing them with a better working environment and therefore being able to offer the best of themselves when being in a comfort zone working.

Another problem to address is sales. Most of entrepreneurs and members of the initial team do not have sales experience, may have never established contact, or very little with commercial work. Selling is not just catching clients, the sale starts at the first moment since one should be able to sell the project to partners, investors, suppliers and, of course, customers. Do not assume that selling is critical and not worry about selling is doomed to failure.

## 4.5.2 Investor's problems

On the other hand, there are investors, generally Angel Investors as was previously highlighted. While investing in startups is a high risk act, the main problem investors face is to come up with the right ideas, those that fit their objectives, have a common vision and that can really end up in an organization that offers benefits to all parties. To choose well the business ideas that investors are going to "adopt" they use a "Worksheet". [4] This is nothing more or less than a tab in which different factors appear, defined by each individual investor. When evaluating there are numerous factors that affect how Angels value a company. In the figure can be seen an example of a tab extracted from the article. As can be seen, factors that are taken into account are the strength of the management team, the size of the opportunity or the competitive environment. Entrepreneurs can use this worksheet to assess and better understand what investors are looking for and identify the factors that can justify higher valuations before making the investment. This type of tools allows investors to make comparisons based on an assessment that, together with their own experience, can have a fairly reliable estimation of what the startup promises and its chances of success, as well as knowing how much to invest in case of deciding to bet on it.

## 4.5.3 Common problems

Once that problems faced by each party individually has been displayed, this section will proceed to express the problem that arises when both roles try to negotiate. First, the fact that an investor agrees an interview with an entrepreneur is difficult because of the number of startups initiating projects today. As Ron Conway (a notable Angel Investor in Silicon Valley) states in [4] once this appointment is made, it is quite likely that the investor does not spend more than 5 minutes talking about investing with the entrepreneur.

Weighted Ranking	Factors and Issues Impacting Valuation of Pre-revenue, Start-up Companies	
0-30%	<b>Strength of Management Team</b>	
	<b>Impact</b>	<b>What is founder's experience?</b>
	+	Many years business experience
	++	Experience in this business sector
	+++	Experience as a CEO
	++	Experience as a COO, CTO, CFO
	+	Experience as a product manager
	-	Experience only as a salesperson or technologist
	--	Straight out of school
	<b>Impact</b>	<b>Is the founder willing to step aside, if necessary, for a new CEO?</b>
	deal killer	Unwilling
	-	Difficult to convince
	0	Neutral
	+	Willing
++	Key part of the plan	
<b>Impact</b>	<b>Is the founder coachable?</b>	
0	Yes	
deal killer	No	
<b>Impact</b>	<b>How complete is the management team?</b>	
--	Very incomplete (none identified)	
-	Somewhat incomplete	
0	Good start	
+	Rather complete team	
++	A complete and experienced management team	
0-25%	<b>Size of the Opportunity</b>	
	<b>Impact</b>	<b>What size is the specific market for the company's product/service?</b>
	deal killer	<\$50,000,000
	0	\$100,000,000
	++	>\$500,000,000
	<b>Impact</b>	<b>What is the potential for revenues in five years?</b>
deal killer	<\$30,000,000	
0	\$50,000,000	
++	>\$100,000,000	
0-15%	<b>Competitive Landscape</b>	
	<b>Impact</b>	<b>What is the status of the IP (Intellectual property)?</b>
	0	Trade secrets only
	+	Core patents pending
	++	Core patents issued
	+++	Complete patent estate
	<b>Impact</b>	<b>What is the strength of competitors in this marketplace?</b>
	--	Very strong
	-	Strong
	0	Fragmented
+	Weak	
++	Very weak	
<b>Competitive Landscape and rest of table continued below.</b>		

Figure 4.7: Worksheet evaluation example.

This is mainly because of how difficult it is to evaluate a startup at its early age, making senseless to over-discuss the valuation of it. Ron prefers to address issues such as team consistency, the value that startup can bring, and in more advanced phases discussing aspects of valuations and financing. The following image shows how the investment of the first round ("seed round", known as round to the fact that one or several investors make an investment on the startup) are much lower than next ones.

