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Undergraduate Dissertation

INVESTMENT PROJECTS AND FINANCIAL VIABILITY:

TECNOLIS

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1. BUSINESS IDEA

In the Interior Design industry, there is often a fear of buying new products because it does not exist any kind of program that shows exactly how the final decoration will look. The industrial design is nowadays just offering 2-D planes that are very far from showing a realistic view. There are only a few companies that offer 3-D computer programs, but even those are not accurate at all and they have many limitations.

On the other hand, there is a promising technology; the augmented reality, which adds virtual information to the existing physical information and which has great advantages. Due to this reason, I did not want to lose the opportunity of using augmented reality to give to all customers the possibility to be sure of their purchase, and at the same time to help interior design businesses to increase their sales by having this augmented reality service available in their stores.

This technology has been already used in different fields of life and it has become one of the most revolutionary technologies of the moment and with the highest boom of popularity. Although, at the same time, this technology is still to be developed in the interior design industry and, in addition, it has a wide range of possibilities for the future that I want to consider for my business and I will explain in this document.

Nowadays, when someone wants to make a purchase of furniture for a house, they have to mentally imagine how the new furniture will look in the house, they could measure the sizes of the new furniture and calculate if it fits in the space that they have saved for it, but they will never be sure if it would match with the whole decoration because it is very difficult to imagine it perfectly. Even if a 3D computer program is used to see the final look of the new room, it will not be as realistic as if they could use Augmented Reality glasses to see it.

My proposal for the new business is to create a software that transforms a video taken from a mobile device into an augmented reality video. In this way, anyone could record a video of their home, recording a panoramic view of each room and with our software, furniture shops, real state agents, or any business of the sector could transform that video into an augmented reality video, that with the help of the augmented reality glasses that person would be able to observe how the new furniture will look in their houses.



This company (TECNOLIS) will be created in a period of technological advances and globalization, and I want to compete in a global market. This is why I will accept any means of payment contrasted as a payment through mobile, Bitcoin between others.

1.1 GOALS

My Main goal for this project is to create a business plan to know if my business idea could be profitable or not in the future. I have tried to choose an innovative business idea, which at first sight has many possibilities to succeed in the future. To get this I will firstly study the general and specific environment of the company.

After this I want to study the different strategies that I will follow in marketing, human resources and logistics.

Finally, I will make a financial analysis to know if the project is viable economically, because the initial budget of the project is not going to be very high, it might increase when the first positive results of the company appear.

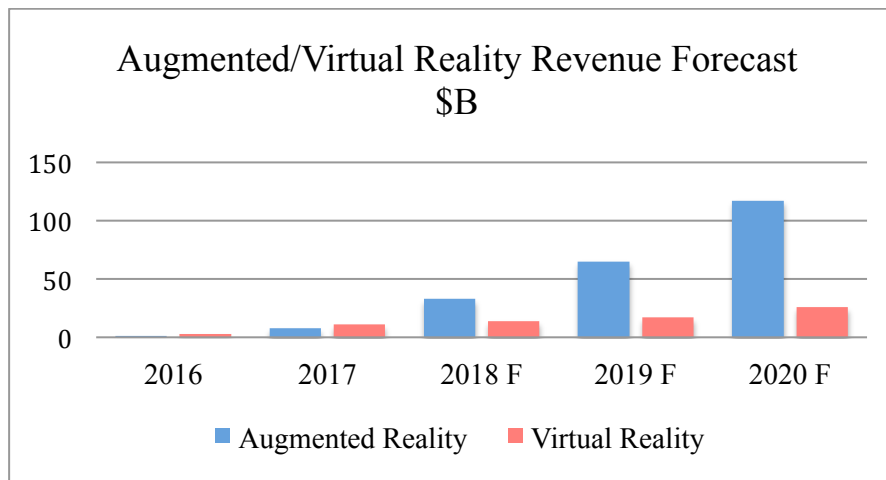
1.2 WHY AUGMENTED REALITY?

This new use of the augmented reality has been raised in view of the necessity that exists in the interior design industry to get a first knowledge of how the final decoration will look after a reform, a furniture purchase, or even when buying a house. If customers could just see the future house they are buying with a nice decoration it would be easier for them to take the final decision. Therefore, this technology could revolutionize the interior design industry and, in addition there are not many competitors in the market, just some substitutive products that cannot offer the same quality as augmented reality.

All this influences positively in the business by creating the opportunity to take a competitive advantage for being a pioneer in the industry of Augmented reality for the interior design industry. To consolidate this advantage, I will try to make good agreements with my suppliers and clients, to try to gain as much market share as possible, so new entrants in the market will have more difficult to success.

Also, the forecasts for this technology and for the virtual reality technology show an economic growth during the next years reaching near 120 billions of dollars in 2020.

. Figure 1: Augmented/Virtual Reality Revenue Forecast in Billion Dollars.



Source: *seekingalpha.com*. Own elaboration

Due to this necessity that exists in the interior design industry of improving the pre-sales service, augmented reality could be the key when helping customers with their purchase decision. This technology would solve all their doubts about the purchase, which would revolutionize all the interior design industry.

It is true that nowadays there are many computer programs that try to be realistic, but they cannot compete with the augmented reality glasses. In addition, the most expensive part of this business is to create the software, but apart from that first investment, the variable costs are going to be really low, so once I reach the break even point the cash flows will be really high. I just need to fix a competitive price that makes companies buy my product and build loyal relationships.

1.3 WHY BITCOIN?

The number of companies that are increasing their market share by using online sales is growing considerably. But, at the same time these companies that are evolving to adapt to the new trends, they still depend mostly on financial institutions for electronic payments.

Bitcoin is an alternative for not being attained to the financial institutions as trusted third parties for payments. In fact, Bitcoin is " an electronic payment system based on



Cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party."¹ Many researches certify that the banking system is about to change drastically, and in addition, this kind of crypto currencies avoid the intermediaries, and they are decentralized, thus no organization has power over them.

It is also true that the value of Bitcoin has been increasing lately and some people use it for speculation, but my goal with this technology (the block chain) is to use it as a currency, to integrate it in my business, for not depending just on banks and the decisions that the European central bank makes over the Euro. But this is all focused on a long-term perspective, I will be careful with it because Bitcoin could also be in a bubble and its price could drop drastically producing losses in my business. I would try to integrate it in my business when buying to my closest suppliers, paying some salaries and of course, accepting Bitcoins as a way of payment for my customers.

2. INDUSTRY

TECNOLIS S.L. is a company that belongs to the augmented reality industry for furniture stores and real state agents. In Spain there are more than 140 companies whose main activity is oriented to the augmented reality. The 65% of those are small companies with 10 or less employees, and the most part of them are dedicated to the marketing and the media Industry.

If we considered the **Gartner Hype Cycle for emerging technologies (Gartner 2017)**, we could observe that the Augmented Reality is still in the phase called “Trough of Disillusionment”. This is due to the reason that is a new technology that is still being developed. When a new technology is created there are certain expectations caused by the media, but then, after this publicity, some expectations are fulfilled by some companies and others not, this is where we can locate the Augmented Reality.

After this phase of disillusionment, it will come the Slope of Enlightenment, where the companies start to understand how this technology can benefit them. Finally, after this phase the technology will reach the plateau of productivity.

¹ Anon, (2017). *Bitcoin.org*. [online] Available at: <https://bitcoin.org/bitcoin.pdf>



The fact that the virtual reality seems closer to the plateau of productivity than the augmented reality does not imply that it will reach it sooner than the Augmented reality. Each technology takes different time in the different phases, but it is true that the forecasts for both technologies until they reach the plateau of productivity are from 5 to 10 years.

