

UNIVERSITAT POLITÈCNICA DE
CATALUNYA

MASTER OF SCIENCE IN COMPUTATIONAL
MECHANICS

ENTREPRENEURSHIP

Business Plan

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1 Executive Summary

With the number of elderly growing on virtually every country in the world and the fact that many of them are sedentary and subject to unresolved circulatory problems, our company saw the opportunity to fill the gap on the exercise machinery business. According to our bench-marking, absolutely no competitor fully satisfies the needs of people of age who want to improve their health.

Throughout the design of our product our team of engineers truly considered the needs, difficulties and wishes of the users. From the start our goal was to provide a better possibility for elderly to maintain and improve their health. Understanding that they are way less subject to joining gyms, but also don't feel comfortable having to go to physiotherapy centers was crucial when deciding to develop a portable device one could use at home.

Different from our competitors, our product is extremely easy to use, lightweight and offers a exercise with adjustable levels that can truly improve the life quality of the users. One of the main qualities of the product is that it gives the person independence to perform exercises whenever he or she wants in a safe and simple way.

The product, named "HA! Healthy Again" consists of a portable ergometric apparel for low-impact activities. It can be used to move both arms and legs on a repetitive motion on a very straightforward manner, improving blood circulation and avoiding heavy exercise apparel such as static bicycles or elliptical machines. The potential is high, with a market share of only 0,3% of elderly in Spain gross profits can be higher than € 70,000.00 a month.

2 Market research and Analysis

2.1 Context

On the past 40 years the share of elderly people in the world grew from 8 to 13% and is expected to grow further to 16% until 2030 and to over 20% in 2050 [1]. This is well perceived in the Figure 1. In Spain alone, the proportion of the population aged 60 or over is already reaching 19% [2], although it's still under the European average of 25% [1].

Another known fact is that older people tend to be more overweight. As Figure 3 shows, obesity levels reach further than 20% for more advanced

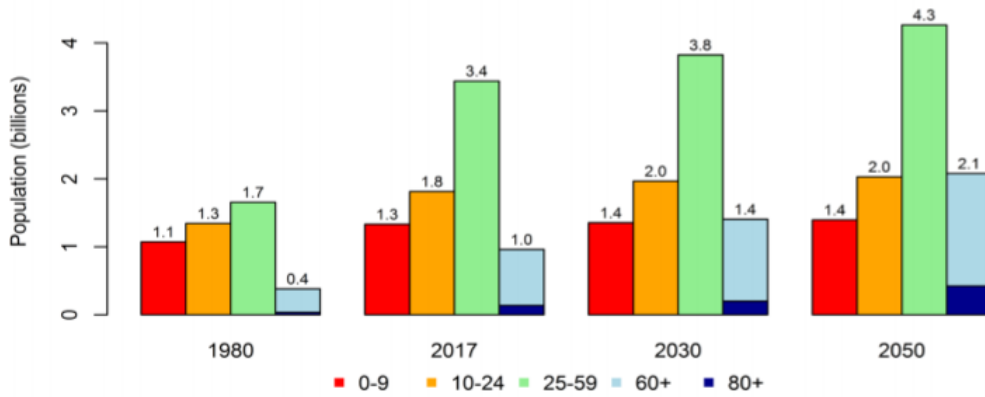


Figure 1: Global population by age group [1]

ages. Adding the people who are only overweight, the figure rises to almost 70%. This corroborates with the fact that elderly typically don't do exercises. More than half of the population over 65 in Spain claim they live a sedentary life [2].