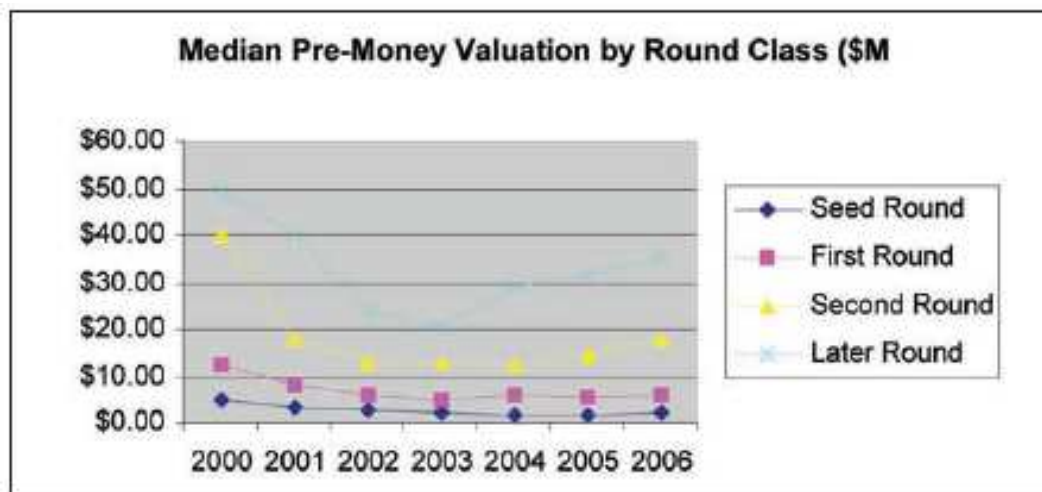


Figure 4.8: Different rounds in order to invest.

#### 4.5.4 Divergency valuation

Valuation negotiations between entrepreneurs and investors are often controversial. In many cases they are long-lasting processes, with hard negotiations, since it is difficult for both parties to agree on numbers and quantities. In many cases, investors estimate valuations lower than those proposed by entrepreneurs, or other types of nonconformities occur.

[4] Luis Villalobos provided a concept defined by him as "Valuation Divergence" stating that understanding between investor and entrepreneur is key, and that it would help both parties to understand each other and to work

together for the common benefit. In his theory Luis affirms that the returns of the investments in a company do not increase in direct proportion to its valuation.

According to this theory, in the initial phase ("early-stage") the recovery of the investment made by the Angel would be based on the increase in the valuation of the shares that the investor acquired. However, as a firm's valuation increases, also does its stock valuation but at a much lower rate or could even decline.

An understanding on both sides of how this divergence works can make negotiations between entrepreneurs and investors more productive and make the expectations of both come closer to reality.

## 4.6 Solving the problem

As discussed in the previous section, it is a current problem that, on the one hand, there are no more advanced forms of valuing startups by investors, and on the other, for entrepreneurs to make themselves known to investors without having to submit to all that "stress" that this implies. The proposed solution is a web-based technological tool that will help both parties with these tedious tasks that are pointed out. This web portal will try to solve:

- Being a startup, users can register their business idea and evaluate it according to some criteria, based on factors established by the investors (as a Worksheet).
- Being an investor, users have a panel organized where there are all the business ideas that are looking for investment.

Currently, providing a complete support, covering these first needs, and over time providing more functionality, is something that does not yet exist

as such in the business ecosystem (there are investment companies that have semi-automated this process, but each one has different factors, and in the end it is a tedious process for the entrepreneur filling up a lot of information being little reusable in many cases). Many of these systems do not offer investor communication with the entrepreneur, they are simply static evaluation systems that allow them to have an idea of where the business idea is (in terms of acceptability, consistency, etc).

The aim of this work will be to achieve a universal environment, offering a fast system, easy to use by the user and to reduce working time for both parties (investors and entrepreneurs).

## 4.7 Valuation method

One of the functionalities that will be offered is the possibility to evaluate the idea based on widely accepted factors and criteria, fruit of the analysis of multiple investors' needs.

This compendium of factors is not fixed, since everything is in continuous analysis and may appear new needs or redefine some already known. Currently there are more than one hundred questions that the entrepreneur can/must fill out. The more information they provide, the more likely it is that the investor will be attracted to that business idea and, therefore, more success chance.

All these factors are divided into 6 well differentiated modules, allowing a better structuring and organization. It also allows information to be more easily reviewed by investors. These modules are:

- **Concept:** generic information related to the project is requested here. Its name, description, problem from which arises the idea and solution that is intended to offer, social information (Twitter, Facebook, etc.).
- **People:** Information related to the startup team that develops the project.