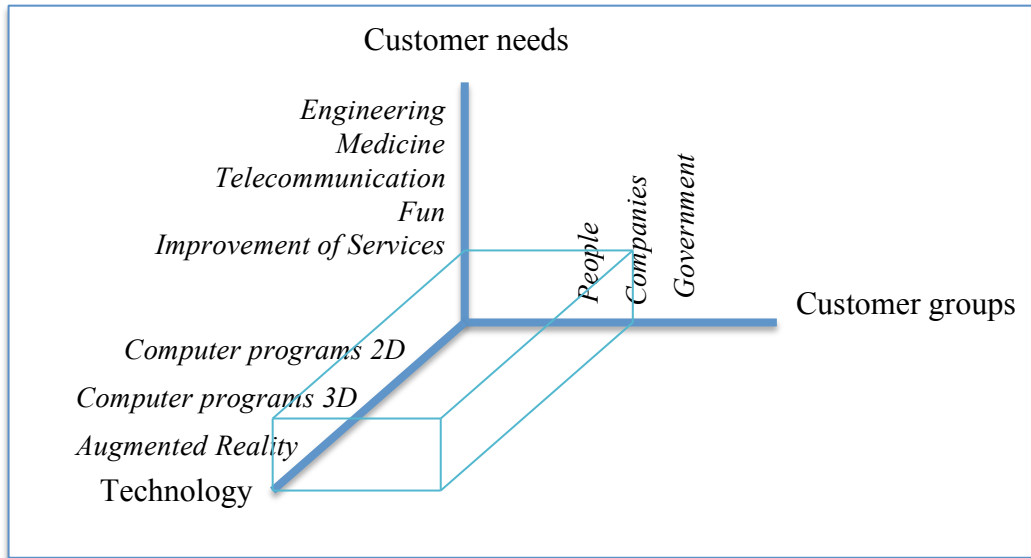
**See Annex 1. Figure 2: Gartner Hype Cycle for emerging technologies. (Gartner, 2017)*

2. 1 DEFINING THE BUSINESS MODEL: ABELL MATRIX

To define the Business Model I will use the Abell Matrix thus I will be able to analyze the scope of operation of the business and create strategies for the future. The three dimensions of the Abell Matrix are: the customer groups, customer needs and the technology. With this technic I will try to determine the competitive fields where the strategy will take place.

- **Customer needs:** There are different customer needs that are fulfilled with the augmented Reality. They comply different functions in the areas of engineering, education, medicine, telecommunication, fun and improvement of the services of any company. In the case of TECNOLIS, we work in the improvement of the sales service of different business in the interior design industry.
- **Customers groups:** I consider that there are different groups of customers benefited from this technology, they could be people, companies or the government but In the Case of TECNOLIS, this company is mainly oriented to companies, to interior design stores who need our augmented reality programs to improve their sales. In addition, people will also benefit from this technology, because the companies that are hiring it just want to hire this service for their customers.
- **Technology:** In this sector there are many kinds of technologies offered, first the computer programs in 2D, then the 3D, and finally the newest technology, the Augmented Reality.

Figure 3: Abell Matrix of TECNOLIS



Source: Own elaboration

2.2 MACRO-ENVIRONMENT (PEST ANALYSIS)

For analyzing the Macro-Environment I am going to take into account the Spanish situation because it is where the most part of the business activities will take place.

POLITICAL

The political situation of the country where the activity is carried out has a considerable influence on the companies that develop their activity in that country. This firm will work mainly in Spain, which is a country with a parliamentary monarchy. The three powers: the legislative, the executive and the judicial power are divided looking for a balance between the interests of social groups on the basis of political commitment.

During the last years, there was a bipartisanship in Spain, where the liberal and the conservative side were ruling the country. Despite the fact that there was bipartisanship, the most part of the regulations affecting companies were similar. But during the crisis the conservative party had to implement different restrictive measures that affected many companies as an increase of taxes or a decrease in the aids given to companies due to a huge deficit that had the country in that moment.

During the most recent years, when the country was trying to leave the economic crisis with those restrictive measures, and it caused a political instability that has brought an uncertainly environment where companies and investors were afraid. When the



conservative party won, most of this fear disappeared due to the fact that this party tries to implement more conservative measures that lead to a more stable economy. Spain is a safe country to start a business if we just take a look to the politics. It has been almost stable during the years; even though there was this uncertainty with the elections last year.

But it should be mentioned that nowadays, some Catalanian people are fighting for the independence. This gives instability in some way to many businesses as mine, because I am considering Catalanian interior design businesses as part of my target market, and their independence would make it more difficult. To be more precise: 9,092 companies out of the 37,358 companies that are in the peninsula are from Cataluña (according to the company that I have hired to create my database of companies that I should reach). My main idea was to cover the peninsula first, region by region and if necessary expanding it then to the islands and other countries. But as a first look, it would suppose a 24.33% of companies.

According to this I could say that the Political situation of Spain (the country in which I operate) could affect my business activity and gives a bit of uncertainty to it.

ECONOMICAL

Spain has gone through a very deep crisis that has had some impacts as a decrease in the sales of most companies that caused an increase on the unemployment rate reaching a 26.3% in February of 2013. Also this decrease in sales was so big because the savings rate of families increased and their purchasing power decreased, and, as a consequence some companies went to bankruptcy because they could not afford the high debts they had with banks or suppliers.

In the case of the banks, they gave many credits to companies that were unable to pay and they had to close their businesses to sell all the assets and try to pay the debts with this. Due to this reason, the banks are more aware now and firms have more difficult the credit availability. In addition, the interest rates increased with the crisis, making more expensive the credits. Now that we are growing economically, the interests are not as high anymore, and it is still difficult to get loans but the situation has improved. This will make easier for my business to get the loan I need for the initial investment of my company. Also, the fact that companies are growing it incentives investment, and This

could be a positive thing for my company, thus I hope that interior design stores, real state agents and any related business would invest in renting services like mine to improve their sales.

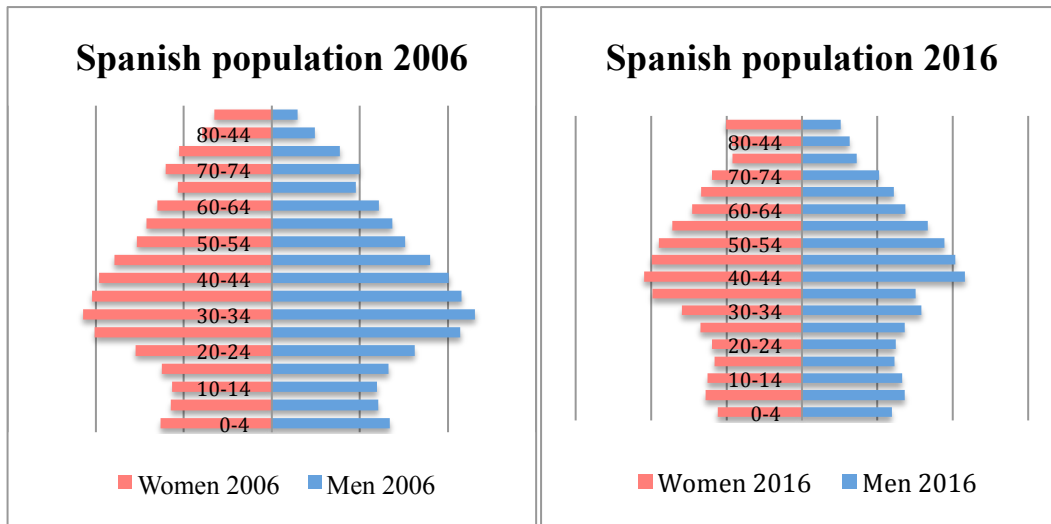
SOCIAL

It could be considered that the Spanish demography has been affected by the economic crisis. During the economic bonanza there was an upturn in the birthrate caused by all the immigrants that were arriving to the peninsula, which birth rates in their origin countries are considerable high.

When the economic crisis started, many of them lost their jobs, and they had to come back to their home countries, which caused a decrease in the birthrates. Another cause was the fear of the Spanish citizens to have kids with that economic situation of uncertainty.

In the following graph we can appreciate the Spanish population pyramid divided by group age, which is a clear example of a developed country. Here we can also observe how it affected the economic crisis as we have already mentioned.