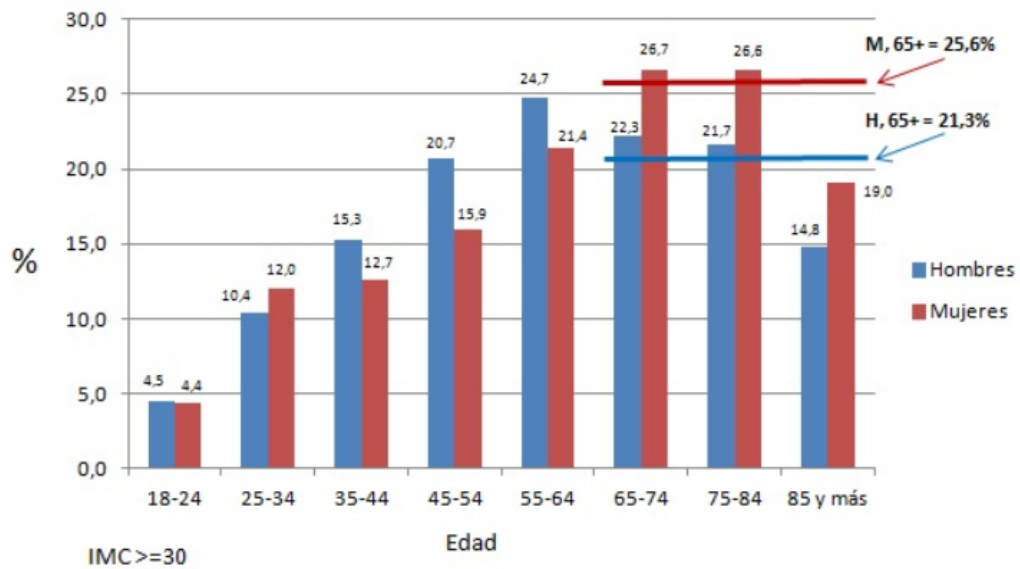


Figure 2: Obesity levels by age group in Spain [2]

Also worth of noticing is how circulation issues are the biggest cause of

hospital check-ins and death among elderly, overcoming tumors and respiratory issues [2]. Aside from the effects of aging itself (fibrous tissues development and wall thickening in the heart, thickening of capillaries and arteries, etc.), one of the main causes of circulatory problems is the lack of exercise. In order to lower the risk of poor circulation, one should always keep the body moving with low impact, specially the legs, where circulation is most difficult [3]

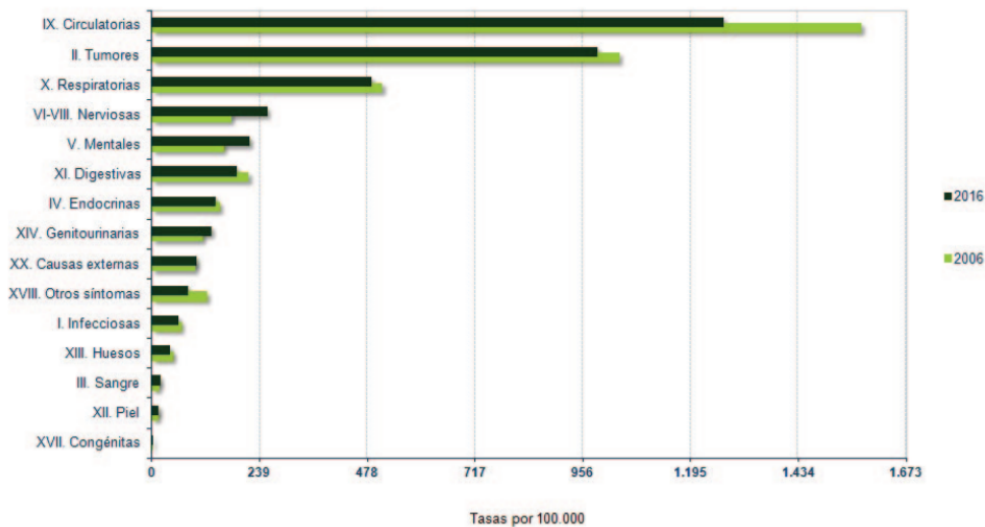


Figure 3: Most frequent causes of death among elderly [2]

Within this context, the team realized an opportunity to provide a product that could primarily help elderly improve their circulation while also considering the reasons that prevent them from exercising on the first place.