From generic information of the team to related to each member, such as age, LinkedIn, studies, if worked in a company previously recognized, etc.

- **Context:** This module refers to the market sector. In it can be found questions related to market strategy, the project industry (video games, fitness...), size of the market, information about whether the startup has gone through some incubator / accelerator, competitors, partners, etc.
- **Execution:** This dimension requests information related to the operating time, development phase in which the project is located, whether it has a business model, scalability, whether it has a marketing plan, a financial plan, and many others.
- **Financial:** The information requested in this module is financial. Questions about the type of income expected in the coming months, how much money the startup needs to grow, or numerical values such as customer acquisition cost (CAC) or debts (if any) can be seen in this section.
- **Legal:** Finally, the legal or regulatory module measures issues such as: patent status of the product, status of the legal process of the startup, signature of the intellectual property, etc.

## 4.8 Viable

As discussed in the previous section, Viable is the tool that comes from analyzing the main problems faced by entrepreneurs and investors, the result of the previous study.

Viable is the business tool that is presented and which will be discussed in the following section. Its construction, development, etc, follows the techniques and methodologies that have been discussed previously in this docu-

ment. It is therefore the direct application of the concepts explained, and implemented 100%.

As previously mentioned, the project was born as a proposal for a solution to the great problem that involves, on the one hand, investors (the ones looking to find businesses, startups, on which to invest), and on the other entrepreneurs and their startups (a project that needs initial investment to be able to start and get ahead).

While this is the original problem, each party is currently doing its best to reduce that existing gap with the other, but the problem remains, or the inherent difficulty is that there are no tools, methods, or useful systems to cover this complete process, the negotiations of both sides for common benefit. This complete process encompasses:

- Give entrepreneurs the possibility to evaluate their business idea, based on a complex and widely accepted valuation system.
- Facilitate them to send this valuation with their information to various investors.
- Provide investors with a simple way to view business ideas that also match their search goals to fund.
- Reduce the geographic gap and being able to contact investors / entrepreneurs from anywhere in the world.

#### **4.8.1 First steps**

Since the work has always had an eminently practical character, all the steps that have been followed were very measured, fruits of a previous study that allowed to move forward without regretting bad plays.

Before developing the tool itself, a page was developed that would make the product known, with all its information, how to keep up-to-date with updates, get to know the team or contact in case of interest or doubt. This page has a structure categorized as "landing page" whose meaning, as explained in [20], is a web page designed specifically to attract visitors. The operation is simple: if the website offers something that seduces the user, he will be more willing to leave information through a form, if this will gain him access to content of interest. The user can go through the page, discovering information about what is offered, how to access, when it can be accessed, etc. This page is currently hosted at [www.viablereport.com](http://www.viablereport.com). For their development have been used web-oriented development tools, such as:

- WordPress as content manager: WordPress is a content management system or CMS (Content Management System) focused on the creation of any type of site.
- PHP and HTML as web languages: PHP is the language associated with WordPress, although in the case of this project both are used because of the functionality it provides and allows HTML.
- JavaScript and CSS: To design the page and get a style that attracts the user and get their attention.

In the following image can be seen a summary image of the structure of WordPress, roughly:

Once this page was developed and was made official, it can be said that it finished a small first phase of the project. Currently this page is still active maintaining its original structure, with minor modifications that are added to be in accordance with the web tool. Next steps were to start with the tool itself, being the most important and extensive part of the development process.

## WordPress:

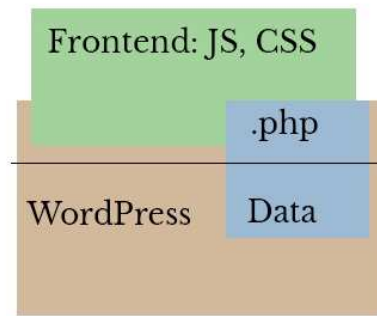


Figure 4.9: Wordpress structure.

