



INSTITUTO
UNIVERSITÁRIO
DE LISBOA

A Business Plan for the distribution of a Personalised Micronutrient Supplement

Solution: MYCRO

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Master in Management

Supervisor:

Professor, Nuno Alexandre Guerreiro Pedro, Invited Associate Professor,

ISCTE – Instituto Universitario de Lisboa

September, 2024



Department of Marketing, Strategy and Operations

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Dedicated to the ones I wish were here

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Resumo

Com o panorama atual caracterizado por uma maior atenção aos cuidados de saúde e ao bem-estar, o mercado dos suplementos nutricionais tem assistido ao aparecimento de um interesse significativo em soluções personalizadas. Os consumidores estão cada vez mais conscientes do impacto que uma nutrição adequada tem na qualidade de vida, pelo que procuram produtos que se adaptem especificamente às suas necessidades individuais. Esta tendência é ainda reforçada pelo avanço tecnológico que permite a personalização em massa e em grande escala.

Neste cenário, o sector nutracêutico encontra-se numa fase de transição, em que os produtos estandardizados estão a dar lugar a soluções feitas à medida, abordando de forma orientada necessidades específicas como as deficiências de micronutrientes.

O projeto do plano de negócios entra nesses horizontes introduzindo uma solução inovadora de suplementação personalizada de micronutrientes, concebida para satisfazer a procura crescente de produtos de suplementação personalizados e cientificamente validados.

Através do enfoque na personalização e da utilização de tecnologias avançadas, o projeto procura revolucionar a forma como os consumidores abordam a suplementação nutricional diária.

Palavras chave: Personalização, Micronutrientes, Saúde

Classificação JEL:

C18 - Questões Metodológicas

M13 - Novas Empresas; Startups

O32 - Gestão da Inovação Tecnológica e I&D

Abstract

With the current landscape characterised by an intensified focus on healthcare and wellness, the nutrition supplements market has witnessed the emergence of a significant interest in personalised solutions. Consumers are increasingly aware of the impact that appropriate nutrition has on quality of life, therefore are seeking for products that specifically suit their individual needs. This trend is further enhanced by technological advancement enabling mass personalisation on a large scale.

The nutraceutical sector is in a transitional phase in this scenario, where standardised products are leaving room for tailor-made solutions, addressing in a targeted manner specific needs such as micronutrient deficiencies.

The business plan project enters such horizons introducing an innovative personalised micronutrient supplementation solution, conceived to fulfil the increased demand for personalised and scientifically validated supplementation products.

Through focus on personalisation and the use of advanced technologies, the project seeks to revolutionise the way consumers approach daily nutritional supplementation.

Key Words: Personalisation, Micronutrients, Health

JEL Classification:

C18 – Methodological Issues

M13 - New Firms; Startups

O32 - Management of Technological Innovation and R&D

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Executive Summary

The developed business plan aims to launch an innovative startup in the nutraceutical industry, intended to address the increasing demand for dietary solutions tailored to the individual. The objective of this project is to supply clients with a personalized micronutrients integration leveraging cutting-edge technologies like artificial intelligence and biometric data analysis, and to outperform the current market's standardized offer. The systematic approach adopted to develop and validate the idea is broken down into multiple chapters, each focusing on investigating a different project element.

Chapter I: Introduction

Describe the general context and the motivations that lead to the development of the project.

Chapter II: Literature Review

Explores the critical role of the micronutrients for human health, delving into the concerns related to nutritional deficiencies and their consequences. The chapter examines the e-commerce trend that has radically transformed the way consumers access nutritional products in recent years.

Chapter III: Methodology

Outlines the methodological approach adopted to develop the business plan. The primary research is conducted on a survey and professional interviews and reveals detailed insights on consumer needs and expectations. The secondary research consists in the analysis of reports with focus on the mass-personalisation trend.

Chapter IV: Market Analysis

Investigates the competitive environment using frameworks such as the PESTEL model, Porter's 5 Forces and SWOT analysis. Assesses the impacts of internal and external factors to better understand the strengths and weaknesses of the business and the characteristics of the industry's competitive dynamics. This chapter identifies the main protagonists in the market and evaluates the potential threats and opportunities, outlining the challenges and competitive advantages of the project.

Chapter V: Business Concept

This chapter explores the business concept and define the value proposition of the project, which focus on the personalisation of micronutrients based on the analysis of customers' data.

Describes the business model, outlining how the start-up can differentiate itself offering personalised solutions and leveraging innovative technologies for data collection.