2.2 Research

In order to get in touch with the needs of the elderly we hired a Market research. The aim is understanding the figures our initial investigation found. Specially why older people tend not to exercise and what could make them do it.

2.3 Market segmentation

Having in mind the different kinds of solutions the product could provide to people, we segmented the potential market in order to pick the entry market, on which our first product will be aimed at. The segments are stated below:

1. Elderly with circulatory problems and already lacking some mobility, making the trip for clinics quite difficult.
2. Elderly with circulatory problems and unhappy with the frequent visits to clinics just to perform simple activities. Would like to continue treatment without the need for dislocation, but can't afford an at-home support.
3. People who suffered some kind of trauma and need to constantly exercise for rehabilitation, but want to do it from home.
4. People who spend their whole days working in front of a computer and want to stimulate the body instead of keeping it the whole time still.
5. People who live far from the city, but still want or need to perform some localized exercises.

Among the listed segments, the one picked to be the priority is the first one, while the others will be approached at a later opportunity through different marketing strategies or product differentiation. The choice can be explained simply by the fact that, for this segment, the product is almost a necessity.

As a geographical limitation, our initial focus will be on the Lérida Province in Catalonia. Lérida has the highest average age of the autonomous state and, thus, the largest number of elderly. There are older provinces in Spain, but we selected an initial market close enough from our Headquarters and the partner manufacturer.

2.4 Competitors

Our key for having an advantage against our competitors is being focused on the elderly. Our research shows that the biggest reason elderly don't perform exercises is the lack of comfort and autonomy in doing it. As our value proposition is bringing health in a simple and comfortable way, we

plotted our competitive position considering this two main characteristics against our competition as can be seen on Figure 2.4.

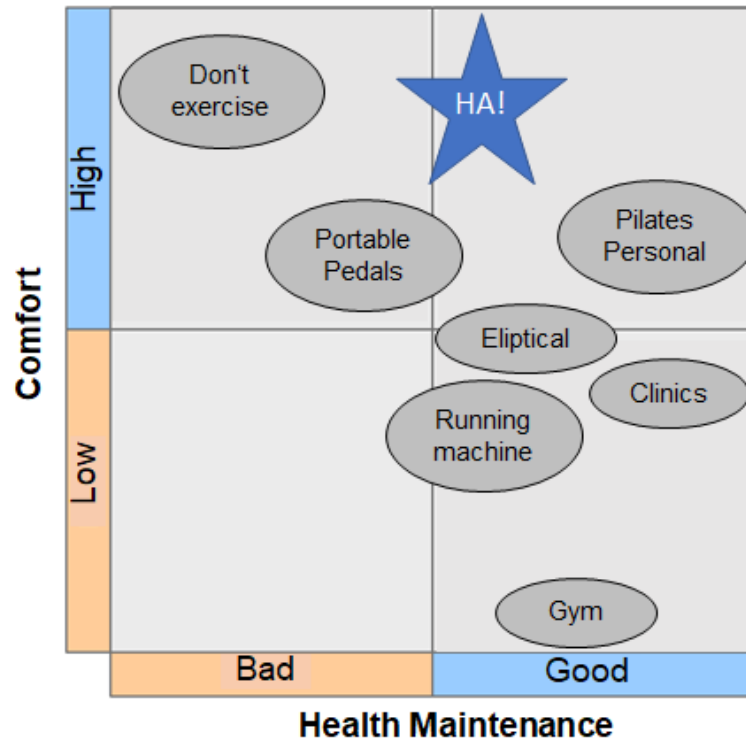


Figure 4: Competitive Position

Not exercising is obviously more comfortable than using our product, but fails to provide a healthier life. Gyms and health clinics, on the other hand, are really efficient on improving health, but they tend to bring many discomforts. The gyms are usually loud and crowded with younger people, lacking supervision on many occasions. Health clinics end up being too similar to hospital environments, which are also unpleasant. Pilates and personal training, while much better in comfort, are much more expensive and gives the elderly little autonomy, being subject to scheduled appointments.