## 4.9 Main phase

This phase covers approximately 8 months of work. Having been developed practically from scratch, Viable incorporates a great amount of technologies and computer resources, since it covers the whole cycle of an application, being this:

- "Front-end": It is a specialty for web development, which focus on the web interface and makes the user to interact with our web. It is oriented to brand language and web programming language execution on client computers, without the need to use external servers. Almost everything seeing on the screen when someone access a website is Front-End development, structured of paragraphs, sizes, margins between structures, fonts, colors, adaptation for different screens, mouse effects, keyboard , movements, displacements, visual effects... This would be the base in which the Front-end specialty is centered, formatting contents, developing the appearance of the web and manipulating results of obtained data.
- "Back-end": It is focused only on programming languages, oriented to

operations, working with internal data, creating applications that control data from the database of the web, to be consulted by the user. Also, creation of functions that perform an action or actions that control the good operation of the applications and creating operations structures and calculations to return results. Since technologies, languages, etc. used during the development have been previously stated, this section will focus more on talking about the progress that has been made and how problems haven been solved during the 8 months of work that this phase covers.

### 4.9.1 First complete version

The first objective was to develop a very basic first version to support the initial essential functionalities: to create a manageable environment for entrepreneurs and investors.

Investors would be offered a control panel in which they could have organized the business ideas of the entrepreneurs who apply to his edition. Each investor has the management of programs, and editions for each program, so that they can share a link of the edition that is currently open. Entrepreneurs who access the application through this link (URL) when saving their business idea will only be seen by this investor. Therefore, returning to the control panel, the investor has a view of 3 boards, referred to as "Rejected", "Revision" and "Accepted". In each one there will be none, one or more of a business idea, projects of the startups that obtained a rating (value from 0 to 10) when they registered their idea, after filling in the required information (remember the idea of "Worksheet") . This information required in the first instance was static for each investor; they released their Worksheet and it was implemented directly in the project. The latest versions incorporate a compendium of a large number of factors that they can add or remove, and

modify the importance they have for them. Thresholds for the idea appear in a panel and others are defined by the investor himself, and the more qualification the idea has, the more likely it is that it will catch the attention of the aforementioned.

In the image can be seen the example of what has been explained. The first row shows 3 rectangles, the first available program (s), the second the available edition (s) of the program and the third to modify the threshold by which business ideas are classified.

Then the three panels discussed and in them, several ideas that have been classified due to their qualification obtained.

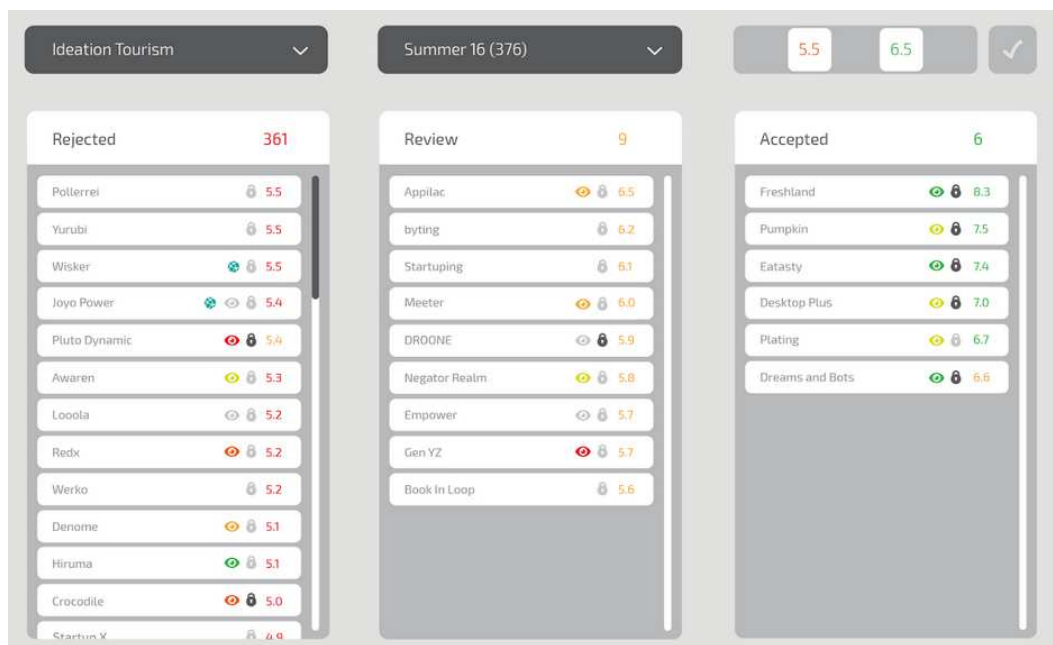


Figure 4.10: Viable tool: investor view.