Figure 4. Spanish population pyramid 06 / Figure 5: Spanish population pyramid 16



Source Figure 4: Datosmacro.com, Own elaboration.

Source Figure 5: Datosmacro.com, Own elaboration.

It is important to add that Spain is a developed country where the life expectancy is very high and the health system is public, so the investment that the government makes in



medicines is considerable high. On the other hand, the Education system is also public, to facilitate the education of all the population regardless their economic position.

Both Public Organisms are financed by the government through taxes that every citizen pays. They try to make them equitable to the level of salary of each citizen, the value of the goods that they owe, or the goods that someone consumes.

With the economic crisis, both the level of employment and the consumption of goods and services decreased. The lifestyles of the Spanish citizens changed; as they became more aware of the expenses that they had, they have increased their savings rates. At the same time, they made some efforts in reducing their leisure expenses, and all that had a negative effect on this kind of companies. This caused an increase in the unemployment rate, and due to all these reasons the collection of taxes decreased, and made it very difficult to maintain the same level of public expense, so the government had to make some reductions in it.

In this case, I don't consider that the demographic change could affect my business, thus it is not considerable high. Although, on the other hand, as I have just mentioned the lifestyles of Spanish citizens have changed, and with it the savings rates, therefore, if they reduce their consumption of decoration stuff, houses or furniture, it could cause that the companies that produce this goods stop renting services from businesses like mine.

TECHNOLOGICAL

The fact that everyday there is a major percentage of people with Internet at home is causing that the number of online companies is growing exponentially. For many companies it is more profitable to sell online than in a physical store because they save costs like renting, and also it is more comfortable for the consumer because he/she does not need to go to the store for buying the product.

In addition, there have been many technological advances in the online shopping that make more secure the online purchasing, and this has raised the number of online customers. All these advances and the comfort of receiving your purchase at home without the necessity of going to the store, and with the same privileges of buying in a store as free delivery of the purchase or free returns of them, have caused a great impulse of online shopping.



My business is oriented to the online selling, and every activity I am doing is going to be online. I will buy the glasses online through AMAZON to sell them to the companies that hire my services with the software. I have also hired a company to create that software, and I am renting a service from them thus they take care of the maintenance of the software with all the problems that this could cause to my customers.

2.3 MICRO-ENVIRONMENT

STRATEGIC ANALYSIS OF THE SECTOR

In this point I am going to analyze the specific environment of the company, describing the external factors related to the sector in which the company works, the interior design sector. I intend to do this study to make more viable the adaptability of my company to the sector in which it is going to work.

Between the external factors we could find:

CLIENTS

My target market is based on interior design stores, real state agents, furniture shops; My main goal is to attract the most part of this clients by taking advantage of my innovative business idea and about the fact that at first I will not have many competitors.

In addition, I want to build loyal relationships with my customers, fixing competitive prices thus they will just see all advantages in hiring my services. All the selling will be online thus it will be easier to meet the major number of customers and try to attract as many clients as possible. Furthermore, I will also offer the possibility to buy with different currencies as Euros, Dollars, Pound Sterling or Bitcoins that are starting to be used in many interior design stores around the world.

In this way I will be accessible for the maximum number of clients or potential clients and I will try to attract the most market share before the augmented reality for the interior design becomes more known.



SUPPLIERS

We can distinguish two different groups of suppliers in this company, first AMAZON who is the distributor of the Glasses “BOBOVR Z4” from Xiaozhai. These Glasses are can be distributed in one day with amazon prime. They are selling many glasses and the reviews are very positive. In addition we have had experience with this glasses thus we can trust them. Also, AMAZON sells many different Augmented Reality glasses for the same price and quality so if they ever run out of stock, AMAZON would have similar glasses to distribute.

My next supplier is PIXELDREAMS, which is the producer of my software and they will also rent a service of maintenance of it.

Both suppliers have a huge impact on my business activity since I could not develop the activity without them, so It is very important for my business to build good relationships with them.

COMPETITORS

This company is growing in an environment of low competition because it is a sector not really developed (The Augmented reality for interior design), but it is very important to attract customers quickly thus when the sector grows I will already have the highest market share and a competitive advantage over my competitors.

On the other hand there is a wide range of **potential competitors** in the industry, we can find companies producing computer programs for interior design stores, that are not as realistic as the augmented reality glasses, but they can be good enough for the companies that are looking for this kind of service.

One of the most famous companies that work with this kind of programs to attract its customers is IKEA. IKEA is not going to be considered as a competitor because its market share is focused on people willing to buy furniture and my market share are companies that want to offer to its clients augmented reality services. But on the other hand, the technology that IKEA is using could be considered as a competitor because my clients will want to compete with IKEA having the same technology or even better.

Its most famous computer program is the “Ike home Planner”

**See Annex 2. Figures 6 and 7. Ikea Home Planner simulator.*



As we can see in the pictures, this program shows a view of the distribution of the furniture, but it only can be used with IKEA furniture, which means that if you want to see the final look of the room, it must be decorated just by IKEA, or you will have to imagine the rest of the furniture, and as we can see, it is not completely realistic.

In addition, IKEA has also created the “IKEA Place” which works with augmented reality but it can only be used for IKEA furniture as well and only for new Apple devices. And in addition, IKEA has created this technology for its business activity so it is not going to sell the technology to any company.

IKEA could be considered a competitor for some of my clients, and the fact that IKEA has set a new differentiating element with the rest of the companies of the same sector by creating this augmented reality program, created a desire in my clients of acquiring the same technology to compete with IKEA. And this benefits my company, but at the same time this gives the idea to other companies of creating similar technologies, thus if this technology becomes more famous this could create an increase in the number of competitors for TECNOLIS.

**See Annex 3. Figure 8 : IKEA Place*

PORTER’S FIVE FORCES

COMPETITION IN THE INDUSTRY

Nowadays, the number of companies whose activity is focused on Augmented Reality Technology is growing; there are 72 companies in Spain.

**See Annex 4. Figure 9. List of Spanish Augmented Reality companies.*

But If we focus on the Interior design Industry, this number decreases drastically because this is a new concept that has not been developed yet. There are just a few companies like PIXELDREAMS, which have projects of this kind but they haven’t produced yet any technology like the one I am offering. And PIXELDREAMS, which is one of the most recognized companies for this technology is the one that will produce

my technology. We could say then that **there is a low competition in this specific industry**. It is still in the development stage.

POTENTIAL OF NEW ENTRANTS INTO THE INDUSTRY

For Developing Software for an Augmented Reality Technology it is needed a considerable investment. For example, the software that TECNOLIS will offer has an estimated cost of 100,000 Euros (VAT not included) to be produced, which is a considerable amount for a business that is starting.

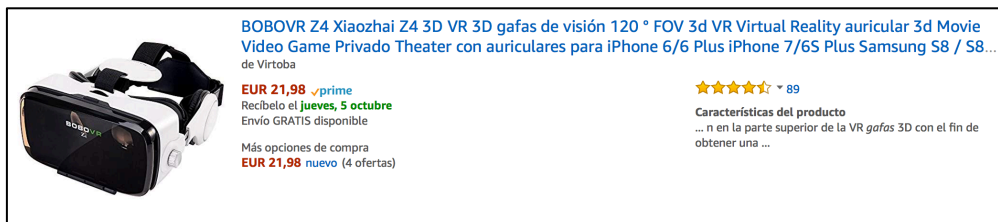
On the other hand, as every new industry, there are not entry barriers, which makes easier to have new entrants into the industry. In addition, the technology is in the development stage, thus the growing rate of new companies is bigger.

Many start-ups companies that don't have a huge capital to start, could consider this kind of economic activity, where after the first investment, the major cost would be the purchase of the VR glasses, and it could be related with the number of orders they have, so they don't incur in unnecessary costs. Due to this reasons we could say that **there is a high risk of new entrants into the industry**

BARGAINING POWER OF SUPPLIERS

Our main supplier is AMAZON, with the "BOBOVR Z4" glasses from Xiaozhai. AMAZON is one of the main distributors of this technology thus it has a considerable bargaining power, over its own suppliers (Xiaozhai) and over its clients (TECNOLIS).