Regarding the apparel one could have at home, elliptical and running machines are too dangerous for being operated alone by an elderly with low mobility. The portable pedal remains, then, as our most direct competition. It is a portable device one could easily use at home, but recent online reviews

of the product shows it is not completely appropriate for elderly. The pedals are not very firm and someone with lower mobility could end up getting hurt.

2.5 Market Share

The product stands as an alternative to paying a monthly fee to clinics and health professionals. By offering a moderate price we expect to achieve at least 0,3% of the beachhead market in Lérida, where 22% of the population of 430 thousand people are over 65 years. This would mean around 300 sold products. If the goal is reached within a reasonable time, the strategy will be replicated in Spain as a whole, where the same share represent a little under 30 thousand units sold.

3 Marketing

Comparing the potential price of the product with the cost of clinic visits or other larger apparel, there is a fair chance the product will be tested. The entry of the product can also be enhanced by the family of the elderly and those who care for him, since they are willing to look for a solution and consequently decide for the purchase themselves, widening the marketing possibilities. Most of our marketing strategy, betting on online sales, is based on the fact that the family of the elderly will be responsible for the purchase decision-making on several occasions.

Elderly also offer a strong "mouth-to-mouth" advertising, allowing the product to spread more quickly if it works properly. Furthermore, they are the ultimate test on one of the product's qualities. If they are able to use them properly, it means the product has reached one of its goals of being easy to use.

3.1 General Marketing Strategy

To address three main objectives of marketing.

- What is our target customer?
- How to reach them?
- How to retain them?

our marketing strategy focuses on the price and quality of product that we are providing to our customer keeping in view the competitors offerings.

3.1.1 Focused Market Strategy

A marketing strategy that focus its resources on a particular segment (a particular age group, gender, region, socio-economics culture etc). For our product we are adopting this type of marketing strategy because of the fact that we are providing a very target specific product that is designed for old people with circulatory problems, people lacking mobility and people who have been through a trauma situation and need constant rehabilitation .

3.1.2 Marketing Budget

Budgeting can be a difficult process. A lot of companies estimate their budget or base their budget on last year's spend. An estimate is better than nothing, so we have adopted the same policy and initially reserve a budget of 3000 Euros per month.

3.1.3 Marketing Success Measuring Tools

Normally marketing success is measured through end results, end results means no of units sale. But the most important factor is engagement through which our marketing success will be gauged. And this will be done through website traffic, different social media engagement, likes, comments and shares etc. Call data and feedback forms would help us as well.

3.1.4 Market Penetration

Due to low scale of our business and novelty of the product, it is somehow difficult to predict the market share. Mostly our competitors are the fitness centers and clinic those provide conventional solution at relatively high prize. Comparing the price of our product to the cost of clinic visit will ensure its entry and there are bright chances that it would be tested.A strong marketing campaign and multi channel advertising will help us to penetrate into market and to get our target market of 0.3 percent of elderly population of Spain within a specific period of time.

3.2 Organization of Sales

Organization of the sale is the vital part of business plan mainly it is related to the distribution of the product of the company. In deep, it is concerned with the profitability of the company and efficient distribution of the product to end user. Inventory and shipment, a key aspect in companies like ours, will be handled to Amazon, the company known for being the state-of-the-art in logistics. We would be left with providing the products for the pharmacies. A small business like us, sales is normally done by the proprietor himself or with one or two sales reps, this part of the business include following tasks;

- Prompt execution of the orders received from the customers.
- Frequent visit to pharmacies and partners to check for sales and take new order.
- Documenting, managing and record keeping to plan for production and sales.
- Keep close track of customers complaints and their timely rectification.

3.3 Services and Guarantee Policy

A well stated and excellent service guarantee indicates the impact on employee morale and loyalty. A guarantee generates pride among employees. Customer response from the guarantee, improvements can be made in the service that benefits customers, and indirectly company itself. Service offerings are actually intangible in general. Customers are unable to know about the possible outcomes of their purchase prior to experience. There is high risk of possibility of customer dissatisfaction if the product failed to perform to their satisfaction. As for our product is concerned we will offer following guarantee to our customers.