Chapter VI: Operating Model

The operating model covers the organizational and logistical components of the startup, including the marketing strategy, targeting, segmentation and the product distribution. The suitable business partnerships and sourcing processes are investigated, aiming to streamline operational efficiency and ensure a high standard and customer experience.

Chapter VII: Financial Analysis

Provides a comprehensive overview of the economic forecasts, including revenue projections, costs and profit margins. The CAPM and WACC model are applied to determine the cost of capital and assess the financial viability of the project.

Finally, the key financial indicators that attract investors and support business expansion, such as NPV, IRR and Payback Period are delineated.

Chapter VIII: Conclusion

It synthesizes the outcomes of the project conducted and validates the feasibility of the business plan. The conclusion emphasizes the potential for opportunities and future growth, while outlining the future strategic steps for business development.

CHAPTER I: INTRODUCTION

This business plan pivots around the development of a cutting-edge personalised micronutrient solution for a market that is rapidly expanding due to increasing consumer awareness of the relevance and impact of a tailored diet. Despite growing demand, the current offer is yet dominated by standardised products, unable to entirely meet the individual needs of consumers seeking vitamin and mineral supplementation according to their lifestyle, health conditions and dietary habits. This project intends to fill the detected gap by proposing an innovative formula that exploits the latest personalisation technologies to offer tailored solutions, revolutionising the very concept of nutritional supplementation.

To ascertain the viability and sustainability of the project, the business plan traces a structured path. The primary research based on surveys and interviews with experts gathered interesting insights, relevant data on market trends and interest on personalised solutions. The complementary secondary research, analyse industry trends and the applicability of advanced technologies to the sector, providing a detailed overview of the nutraceutical market.

The competitive environment assessment was conducted using tools such as the PESTEL framework and Porter's 5 Forces model to assess external and competitive dynamics. The SWOT analysis identified strengths, weaknesses, opportunities and threats, while the financial analysis outlined the project's financial outlook. These are supplemented by the operating model and the marketing strategy designed to support the development and implementation of the project.

This methodology is intended to enable the initiative to address the market's needs and at the same time be feasible and sustainable in the long term, positioning the business as an innovative and strategic proposition in the personalised nutritional supplementation panorama.

CHAPTER II: LITERATURE REVIEW

The purpose of this Literature review chapter is to properly evaluate, through the elaboration of sources such as scientific papers and biology books, the reasons that make the product developed in this business plan essential in the lives of potential customers.

To ensure an accurate comprehension of the potential value creation of this innovative solution, it is imperative to precisely clarify the consequences of inadequate consumption of specific micronutrients and the impact of a tailored intake suited to each individual unique environment.

Through an articulated examination of “E-Commerce & Last Mile 2023” report from Deloitte, the business plan draws conclusions on the experience guaranteed from online shopping in Portugal and analyse the e-shopping habits of the Portuguese population. The business plan will exploit crucial insights from the report when in formulation of the implementation strategies.

1. Micronutrients

Micronutrients are essential substances for the body that play a crucial role in maintaining human health. Adequate intake ensures that deficiencies or disorders related to a lack of specific nutrients are prevented.

These elements, although required in smaller quantities than macronutrients, perform essential functions in a wide range of physiological processes that are fundamental to the proper functioning of the human body. These nutrients include vitamins and minerals (Vari, 2017).

1.1.Vitamins

Vitamins are organic compounds that play an important role in regulating metabolism and body functions. Some are essential parts of enzyme systems involved in energy production; others are involved in the functioning of the immune, hormonal and nervous systems. Our bodies are unable to synthesize them, therefore it is essential to ensure an appropriate intake through a balanced diet. The 13 recognized vitamins are classified into water-soluble and fat-soluble (Bean, 2017).

Water-soluble vitamins dissolve in water and are easily absorbed by the small intestine. Excess of these vitamins is eliminated through urine (Fukuwatari & Shibata, 2008). As they are not stored in the body, a continuous intake is important. They include B vitamins (B1, B2, B6, B12), Niacin, Pantothenic acid, Folic acid, vitamin H and vitamin C.

They are powerful antioxidant that help support the immune system and promote wound healing. The human body needs them for cell function and the development of certain skin adnexa with high cell turnover: such as hair, skin and nails (Murray et al., 2003).

The water-soluble vitamins of the B complex act as enzyme cofactors and are involved in various functions in the body, including energy-yielding metabolism, especially in the metabolism of carbohydrates, amino acids, glycogen and folic acid.

Fat-soluble vitamins are A, D, E, K: These nutrients are fat-soluble and can be stored in the liver for longer periods of time than water-soluble vitamins. These vitamins play an important role for immunity and they are judged to have potential to prevent certain cancers (breast, colon and prostate) (Holick, 2007). They have a crucial function in the synthesis of calcium-binding proteins, promotion of bones health, control of blood pressure, cells differentiation and turnover, and development of tissues (Bean, 2017).