They also have access to their profile to modify their own information.

On the other hand, in relation to entrepreneurs, they have access to another part of the application. These have an interface that shows a summary of the progress they have completed in relation to the information offered from

their business idea. This can be seen in the picture below. As explained in the Theoretical Framework section, a modular division of different aspects related to the business idea is made. In the main window of the entrepreneur, they can navigate through these modules by clicking and filling the information associated with this module. At the top left is a progress bar related to the amount of information filled in (total information). A menu on the right provides related information. This information is, project name, image associated with it, "program - edition" to which it is applying and their deadline (date in which that edition closes and from which no more ideas are accepted).

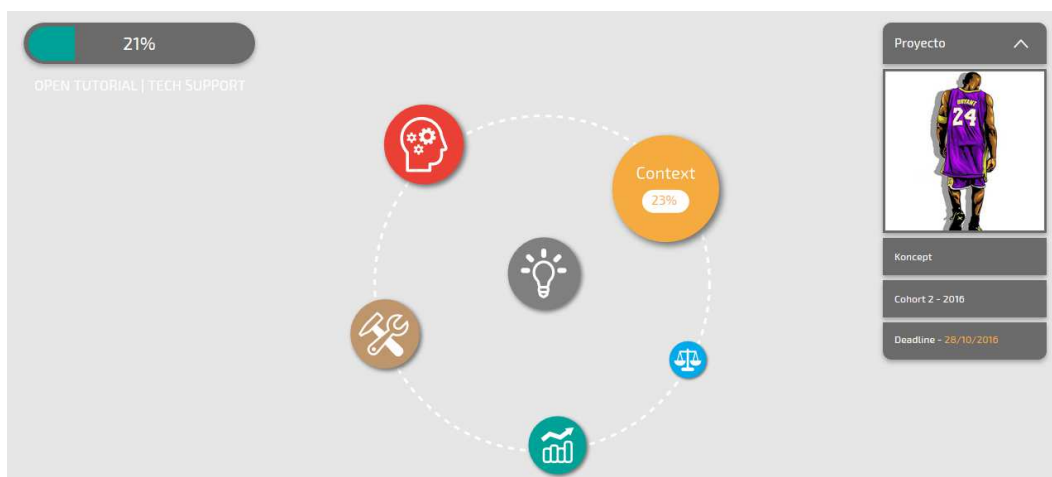


Figure 4.11: Viable tool: entrepreneur view.

Although previously to these results Viable was getting intermediate versions, it can be said that incorporating the elements discussed is "the first consistent version". The current state of the tool is that it is in Beta phase; at this point what is being done is to receive feedback from multiple investors who are currently using the web portal, so that they help the startup to achieve a really valuable and polished product.

## 4.10 Next steps

As it has been previously mentioned the tool is in a current phase of "Beta". This means that, although there is a version running with hardly any errors, it requires a greater robustness which is expected to achieve at the end of this Beta phase. Being a real product and the tool of this startup (Viable), it will never be reached to get a closed version with nothing to improve. Without counting the new functionalities that can be incorporated, it needs a frequent maintenance so as not to be obsolete.

In the near future, it is desirable to incorporate into the tool software based on the "Big Data" and "Machine Learning" concepts, in order to have an intelligent application far from the current static version that adapts to the user and provides suggestions and information based on his profile. In the next two subsections these two concepts will be discussed.

### 4.10.1 Big Data

As defined in [21], it is called Big Data to the management and analysis of huge volumes of data that cannot be treated and processed in a conventional way, since they exceed the limits and capabilities of the software tools usually used for capture, management and data processing.

This concept includes infrastructures, technologies and services that have been created to solve the processing of huge structured, unstructured or semi-structured data sets (messages on social networks, mobile signals, audio files, sensors, digital images, data from forms, emails, survey data, logs, etc.) that can come from sensors, microphones, cameras, medical scanners, images, etc.

The techniques of analysis of large volumes of information are one of the open paths for the future of the tool, since the goals of the project are getting large number of users handling it.



An example of one of the uses for Big Data analysis application will be based on the analysis of the decisions that the investors are taking so that the next ones that they will take will be more adjusted to what they look for. In addition, they will be provided with business ideas that fit last decisions or searches.