- A full money back guarantee after 7 days of delivery (unless product is not damaged).
- One year after sale service services without any charges.

3.4 Advertisement

A strong theory of advertising states that, 'A consumer passes through the stage of awareness, interest, desire and action (AIDA)'. The theory advocates that advertising is strong enough to increase people's knowledge and change their attitudes. We shall use mix marketing communication channel to promote our product, advertising will be a strong point of the company

3.4.1 Direct or Personalized Advertising

Direct or in person communication with carefully targeted consumers helps to obtain robust response of the product and cultivate everlasting customer relations. Following types of sell points will be targeted through direct contact.

- Pharmacies
- Fitness and clinic centers
- Shopping mall and stores
- Friends and family members to promote product (Free sampling)

3.4.2 Cable TV

As we know our customer spend most of the time at home so TV is the best and most efficient way to promote a new product because there are brightest chances that we are approaching our potential customers.

3.4.3 Social Networking

Social networking and internet blogs are the 2nd major source to reach our customer. Moreover the youngster public is the 2nd target which will not only purchase our product for their elderly but also serves as a promoting source.

3.4.4 Company website

Company's official website will be primary source of all details related to product, purchase, guarantee, after sale services and payment options etc.

4 Design and Development

The initial idea is to design a product based on a manual air pump, where the movement resistance comes from the air flow mixed with an equilibrium disc. It consists of two volumes connected in a way pressing a part transfers air from one volume to the other. The resistance can be regulated and the pressing area is designed to be as reachable and intuitive as possible. A design idea is presented on Figure 4.



Figure 5: Design Idea [4]

Pumps and discs of similar construction are currently very cheap on retail. It's also estimated that the quantity sold is also not astronomical. This gives a hint on the production costs, which is expected from a product built almost entirely out of plastic.

Our company wants to specialize on providing the best solution for the elderly, thus, development is our ultimate goal. For this reason, we'll hire another company to produce and pack all the units. Catalonia was chosen for our headquarters for the state has the largest plastic industry in Spain and has a decent supply of most services that might be needed.

After an appropriate market research done by professionals, our team of engineers will develop the product in cooperation with paid consultants for modelling and material selection. Once an initial model has been established,

prototypes will be built with different suppliers to get to know the possible subcontractor for the production. Initial quality tests will point out mistakes to be corrected in the modelling, material selection or manufacturing, beginning the design loop.

Once the desirable quality has been reached, another survey will be made by professionals to check the usability of the product with real potential customers. All the procedures to receive the European product certification will also be made and paid for.

5 Operations

With the design phase completed and the company legally opened, the company responsible for production will be hired. We expect to close a contract where we would pay less than € 10,00 (including personal allocation to pack the product with packaging contracted by us) per unit and would invest less than € 20.000,00 in modifications in the factory in order to supply our product.

Our sales will be made through drugstores and Amazon and we'll be using the inventory and shipping services of the latter. We'd need to hire only the transport from the manufacturer to the drugstores and Amazon Fulfillment center (located near Barcelona Airport). Amazon Fulfillment centers take care of everything once the product is there. Amazon controls and ships all the orders, taking a big load off our responsibilities. In exchange, Amazon charges a price per product per month it stays there (prices are shown on the Financial Plan).

Out of every 200 units made, one will be collected by our team randomly at the factory and taken to a testing facility, where we'll control the quality of the product and, thus, of our supplier. Once trust has been built, this number can go down to one out of every 1000 units.

We'll have customer service available in social medias and reachable by phone. All the accounting and financial planning will be made initially by the partners and owners of the company. These activities will be made in an rented small office in Barcelona.

Once the product is integrating in the target market (Spain), new research will begin to search for the next steps, whether it would be product diversification, location change, outsourcing production to china or similar countries, etc.