Figure 10. Amazon "BOBOVR Z4" glasses.



Source: amazon.com

It could be said that its bargaining power in relation to us is high. At least at the beginning we will be a very low volume of sales in relation to the total ones. Although if we grew up quickly this could change, and then we could consider asking for a



volume discount or even contacting Xiozhai to avoid intermediates that will only make things more expensive.

In addition, it should be mentioned, that AMAZON is a company I trust, thus at the beginning at least, paying an intermediary to get the glasses on time is not such a bad idea.

If we pay attention to the **programming services**, we can find a wide range of professionals that work in this sector, so their **bargaining power is not very high**. But as I wanted to hire a solvent company, with many years of experience, I decided to focus on PIXELDREAMS. There are very few solvent companies that work producing this programming services in Spain, thus they gain bargaining power in the sense that if you want to buy from a company you can fully trust, the market is very small, and they have the bargaining power.

Recently, it has appeared in the market a new possible supplier of the software “Deusens”, an Aragonese company that programs applications based on augmented reality. It has received the 1st Prize of the program “Aragon Open Future” due to an AR application to visualize furniture (Heraldo de Aragón, October 19, 2017), which also shows that it is possible to develop this type of applications and that the technical part is sufficiently mature.

I don't consider a supplier to the **electricity company**, because when I rent the office, it is included the Internet, electric supplies and AC. Although, the company from which I am hiring the office “CIEM ZARAGOZA” has a **high bargaining power over us**, thus it has many companies willing to rent their offices.

BARGAINING POWER OF CUSTOMERS

The number of customers in the augmented reality of interior design is growing up due to the increasing adoption of this technology to the industry. If we take into account that our customers could be from any part of the world, and there are not many suppliers of Augmented reality programs for interior design, we could say that the bargaining power of our clients is not high.

On the other hand, it is true that they could use other substitutive instead of Augmented Reality like computer programs, and in that case our bargaining power would decrease.



In addition, there is no cost for the customers if they change from our product, to a substitutive one.

We cannot forget about the fact that this is a new technology, and many potential customers could be afraid about investing in adding this technology to their business. If there this uncertainty becomes a reality, it would affect the bargaining power of the customers. For these reasons, we could say that **there is a medium bargaining power of customers.**

THREAT OF SUBSTITUTES

In the Industry of Interior design we can find many substitutes of the Augmented Reality Glasses as computer programs of interior design in 2D or even 3D. Some of them seem very realistic, so they could compete with the quality of the Augmented Reality glasses, but the most realistic ones would be always the glasses, because they allow you to see how the new furniture would fit in your apartment as if it was already there. It could be concluded therefore that **there is a medium threat of substitutes in this industry.**

2.4 SWOT ANALYSIS

STRENGTHS

There are many favorable internal aspects of the company that strengthen the company's position in the market. One of those aspects, and probably the most important would be the fact that The Company is producing a very innovative product, with a low market competence, because the competence is based on substitutive products that don't have the same quality, the software has been done with the latest generation equipment.

This product will give the safety to our clients (Interior Design Shops and Real state agents) that their consumers will be more sure of the purchase they are making because they are seeing how it would look, and consequently, they will increment their sales, and in the case of furniture stores, it will be reduced the rate of return of purchased items. All this will place our product in a high valued product for our customers, and will probably build loyal customers. In addition, I should remark that it is a product that would be really cheap for the companies that buy it. They will rent the product for just



160 Euros per year (VAT not incl) that supposes 13.33 Euros per month, so it will not be a high investment for them, we offer the best relationship between quality and price and they can try it during some months, prove the efficacy that it has on their sales.

The simplicity of our activity is one of our key points too, our main activity is to reach for companies and supply them with other services. Services that we are not even producing, we already bought the software and now we will buy the glasses at the same time that the order is placed, following a Just in Time process, that not only reduces our expenses in unnecessary stock, that also, our lead time will be of one day, which gives us the opportunity to supply our customers as soon as possible.

During all this process we are reducing costs due to the fact that all the operations are being done through the Internet, which reduces many costs from hiring shop assistants, renting, and maintenance of the shop.

OPPORTUNITIES

The opportunities are elements in the environment that the business or project could exploit to its advantage One of the most important opportunities of this company is that the market of the augmented reality for interior design shops is not developed yet so it has the opportunity to grow fast and attract a big market share, then build loyal customer relationships by fixing low prices with the best quality and maintaining this competitive advantage over time.

Nowadays people give a lot of importance to the decoration of their houses, and this company has the opportunity to accomplish the necessity of the people that are not sure of buying furniture because they don't know if it is going to match with the whole decoration. We could give to our customers (interior design shops and real state agents) the certainty that with our product their customers will have a more clear idea of the purchase's final decision.

In the case of the real estate sector, we consider that our technology could help them even more; nowadays we have developed a software for their customers to see the apartments with the furniture before they buy them so they can have a better idea of how the apartment could look once they buy it and they furnish it. But, with more technological investment we could consider the option of creating software so they could see the house without being built but in the most realistic way. This would not be



a high investment for us, thus the biggest technological investment has already been done.

In addition, one last opportunity could be the option to develop an app for the phones, that everyone can download for free and with which people could use their cameras to record their rooms while they add furniture on them. This could be done with the use of the technology that we have developed for our augmented reality software. In this case, our way to get benefits from it would be by selling a spot in the app to the different interior design shops. They could add their furniture in the app so the clients could see how their furniture would look, and they would have the link for the online purchase in the same app so they could buy it immediately. Due to all the above-mentioned reasons, we can observe that there are a considerable number of opportunities for this new company, and if they are taken and studied carefully they could make TECNOLIS more successful.

WEAKNESSES

One of the most important weaknesses of this company is that it is a new product, not really known in the market of interior design, and the clients may be scared of buying it, there is a risk of not trusting the efficacy that it is going to have in their business. They need to be companies that want to be pioneers and want to add this technology to their business. And although the price of the service that TECNOLIS is giving them is cheap, they need to be willing to bet for this technology.

One of our strengths can become really easily a weakness. The fact that our Business activity is very simple is due to the fact that we depend on our suppliers to fully develop the activity, and without them we cannot operate. This creates the necessity in us of trying to maintain loyal relationships with them.

Other weaknesses is that we are a small company that has just started, and this is a huge weakness for this kind of companies because for any reform in the software to adapt to the new technological advances, it will be needed a high investment. And, the access to credit is not easy for new companies that haven't got proven success in a long term. We have already had access to the first credit for creating the software, but maybe if we need to invest again, it results very difficult. At the same time, it exists a high risk because we are investing a lot of money in something that we believe because we have



already elaborated a complete market and a economic analysis to see that this project could be successful, but it always exists the risk of failing and as we are a small company we don't have more resources to invest than the ones we will invest in the first place.

On the other hand, at the same time, if the business goes really well and we get an excess of demand we might not be capable to respond to it, and we should be really careful with the marketing programs to not have either lack of demand or excess of it.

THREATS

The main threat we have when launching the product is the uncertainty. As we have said many times during this study, we are going to be pioneers with this technology in the interior design industry, but this also created a lot of uncertainty about how the market is going to react. If we had some example of company doing the same we could expect how the market would act, but in this case the uncertainty increases.

In addition, as every new technology, there are not many laws regulating it and there is always the risk that a new regulation appears and it causes consequences in our business.

Other big threat of our Business idea is that it is very easy to copy, and if the business model works other companies will try to copy us, so we need to get a competitive advantage over them .On the other hand all the substitutive products that exist in the market also suppose a threat, they may be not as realistic as our product, but maybe some interior design companies decide that the computer programs in 2D or even 3D are enough for the necessity of their clients and they don't need the Augmented reality glasses with our program. We need to differentiate our product from all the substitutive that exist in the market and set competitive prices to deal with it.



Figure 11. SWOT analysis for TECNOLIS.