### 4.10.2 Machine Learning

According to the [20] by Andres Gonzalez, Machine Learning is a scientific discipline in the field of Artificial Intelligence that creates systems that learn automatically. Learning in this context means identifying complex patterns in millions of data. The machine that actually learns is an algorithm that checks the data and it is able to predict future behaviors. Automatically, also in this context, it implies that these systems are autonomously improved over time, without human intervention.

The amount of data that is currently generated in companies increases exponentially. Extracting valuable information from them is a competitive advantage that cannot be underestimated, since it can provide a great benefit to them.

The combination of applying Machine Learning and processing Big Data involves extracting valuable information, using data from users, from the application, etc. And the proper use of them is a competitive advantage that needs to be taken into account.

Being able to provide personalized information automatically, will give the tool an "intelligence" to provide a really valuable information to both users and the team, allowing them to continue to progress and increase the capabilities of the environment.

Logically, the application of these techniques requires more information in general than it has at present. But to be oriented in the face of this vision,

is a good praxis that in the near future will give a touch of distinction to the web portal that is being developed.



# Chapter 5

## Results and Discussion

Along this master's thesis has been developed a research on the business world, in particular on startups and their ecosystem, with special emphasis on the phases through which they pass, their impact on the economy, the different parts that exist in this world and what role each one plays, as well as their relationships. All the objectives initially proposed have been fulfilled, including the implicit objective of completing the work within the January-February call.

The first objective of the work has been fulfilled through the contextualization of the current status of startups in the business world, displaying data and statistics that show what has been its evolution and what impact they have today. Likewise, technical aspects have been introduced when investing, which are the key element on Viable's development: the heart of this project.

Viable arises from the primary need to reduce the gap between the different visions (or different points of view) of entrepreneurs and investors. Both roles have been defined and explained widely, presenting which role each person plays and justifying why they should approach the vision between both. However, this approach could be proposed in many different ways, so it was necessary to highlight what qualities technology brings, namely software to facilitate the lives of entrepreneurs and investors and to encourage the growth

of startups. An investment in technology is the most viable, since doing the whole process of looking for entrepreneurs that interest a certain investor (or vice versa, the matchmaking process, properly said) is already long, and do it by traditional methods (calls, manual research, fill in forms, going one by one trying to catch the attention of entrepreneurs or investors...).It means adding even more time and making it more tedious.

As an added value to the tool, Viable, it should be highlighted that there is nothing in the market that fulfills this function, proposing an innovative and original solution. That is why the development of this tool has been able to suppose the creation of a startup itself, and given the world for which it is designed it seems as the most appropriate way of working.

Throughout this document it can be seen how Viable has been growing as a startup at the same time as a tool, making of guide in the road that has been travelled during these last months.

Finally, delving deeper into the technical details of the tool itself than in its theoretical justification, much of its value comes from the many sources that feed it. Specifically, in order to create all the variables with which it works, numerous worksheets (factors, tests...) of different investors with different profiles have been taken into account.

Viable's growth and its successive versions have been guided at all times by the feedback of the investors of the company itself, obtaining a design guided by the customers who will use it in the future. This means a more personalized and friendly adaptation for each of the profiles and roles, without losing the main goals of the tool.

In conclusion, the document has covered all the aspects (objectives) that were raised in the initial sections and has explored, from a point of view from general to specific as it is the world of the startups, seen both, outside and inside.



# Chapter 6

## Conclusions

### Content

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In addition to the results obtained in the previous section, in this section it will be explained what conclusions can be abstracted from the development of this work.

On the one hand, the startup sector is booming and, as the statistics show, it seems to continue growing in the near future. This proposes the idea of developing tools for the entrepreneurial ecosystem as one with a high-success chance.

On the other hand, it can be concluded that the optimal way to reduce the gap between entrepreneurs and investors is to create a digital tool, such as Viable, that allows them to contact directly via online and, in general terms, to ease the most critical points present in the ecosystem.

### 6.1 Personal Reflection

During the development of this master's thesis I have obtained a great learning at all levels, both technical and personal. On the one hand, I have learned

a lot about the business world and everything that surrounds the world of startups, I have improved my ability to synthesize, write, read and English.

On the other hand, I have reinforced all the technical knowledge that I have acquired during the degree and the master through the development of the Viable tool and, in addition I have obtained new ones. Having worked for its construction from the first moment has allowed me to take the first steps of my professional life and to train to have a more complete profile.

I am very satisfied with the work I have done since I think this tool can be useful in the real world and make life easier for everyone involved in the startup world.





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