6 Team

In principle, the company will be directed by us three. We will occupy the management position of the company, taking the important decisions of it.

Furthermore, it will be necessary to hire a person who occupies the position of operations manager who can overlook the logistics and shipments as well as take care of the company's schedule.

In addition, it will be essential to have a team dedicated to customer service. Its duties will be:

- Attract potential customers by answering product and service questions; suggesting information about other products and services.
- Open customer accounts by recording account information.
- Maintain customer records by updating account information.
- Resolve product or service problems by clarifying the customer's complaint; determining the cause of the problem; selecting and explaining the best solution to solve the problem; expediting correction or adjustment; following up to ensure resolution.
- Maintain financial accounts by processing customer adjustments. Prepares product or service reports by collecting and analyzing customer information. Contributes to team effort by accomplishing related results as needed.

And finally, it is expected to maintain a close relationship with a company that deals with marketing.

7 Calendar

The schedule of development and production is presented on Figure 7. Each activity is expected to be performed within the shadowed months and production start is expected to 11 months after the initial steps.

If everything goes according to the plan the company expects to expand either geographically (insert the product on different regions) or in portfolio (different products). Research for this decision-making is planned to start right after the market expansion.

Activity \ Period	2019												2020						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Market Research	█	█	█																
Solve legal aspects (registration, etc.)		█	█	█															
Structure Business Plan				█	█														
Creation and optimization of 3D Model			█	█	█	█			█	█						█	█		
Material selection and tests				█	█	█	█	█											
Prototype manufacturing				█	█	█	█												
Survey on acceptability of product						█	█	█					█	█	█	█	█		
Adjustments on project								█	█	█									
Development of Marketing strategy								█	█	█	█	█	█	█	█	█			
Website development										█	█								
Search/Hire Subcontracter						█	█	█	█										
Hire Inventory / Packing supply									█	█									
Quality Certification / Control										█	█	█	█	█	█	█	█		
First scale Manufacturing												█							
Marketing launch												█							
Market expansion															█	█	█	█	
Market Research for Diversification																	█	█	█

Figure 6: Project Schedule

8 Risks

8.1 SWOT Analysis

SWOT analysis is basically a tool to find the 4 important parameters of any business.

8.1.1 Strength

- Providing a certified high quality product.
- CE certified and approved by medical community.
- Fastest delivery.
- Strong advertising campaign.

8.1.2 Weakness

- We do not have our own production setup, so there is a high risk of reliance on sub-contractor.
- We do not have any sales center so there is a possibility of trust factor.

8.1.3 Opportunity

- Potential growth in future.
- Growing health awareness among public.
- Target specified product.
- A healthy gift for parents who prefer to stay at home.

8.1.4 Threats

- Unable to penetrate market, being a new and unconventional product.
- Comparing to our simple design, our competitors may overtake us by sophisticated design.

9 Financial Plan

As explained in the previous sections, we would have initial costs related to the development of the product and to the procedures to allow for manufacturing (adaptation of subcontractor and certification for example). They are listed in Table 1.

As for fixed costs, we will have costs regarding personnel (including taxes), marketing and with the office rental, as stated in Table 2.

Table 3 lists all the variable costs.

Setting the price to € 42 (Real store prices after the IVA would be € 50) and assuming that 0.3% of the market will be hit in three months for Lérida and in 12 months for Spain according to the sales graph in figure 9, we get the Balance and net cash-flow as presented in figure 9.