SWOT	INTERNAL	EXTERNAL
H E L P F U L	<p>STRENGTHS</p> <ul style="list-style-type: none"> - Product: <ul style="list-style-type: none"> o Innovative o High valued o Cheap price - Low market competence - Substitutes → don't have the same quality - Online sales → reduces costs - Latest generation equipment - Simplicity of the activity - Suppliers → Short lead time. 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> - Market not developed → <ul style="list-style-type: none"> o Fast growth o Attract market share - Possibility of establishing strategic alliances: <ul style="list-style-type: none"> o Fixing low prices o Offering best quality - Improve the software for Real State Agents - App for phones
H A R M F U L	<p>WEAKNESSES</p> <ul style="list-style-type: none"> - Product unknown in the market <ul style="list-style-type: none"> o Clients may be scared - Full dependence on suppliers - Difficult access to credits - Small company - High investment and risk of failing - IF excess of demand → not capable to respond to it. 	<p>THREATS</p> <ul style="list-style-type: none"> - Uncertainty about the market response - Easy to copy - Substitutive products → could be enough for our customers - New legislation affecting the sector

Source: Own Elaboration

3. STRATEGIC PLAN

3.1. THE VALUE CHAIN:

PRIMARY ACTIVITIES

Inbound logistics: I would buy the Augmented Reality Glasses from the distributor “AMAZON” because is the distributor that shortens the lead-time the most. It just takes one day since the order is done (glasses) until it arrives to the office. We will follow the “Just In Time” process, thus when we get an order from a customer we will order the glasses to AMAZON and once we receive them we will send them with the software to the company that has hired our service. In this way we will avoid a surplus of storage that we are not able to sell. At least, during the first steps of the company it is important to be very careful with the expenses. Also, as the business continues it will be maybe considered the option to produce the glasses rather than buying them, but for now that is not part of the plan.



On the other hand, it is important to maintain good communications with the producer of the software, who is renting to us a service of maintenance of the software and reparation of imperfects

Operations: The Company will try to reduce the costs by having good communication with both suppliers, PIXELDREAMS (software supplier) and AMAZON to ensure fast movements in case of error. This will also increase the quality of the service I am offering to my clients

Outbound logistics: We will try to be on time with the orders to satisfy the necessities of our clients as soon as possible. This is why we have hired a reliable provider of deliveries.

In addition, the software will be already created thus enable us to be more efficient in the delivery of our products. There is always room for personalization of the program that will be made in the most efficient possible way.

Marketing and sales: all the advertising has been carefully thought, trying to focus it on our target market by hiring a company that will create our databases and a freelance to create our dossier. In this way we will reach all our target market in the most efficient way.

A personalized selling will also be made, to add a value to the product. Offering to the possibility of adapting the software with some features to each business necessities.

After-Sales services: We rent our products, and the renting includes an after sales-service that covers the reparation of the glasses and any incorporations needed in the software. We are hiring a service to PIXELDREAMS of maintenance of the software, thus they will be in charge of all the after-sales service that includes problems with the software.

SUPPORT ACTIVITIES

Procurement: It has been established a strategic relationship with the main supplier of the software. They will produce it and then rent the service of maintenance and reparation of the software, we have built this loyal relationship with them in order to have quickly access to anything we need from them. High quality and experience were the key factors we looked at when considering the different suppliers.



The other supplier is AMAZON, which will deliver to us the glasses we need with the fastest service. For now we haven't negotiated sales volume but if our sales increase and with this the orders of glasses we will think about creating a deal.

Technology development: The main strategy is to invest in this new technology that does not exist yet in Spain for interior design, develop it and be the pioneers. If we get to be solvent pioneers, we could build loyal relationships with our customers by offering the latest technology with the best quality.

Human resource management: Instead of hiring Informatics Engineers that would develop the software but maybe they are not highly qualified in this kind of technology, I chose subcontracting a known company with many years of experience to produce this product with the best quality and technology so it will not be obsolete in a few years.

The cost of hiring the informatics would have been lower, but the subcontracting strategy gives us the certainty of having the most qualified workers doing our software.

Firm infrastructure: I will develop all the activities in an office that I am hiring to CIEM ZARAGOZA, which will cost 351.59 Euros per month, but includes: Light and air conditioning, Internet and telephone, Furniture, Business consulting, Conference room, 24-hour access This infrastructure will be enough for the kind of business I am developing and it is located in an environment of entrepreneurial people.

**See Annex 5. Figure 12. Value Chain*

3.2. LEGAL FRAMEWORK

I have decided to constitute the company as a New Enterprise Limited Liability Company (NELLC), which is a specialty of the Limited Liability Company (LLC).

I have chosen a limited liability company due to the reason that my responsibility will be limited to the share capital and I do not want to risk my assets. On the other hand, constituting a New Enterprise Limited Liability Company is much simpler than a normal Limited Liability Company, and in addition there exist a high number of advantages as:

- First I can get a quick constitution, if it is done by the telematics process it could be constituted in 48 hours.



- The company name will consist on the surnames and the name of one of the partners plus a unique alphanumeric code (ID-CIRCE) followed by the words "SOCIEDAD LIMITADA NUEVA EMPRESA (New Enterprise Limited Liability Company) or the abbreviation "SLNE". The process with the Mercantile Registry is done in less than 24 hours compared to three business days for other types of company name.
- The corporate purpose is generic to allow greater flexibility in the development of business activities without the need to change the company's bylaws.
- In addition The unipersonal New Enterprise Limited Liability Company is allowed, reason why at least at the beginning I will be the only partner.

3.3 COMPETITIVE STRATEGY

This business model is orienting the sale of its services to other businesses such as interior design shops or real estate companies, among others. Thus TECNOLIS customers are not the final consumer but they are the shops that want to buy our services for their customers.

The main activity of this company is to provide an augmented reality service which, in addition to being economic, is high quality and innovative because it makes use of home videos created by mobile devices in the space to be furnished and with the software they are transformed into videos of augmented reality that together with the glasses each client will be able to have augmented reality experiences.

Today there is no technology that performs the same functions as the software that TECNOLIS is creating. There are similar technologies, but nothing like it. That is why we are trying to set up a differentiation strategy, because it is a new technology that no competitor has and we want to differentiate ourselves in order to have a long-term future in the sector.

DIFFERENTIATION

Our strategy of differentiation aims to ensure that our service is perceived as unique, both by customers and even by the society that is going to be indirectly benefited by it.

The differentiation, with respect to our customers, will cause a loyalty towards the company, towards its services, making the demand less sensitive to variations in prices.



I am going to explain five key factors in which TECNOLIS will try to differentiate from the rest of the businesses:

Innovative design: The service's design seeks to break with the idea of furnishing or buying a house, seeks to create a need in the population to want to see how the thing will look before buying.

If we get the businesses to be satisfied with our service, our profits will increase, and they will continue to lease our service.

Quality: This is one of the strengths of our business. We have carefully invested the money to create the software with the highest possible quality, seeking the highest satisfaction of our customers, even raising their expectations.

Having a quality system will always help TECNOLIS stand out and get the customer's preference, as they feel more secure with our products or services.

Flexibility: We have created this software with the intention of being able to make modifications depending on the business model to which we are selling it, so that each client can satisfy their needs. Real estate agents and furniture stores will have different necessities for the software.

Flexibility is the key to enabling a company to react to changes in customer needs.

Prestige: TECNOLIS needs to be seen as a quality company, flexible and innovative, so this will give us a prestige that will raise the perceived value of our services.

It probably will not require a great effort to position our services in the consumer's mind because of the quality of the software, but this will build indirectly fidelity relationships with the customers if this service is satisfactory.

Competitive price: The price could be a key differentiator of the service with respect to the competition. The customer will always look for the service that meets their needs at the lowest possible price and in TECNOLIS we have tried to implement a price that customers perceive as low to attract their attention, and then, they will notice a perceived value of the service greater than the price they paid.

Focus: In this case, we have found a niche in the market of the interior design for this type of business and we wanted to take the opportunity and focus in this market to cover their needs.