Vitamins deficiency

The size of the population associated with vitamins deficiency, the various scenarios in which insufficient vitamin intake expresses itself, along with the disorders they may lead to, provide an excellent foundation for designing a specific product that will target these recurrent issues, occurring in all of different environments.

Primary deficiency occurs when the organism does not get a sufficient vitamin intake from food. Secondary deficiency may be the consequence of an underlying disorder which limits or prevents the absorption or use of vitamins, as an outcome of lifestyle factors, such as

excessive alcohol consumption, smoking, or use of medications that interfere with absorption or use of vitamins.

People who consume a varied diet are not likely to develop severe primary deficiency of vitamins; but may intake below the recommended quantities. A national food and supplement survey conducted in the United States between 2003 and 2006 reported that at least 90% of people who did not consume vitamin supplements were found to have inadequate amounts of essential nutrients, especially vitamins D and E (Bailey et al., 2012).

Functions and properties of each vitamin are outlined in the following table, along with the most frequently observed diseases associated with each vitamin deficiencies.

	Vitamin	Functions	Deficiency Disease
A	Retinol, β -carotene	Visual pigments in the retina; regulation of gene expression and cell differentiation; β -carotene is an antioxidant	Night blindness, xerophthalmia; keratinization of skin
D	Calciferol	Maintenance of calcium balance; enhances intestinal absorption of Ca^{2+} and mobilizes bone mineral	Rickets = poor mineralization of bone; osteomalacia = bone demineralization
E	Tocopherols, tocotrienols	Antioxidant, especially in cell membranes	Extremely rare—serious neurologic dysfunction
K	Phylloquinone, menaquinones	Coenzyme in formation of γ -carboxyglutamate in enzymes of blood clotting and bone matrix	Impaired blood clotting, hemorrhagic disease
B ₁	Thiamin	Coenzyme in pyruvate and α -ketoglutarate, dehydrogenases, and transketolase; poorly defined function in nerve conduction	Peripheral nerve damage (beriberi) or central nervous system lesions (Wernicke-Korsakoff syndrome)
B ₂	Riboflavin	Coenzyme in oxidation and reduction reactions; prosthetic group of flavoproteins	Lesions of corner of mouth, lips, and tongue; seborrheic dermatitis
	Niacin Nicotinic acid, nicotinamide	Coenzyme in oxidation and reduction reactions, functional part of NAD and NADP	Pellagra—photosensitive dermatitis, depressive psychosis
B ₆	Pyridoxine, pyridoxal, pyridoxamine	Coenzyme in transamination and decarboxylation of amino acids and glycogen phosphorylase; role in steroid hormone action	Disorders of amino acid metabolism, convulsions
	Folic acid	Coenzyme in transfer of one-carbon fragments	Megaloblastic anemia
B ₁₂	Cobalamin	Coenzyme in transfer of one-carbon fragments and metabolism of folic acid	Pernicious anemia = megaloblastic anemia with degeneration of the spinal cord
	Pantothenic acid	Functional part of CoA and acyl carrier protein; fatty acid synthesis and metabolism	
H	Biotin	Coenzyme in carboxylation reactions in gluconeogenesis and fatty acid synthesis	Impaired fat and carbohydrate metabolism, dermatitis
C	Ascorbic acid	Coenzyme in hydroxylation of proline and lysine in collagen synthesis; antioxidant; enhances absorption of iron	Scurvy—impaired wound healing, loss of dental cement, subcutaneous hemorrhage

Figure 1. Vitamins and their deficiency diseases; Source: (Murray et al., 2003)

In much of the developed countries these deficiencies are rare because of an adequate food supply and the vitamins addition to common foods. Along with these classical vitamin deficiency diseases, several evidence has also linked vitamin deficiency to many different disorders (Lakhan & Vieira, 2008). Achieving the adequate intake of micronutrients is an essential concern that represent a challenge in every country, even for people following balanced diet. Indeed, dietary measures themselves might not always be sufficient to prevent specific diseases that arise from micronutrients deficiency.

Vitamins are essential for growth of multicellular organisms, foetal thrive and childhood development. A foetus evolves from the nutrients it absorbs, using genetic information inherited from his parents. It requires the supply of vitamins and minerals (Wilson et al., 2015). These nutrients facilitate the biochemical reactions that lead to the formation of skin, bones, and muscles. A child could develop a deficiency disorder if there is a severe lack of at least one of these vital elements. Even minor inadequacies may arise permanent damage (Gernand et al., 2016).