Table 1: Initial Costs

Market Research	€ 2,000.00
3D Modelling	€ 4,000.00
Prototype Manufacturing	€ 5,000.00
Survey on Acceptability	€ 1,000.00
Durability and Quality tests	€ 3,000.00
Website	€ 500.00
Legal Aspects	€ 2,000.00
Rent Deposits	€ 3,000.00
Certification	€ 8,000.00
Adaptation of subcontractor	€ 20,000.00
Computers and Office Material	€ 3,000.00
Total	€ 51,500.00

Table 2: Fixed Costs per month

Marketing	€ 3,000.00
Office Rent and Utilities	€ 1,500.00
Operations Manager	€ 3,000.00
Customer Service Personnel	€ 3,000.00
Founders	€ 9,000.00

Table 3: Variable Costs

Manufacturing	€ 10.00	/ unit
Transportation	€ 300.00	/ 200units
Amazon	€ 3.20	/ unit at storage
Packaging	€ 1.00	/ unit
Quality Control Tests	€ 400.00	/ 200units

As we can see, the balance turns positive after nine months of operation (20 months from development start), corresponding to our payback time. Selling over 828 units a month would result in a positive monthly net-flow (Break-even point).

For the potential market studied it is quite feasible to reach the estimated sales per month through good marketing. This would allow for almost € 240,000.00 of profits after two years of opening the company (considering 15% of tax for new companies).

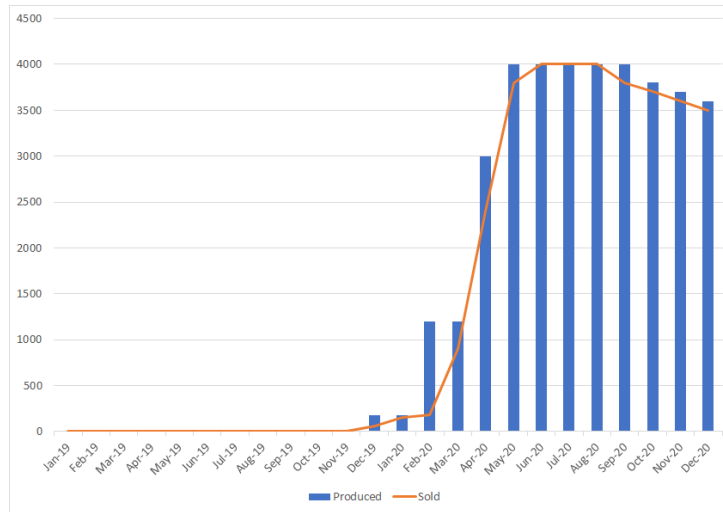


Figure 7: Estimation of production and sales

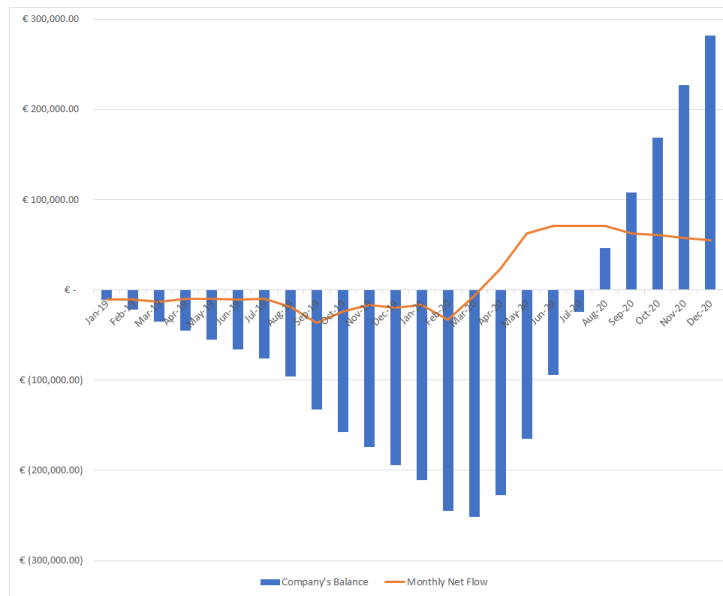


Figure 8: Company's balance and net flow

10 Proposal

The full investment to cover for the period of negative balance would be we 250,000.00 €. We need an external initial investment of 220,000.00 € taking

into account that each founder member will make an initial investment of 10,000 €. The investor would become a 40% shareholder of the business, together with Carlos, Adnan and, Agustina.

The full investment is expected to be returned in two-years.

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