First we will start focusing on a small market, such as Aragon and Catalonia (9,992 firma) and then we will increase areas of focus as we reach all customers.

As a pioneer company, TECNOLIS is trying to be prepared for future competitors, trying to dealing in advance with them by creating a competitive advantage to increase our sales and market share through this strategic business plan, which will be the basis for establishing the strategy of operations in the short, medium and long term.

4 MARKETING PLAN (4P)

4.1 PRODUCT

The product we are selling is an augmented reality service that is used by furniture stores, interior design businesses, and real state agents to give to their clients the opportunity of having an augmented reality experience with the product they are buying. This is done to allow them to have a clearer idea of the product, if they really like it and avoid disappointments.

The service we are offering consists in installing a software in the computers of our clients (interior design companies) which will transform videos taken with a camera into augmented reality videos, that with the help of augmented reality glasses will give to their clients the opportunity to have an augmented reality experience before the purchase.

In the case of the interior design stores, their customers will take the videos, and they just need to be recorded showing a panoramic view of the room, or showing the space where they want to locate the new furniture. The software will transform that video into a an augmented reality video, and in addition, the software will have all the furniture of the shop downloaded in it, so it can be added to the video, and with the Augmented reality glasses, that person will see how it will look.

On the other hand, the real state agents will use the software to transform videos that they take of the empty houses with their phones into augmented reality videos, and they will have the option to add different furniture that will be already downloaded in the app for them. It is a product that does not exist yet, is innovative and we will need to develop it carefully to avoid errors.

4.2 PRICE

The price is one of the most important decisions to be made when launching a new product in the market. I have used the “method of successive ratios”.

37,358 firms compose my target market in Spain. And I have taken into account some factors when deciding the price.

- The “**Home Staging**” is increasing the sales of the real state agents considerably. This technique consists in decorating a house before selling it to make it more desirable. This is a **proven fact, furnished houses are easier to sell**, but real state agents need to invest in high amounts of money for this that would not be necessary if they acquired my technology.
 - If it is proven that furnished houses are easier to sell, more real state agents will be willing to acquire my technology.
- In the magazine *20minutos.es* appears an article saying “According to data from the General Council of Notaries, **home purchase increased** by 2.6% in July compared to the same month in 2016 (2.9% in the seasonally adjusted series), to a total of 45,710 transactions.”²
 - If people are more willing to buy houses, there will be more real state agents, and they will spend money in methods as mine to attract clients.
- According to *ideal.es* “The **furniture and decoration sector increased** exports by 38%”³ In the same article it says that the companies are increasing their overall sales.
 - Which means that these companies are growing because of the increase in the demand after the crisis, thus they will be more willing to invest in my technology to attract more customers now that they are increasing.

All these factors contribute to create a better estimation of the sales. From the 37,358 companies that are inside our target market, we are going to try to reach 9,918 firms in

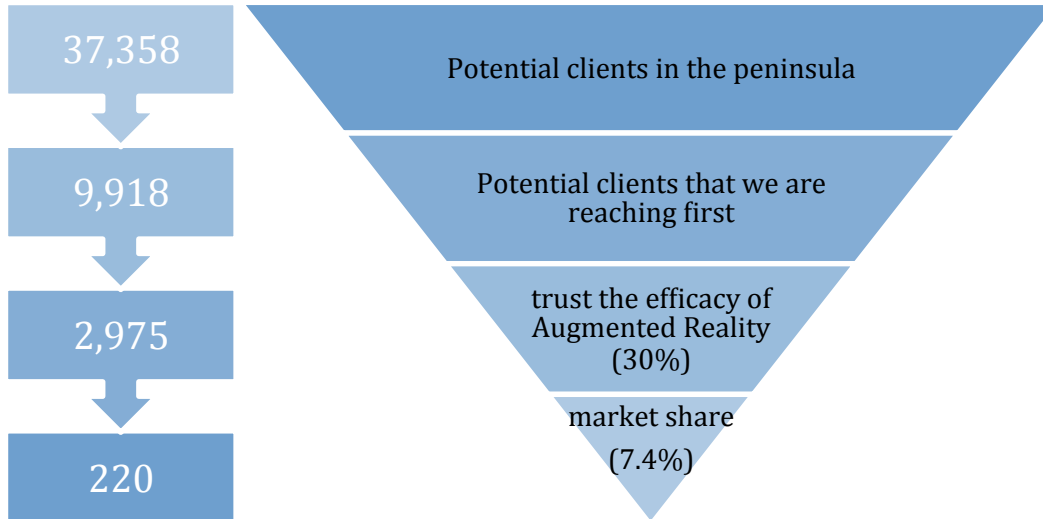
² 20minutos.es - Últimas Noticias. (2017). *Los notarios confirman que la compra de viviendas aumenta y su precio (medio) baja* - 20minutos.es. [online] Available at: <http://www.20minutos.es/noticia/3137487/0/venta-vivienda-precio-julio-2017-notarios/>

³ Ideal. (2017). *El sector del mueble y la decoración incrementa un 38% sus exportaciones*. [online] Available at: <http://www.ideal.es/jaen/provincia-jaen/sector-mueble-decoracion-20171002205438-ntvo.html>

the first year. We will focus our marketing at first to these 9,918 firms that correspond to Aragon and Cataluña and then we will expand it through the peninsula and more.

In the following graph we are calculating the market share for the first year:

Figure 13. Method of successive ratios.



Source: Own Elaboration

*We expect to reach 220 companies the first year, and increasing this number year in a 15% during the first five years, thus during the first five years we will have achieved 1484 companies. (We suppose for this research that these companies are hiring a one year service)

Price of the product = 160 € / Year (without VAT) → 193.60 € (VAT included)

Price per month $\frac{180}{12}$ = 13.33 €/Month (without VAT) → 16.13 €/month (VAT Included)

This price will be established when companies hire my services for one year, if not it will be a 20% more expensive per month. I want to reward loyal customers.

The final prices for my company will be:

Figure 14. Prices.

	PRICE PER YEAR	PRICE PER MONTH
Loyal Customer (12 months service)	160 Euros + VAT	13.33 Euros + VAT
Regular customer (month by month)	216 Euros + VAT	18 Euros + VAT

Source: Own Elaboration

*VAT= 21%



Our estimations plan to achieve 1,484 customers in 5 years period. This means that we expect 1,484 firms to hire our services during one year (if a company hires our services during more than one year, we will account that company as a new client every year for this estimation)

Now I need to calculate the break-even point to see if I will recover the investment in this time period.

BREAK EVEN POINT:

$$BEP = \frac{\text{Fixed Cost}}{(\text{Price} - \text{Variable Cost})} = \frac{110,619.63}{(160 - 18.165)} = 775.26 = 775 \text{ firms}$$

*18.165 is the Price of the Augmented Reality glasses without VAT (21.98 VAT incl.), The unique variable cost my company has, due to the fact that the renting includes electricity expenses among other services.

I will need that 775 firms rent my services during 1 year, or the renting of my service 775 times (it can be distributed during many years and companies can repeat the purchase) to reach the break even point.

According to the estimation, we are going to have 1,484 firms, so we will reach the break-even point.

4.3 PROMOTION

The promotion of the service is going to be focused on its target market. I have hired the services of the company “Axesor” that is going to create a database of all the firms that are in my target market.

I will hire a service called “telemarketing” to obtain the NIF, Name, Telephone, Contact Person and Contact Person's Charge of each of the companies that are part of my target market. I will also add the option to get the complete address of the firms and the URL.

In the following table I saw the invoice that corresponds to that company:

**See Annex 6. Figure 15. Axesor Invoice of 9.918 firms.*



I will also subcontract the service of elaborating a dossier to a freelance. The price he charges me is 2,000 Euros + VAT. I will hire his services because he was working in the same company that I was doing the internship thus I have already seen his work.

Once I get the database and the dossier I will be the person in charge of contacting all the firms, sending them the dossier with my business activity, and offering to them the services I am doing.

I decided to start working first in Aragon and Cataluña because there are 9,918 firms in the sector and it is a good quantity to start. Then, I would increase that number to the rest of Spain, which is 37,358 companies. The total price of getting this database would be 5995.84. But I would ask for the databases when I complete the advertising in the first regions.

Here you can observe the invoice of the complete database, but I plan to ask first for the invoice that corresponds to Aragon and Cataluña, and then increasing it.

**See Annex 7. Figure 16. Axesor Invoice of 37.358 firms.*

In addition, having a web page for a company like mine is essential. I have created a simple but clear webpage where my clients can find the things they are looking for very easily.

**See Annex 8. Figure 17. Web page of TECNOLIS*

The video that I include in the webpage is a demonstration for the potential clients, so they can have an idea of the quality of my services. It is very important to create bonds of trust with customers, and the first step is to have a web page that transmits seriousness and shows the quality of the product or in this case service.

<https://www.youtube.com/watch?v=MSAPM4mohP0&feature=youtu.be>

**See Annex 9. Figure 18. Tecnolis video*

4.4. PLACE

Initially, my office will be located in Zaragoza because all the sale of the products is going to be online, thus I don't need any specific location.

I have selected CIEM Zaragoza because is an incubator of the City of Zaragoza, managed by the company Initland, which facilitates the accommodation and various



services to newly created companies and free-lances, offers them a strategic business support plan to make their development more adequate.

I feel very connected with the culture of the place and It could be the best environment to develop my business. Their main objectives are: supporting technological innovation, promoting the social diffusion of new technologies, reinforcing the role of the city and give prominence to environmental and economic sustainability.

Nowadays, for companies it is important to have a good impact on the society because it could be reflected in the volume of sales (thus customers feel better buying in socially responsible companies), and CIEM is working in that direction so I considered it as the best option to locate my office.

On the other hand, the sale of this technology will be oriented to interior design shops, real state agents and all related business of Cataluña and Aragon, because there are 9,917 companies in this sector, and once I have covered the advertisement in these, I will extend it through Spain.

The sale of this product is estimated to be mainly in Spain, where the augmented reality for the interior design sector is still not very developed. In addition, Spain is one of the countries where there is greater interest in this technology, and it is given a great importance to the decoration of the houses, in fact, 6 of the most important fairs of the world of decoration are celebrated in Spain, among them we find : “Intergift Madrid”, “Feria Cevisama”, (Valencia), “ShowRoom del Mueble” (Barcelona), DecorAcción (Madrid), “Feria del Mueble de Yecla”, (Murcia), Feria Valencia Hábitat.

The rest of the Decoration fairs are located in France, Germany, Great Britain and the United states, where I could also focus with the sale of this technology

5. ECONOMIC PLAN

5.1. COST ANALYSIS

FIXED COSTS

The Software: The Company “PIXELDREAMS” has estimated a cost of 100,000 Euros.

**Annex 10. Figure 19. Pixel Dreams Cost estimation.*



Renting: 351.59 Euros/month. As I have already mentioned the office will be located in CIEM Zaragoza and the renting includes the furniture, the electricity and water expenses.

Zoho: is the name of a set of web applications that include Accounting apps, Financial Apps, Apps for saving the information of clients... (more than 20 apps where all the activities of the company are saved)

Pixel Dreams service: PIXELDREAMS also offers a service of maintenance of the software for future problems.

Computer: “IMac with retina 5K display of 27-Inch” Costs 2399 VAT Incl.

Constitution Costs: According to Circe, the constitution expenses of a New Enterprise Limited Liability company are (€ 440.19):

- Registration = € 13.94
- Messenger = € 11.94
- Notary’s office = € 210.55
- ITP and AJD = € 30.06
- Registration in the commercial register = € 123.78
- Instance in the mercantile registry = € 0.30
- Minute book and partner book = € 30.10
- Legalization of books: €19.52

Advertising:

- Dossier: The dossier will be done by a freelance for 2,000 Euros+ VAT
- Telemarketing: Done by Axesor. Acquiring a database with 9,919 companies.

Figure 20. Fixed Costs for the First Year.

FIXED COSTS		PRICES WITHOUT VAT
SOFTWARE	100000+ VAT	100,000.00
RENTING	351,59/month	4,219.08
ZOHO+ PIXEL DREAMS	660+ VAT	660.00
COMPUTER	2399	1,982.64
CONSTITUTION COSTS	441	441.00
ADVERTISING	DOSSIER	2,000.00
	TELEMARKETING	1,316.91
TOTAL		110,619.63 €

Source: Own Elaboration

5.2. INITIAL INVESTMENT AND WORKING CAPITAL

Figure 21. Initial investment

	1st YEAR EXPENSES
Constitution Expenses	441.00
INTANTIBLE ASSETS	
Software	100,000.00
TANGIBLE ASSETS	
Equipment for processing information	1,982.64
TOTAL TANGIBLE ASSETS	1,982.64
TOTAL INVESTMENT	102,423.64
VAT	21,416.35
TOTAL AMOUNT OF THE INVESTMENTS	123,840.00

Source: Own Elaboration

For the initial investment that I need to disburse 123,840 VAT Included. I have 25,000 Euros in a bank account and I will ask to a bank for a Loan of 105,000.

AMORTIZATION: LINEAL AMORTIZATION

To perform the depreciation plan we will use what is established in the Tax Agency. According to the Tax Agency, the amortizable elements would be the software and the computer.

It is necessary to take into account the maximum coefficient and the maximum years to be amortized. At the end of the sixth year, all the items will be amortized; there will be no residual value. The amortization schedule of the project would be summarized in the following table:

Figure 22: Amortization schedule

AMORTIZATION		Max coeficient	Max years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
SOFTWARE	100000	0,0033	6	16666.67	16666.67	16666.67	16666.67	16666.67	16666.67
INFORMATION EQUIPMENTS	1,982.64	0,25	8	330.44	330.44	330.44	330.44	330.44	330.44

Source: Own Elaboration

WORKING CAPITAL REQUIREMENTS

WCR are “The required value of funds that a company is required to keep on hand in order to be able to pay its debt obligations and other business related expenses. Several factors go into the determination of this requirement.”⁴

For this company, the working capital requirements are: The renting of the office for one year (that includes electricity and water expenses among others), the marketing expenses for the database of companies and finally the services of maintenance of the Software and Zoho. I don’t take into account the Software production cost or the Marketing Dossier because they are purchased once, and not every year.

The working capital requirements amount 6,195.99

**See Annex 11. Figure 23. Working capital requirements*

5.3. FUNDING

The creation of this company requires a considerable initial investment for which I am going to need a loan, I also have savings that amount 25,000 Euros, but they are not enough. Once I studied the multiple options available I decided to do this operation with “CaixaBank”. The loan type is called “Préstamo estrella”, it amounts 105,000 Euros to be paid in 60 equal monthly installments of €1,969.48 (4.75% fixed interest).

**See Annex 12. Figure 24. Data of the Loan*

The loan will be paid monthly, but to do the study the cash flows I have simplified it:

Figure 25. Payments of the Loan

YEARS	Σ Installments	Σ Interests	Σ Principal Payments
1	23,633.71	4,576.15	19,057.56
2	23,633.71	3,650.95	19,982.76
3	23,633.71	2,680.83	20,952.88
4	23,633.71	1,663.61	21,970.10
5	23,633.71	597.01	23,036.70

Source: Own elaboration.

To see the entire table: ** See Annex 13. Figure 25. Loan Schedule*

⁴ BusinessDictionary.com. (2017). *What is working capital requirement? definition and meaning.* Available at: <http://www.businessdictionary.com/>

5.4. INCOMES:

CASH FLOW WITH THE LOAN

For calculating the revenues, I have distributed the estimation of 1,484 companies among the 5 years, taking into account an increase of a 25% in the number of companies every year as shown in the following table:

Figure 26. Calculation of Revenues

	1	2	3	4	5
N OF COMPANIES	220	253	291	335	385
PRICE	160	160	160	160	160
REVENUE	35,200.00	40,480.00	46,560.00	53,600.00	61,600.00

Source: Own elaboration

Through the study of the cash flows we can analyze the liquidity of the company, understanding the ability to meet existing short-term obligations.

Figure 27. CASH FLOW

	0	1	2	3	4	5
REVENUE		35,200.00	40,480.00	46,560.00	53,600.00	61,600.00
GLASSES COST		-3,996.36	-4,595.82	-5,286.10	-6,085.37	-6,993.64
ZOHO COST+PIXEL DREAMS		-660.00	-660.00	-660.00	-660.00	-660.00
RENTING+MARKETING COSTS		-6,195.99	-6,195.99	-6,195.99	-6,195.99	-6,195.99
(-) DEPRECIATION		-16,997.11	-16,997.11	-16,997.11	-16,997.11	-16,997.11
(=) OPERATING INCOME		7,350.54	12,031.08	17,420.80	23,661.53	30,753.27
(=)EBIT		7,350.54	12,031.08	17,420.80	23,661.53	30,753.27
(-)INTERESTS		-4,576.15	-3,650.95	-2,680.83	-1,663.61	-597.01
(=) EBT		2,774.39	8,380.14	14,739.98	21,997.92	30,156.26
(-) TAX		-416.16	-1,257.02	-3,684.99	-5,499.48	-7,539.06
(=) NET INCOME		2,358.23	7,123.12	11,054.98	16,498.44	22,617.19
(-) INITIAL INVESTMENT	-104,423.64					
(+)LOANS	105,000.00					
(-)REPAYMENTS OF LOANS		-19,057.56	-19,982.76	-20,952.88	-21,970.10	-23,036.70
(+) DEPRECIATION		16,997.11	16,997.11	16,997.11	16,997.11	16,997.11
(+/-) INCREASE IN WCR	-6,195.99					
(+) RECOVERY WCR						
(+) RESIDUAL VALUE						
(=) CASH FLOW	-5,619.63	297.78	4,137.46	7,099.21	11,525.45	16,577.60

Source: Own Elaboration



The EBT of the first year is negative, so that year we don't pay taxes, but the second and third year it is positive and we will pay a 15% and the rest of the years a 25%. In this way we will be following the rules of the Spanish Tax agency.

In addition, the Cash flows of the first two years are negative but then they become positive and increase year by year considerably. With the cash flows we can analyse the financial viability of the Project by calculating the IRR, NPV and Payback.

6. FINANCIAL VIABILITY OF THE PROJECT

6.2 NET PRESENT VALUE

Firstly I have analyzed the Net Present Value (NPV), which is the present value of the stream of cash flows that an investment promises to generate over its life.

$$NPV = -C_0 + \sum CF_s(1+i)^{-s} = 27,329.54$$

As the net present value is positive, the investment is viable.

6.2. INTERNAL RATE OF RETURN

The internal rate of return for the Project is **69.82%**, which indicates the expected growth rate of it. It may be seen that the Internal Rate of Return is very high, but we need to consider that we are taking into account the loan for the study of the cash flows, which makes the IRR ratio higher. In addition, this project has a high risk, so it would always require a high growth rate to counter the risks that are taken. This ratio is lower than the cost of capital (4.75%), so we could conclude that this is a profitable project.

6.3. PAYBACK

“The payback period is the length of time required to recover the cost of an investment”⁵ $\sum CF_s = C_0$

The payback for this Project is **3 years, 2 months and 1 day**.

⁵ Staff, I. (2017). *Payback Period*. [online] Investopedia. Available at: <http://www.investopedia.com/terms/p/paybackperiod.asp>

6.4. SENSITIVITY ANALYSIS

One of the causes why the Internal Rate of Return was so high (69.82%) is because I was taking into account the 5 years loan, if we did not have asked for the loan and we had just own savings it would have been 11% (considering the same cost of capital).

** See annex 14. Figure 28. Cash Flow without loan*

This is why I wanted to study how would affect an increase in the cost of capital to the Net Present Value that includes the loan and to the other one. And, as we can see in the following table, The project with the complete cash flow is going to be more likely to be viable, because only if it has a cost of capital equal or higher to 69.82% it would be not viable. On the other hand, if the work of capital was higher than 11% and we did not have asked for a loan the project would not be viable.

This occurs because when discounting the cash flows their value decreases. Therefore, if the loan is not requested, there is a really high initial disbursement, and although all other cash flows are very high (Because there is no loan to repay) they are discounted, but when applying for a loan, the initial disbursement is much lower.

COST OF CAPITAL	NET PRESENT VALUE (Cash Flow with Loan)	NET PRESENT VALUE (Cash Flow without asking for a Loan)
4.75%	27,329.54	23,160.84
6.18%	25,617.42	17,568.92
8.03%	23,563.70	10,814.74
10.44%	21,153.75	2,816.98
13.57%	18,401.69	-6,424.93
17.64%	15,361.77	-16,793.16
22.93%	12,135.56	-28,023.26
29.81%	8,869.16	-39,701.44
38.75%	5,736.16	-51,302.94
50.37%	2,906.58	-62,273.75
65.48%	510.51	-72,136.47
85.13%	-1,389.03	-80,581.58

7. EVALUATION AND CONCLUSION

Having a good business idea may seem the most important fact when creating a Business, but the truth is that there are many good business ideas that don't succeed. One of the main causes tends to be a poor design of the business plan, which is often stuck in the superficial part instead of being detailed and realistic. A good business plan analyses all possible decisions prior to the official creation of the business. From analysing the environment in which the company will be developed, as the company itself with each of its commercial, strategic or even financial decisions. Finally it is necessary to do a good economic-financial study in which the viability of the project is studied.

I have tried to deal with each of these points with the project of TECNOLIS; When studying the environment, we could observe that this company is operating in an industry to exploit. Being a pioneer company, carries out many advantages such as the possibility to attract the market share really quickly before competitors enter in the market, but at the same time, it also has some drawbacks as all the risk taking that being a pioneer implies.

On the other hand, in the Macro-Economic study we observed that the majority of external variables favor TECNOLIS due to the actual situation of the country in which the main activity will be developed, Spain. Both, the economic field, with the exit of the financial crisis (that favors the businesses by promoting the consumption), as the political field by being a country with parliamentary monarchy and division of powers with stable laws, or even the social, they all bring an environment of stability that is clearly beneficial for companies. In addition, the technological field has also a positive effect for the fact that we are in an era of technological advances that drives the investment of companies in technologies like mine.

In the internal analysis we observed how this company has almost no competitors, but on the other hand depends to a great extent on its suppliers to develop its activity. In addition, there is the risk of new competitors entering in a business model so easy to copy, and the threat of substitute products such as 2D or 3D computer programs.

In the SWOT analysis, we could notice the multiple opportunities that a business like this has and how it could achieve them. Although, at the same time, we saw some



threats as the great risk of selling a new service in this industry that is still to be developed.

In the strategic plan It was explained the value chain and the competitive advantage of this company, which consists in following a strategy of differentiation of many aspects of the business, including a long-term perspective about how to maintain this competitive advantage.

Of course it could not be missed a good marketing plan to attract as many customers as possible and maintain them. There the 4P where analysed; Price (establishing a very competitive price to create loyalty bonds with our customers), product (offering a high quality product that will cover the great need that exists in the interior design market), promotion (creating a good website with a presentation video so that our clients can appreciate the quality of our products), and place (locating us in CIEM, an environment of entrepreneurs and with a very affordable price)

Finally, and one of the most important parts of the project, I did an economic and financial analysis in which I calculated all the costs and the initial investment, I did a research about the different ways of financing the project and I chose the one that fits better, looking always at the financial viability of the project.

I could conclude that TECNOLIS is a profitable project (after studying the IRR, NPV and Payback with the sensitivity analysis), there will not be any solvency problems and, although there exist some external risks that could affect the company, it is internally really well organized, thus if the steps to solve the possible problems are done this company has a good chance to succeed.

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