In the context of neurodegenerative diseases, Alzheimer's disease has been a subject of extensive research and investigation. One notable aspect about the relationship between Alzheimer's disease and the deficiency of certain vitamins is highlighted from Kumar et al. (2022).

Alzheimer's disease is a complex condition that involves the progressive degeneration of brain cells, resulting in cognitive impairment and memory loss. Vitamins, such as vitamin B complex, vitamin C, and vitamin E, are essential for maintaining brain health. They are involved in various processes, including the protection of brain cells from oxidative stress and inflammation, which are key factors in the development of Alzheimer's disease (Gibson & Peterson, 1981). Furthermore, B-complex vitamins are essential in the production of neurotransmitters and the regulation of homocysteine levels, both of which are linked to cognitive function and memory (Da Silva et al., 2013).

Vitamin D can be accessed by humans from a variety of sources, including a balanced diet, supplementation and exposure to sunlight (Holick, 2007).

However, it is difficult to obtain sufficient daily vitamin D from general dietary intake. The majority of vitamin D is produced in the body through the penetration of sunlight and ultraviolet radiation (UVB) on the skin, converting 7-dehydrocholesterol to vitamin D (Maxwell, 1994).

After being converted, Vitamin D enters the bloodstream and gets metabolized in the liver, and then further synthesized in the kidneys to its active form. It then binds to receptors in specific tissues to regulate gene transcription. Vitamin D receptors are present in most tissues and cells in the body, and within the brain, the substantia nigra, thalamus, hypothalamus, and prefrontal cortex exhibit some specificities related to these receptors (Eyles et al., 2005). This is of relevance since many of these brain regions have been implicated in the physiology of depression (Drevets et al., 2008).

Eyles et al. (2013) reviewed the biology of vitamin D in the developing and adult brain and the links between low levels of vitamin D and neuropsychiatric diseases. The active form of vitamin D, calcitriol, plays a role in activating the gene expression of the enzyme Tyrosine hydroxylase, which is the rate-limiting step in the synthesis of neurotransmitters like dopamine and adrenaline that are implicated in the pathophysiology of mood disorders (Parker et al., 2017).

1.2. Minerals

Minerals are inorganic elements that perform many regulatory and structural functions within the body. They play a fundamental role in a wide range of physiological processes, including the maintenance of acid-base balance, nerve impulse transmission, muscle contraction and the regulation of metabolism. Our body is unable to synthesize them, and it is necessary to introduce them from outside sources like food or hydro saline supplements (Bean Anita, 2017).

Minerals are classified into two categories according to their concentration: Macroelements and microelements.

Macroelements, also known as major minerals, are needed in large quantities, generally more than 100 mg per day, and include sodium, potassium, calcium, phosphorus, chlorine, magnesium, and sulphur (Berdanier et al., 2016). These enzymes perform essential functions for cellular energy, DNA and RNA formation and in the development and health of bones and teeth structure; they are involved in energy metabolism, protein synthesis, regulation of nervous and muscular systems, maintenance of normal the cardiac function and regulation of glucose levels in the blood (Kass et al., 2013).

Microelements, or Trace elements are available in our bodies in small amounts and include iron, zinc, iodine, copper, fluorine (Berdanier et al., 2016).

Iron plays a key role in the production of red blood cells. It is required for the development of haemoglobin, which enables red blood cells to bind oxygen in the lungs and transport it to the tissues for energy metabolism.

Zinc is a component of numerous enzymes, functions as a structural element of proteins and regulates gene expression.

Fluoride contributes to the bones and teeth mineralization and protects against tooth decay.

Minerals deficiency

As previously highlighted in the context of vitamins, the failure to provide the adequate intake of minerals also manifests itself very frequently in humans, and it might be associated with a wide range of specific disorders related to each individual.

This reflects the significant market demand that can be exploited with a product featuring mineral supplement solutions tailored to each potential customer, determined by their needs and distinguishing traits.

Iron deficiency is the most widespread among all nutritional deficiencies, with much of the population of the world being deficient in the mineral to some extent. Young children and Pregnant women are the most susceptible to iron deficiency (Berger & Shenkin, 2006).

During childhood, a lack of iron can affect growth and development, as well as cognitive and behavioural ability. Severe anaemia increases the risks of maternal mortality and pregnancy complications.

Iron supplementation is a widespread practice among athletes. This is because physical activity can lead to the development of sports anaemia, in which haemoglobin levels fall below 14 mg/100 ml of blood in men and below 12 mg/100 ml of blood in women (Berger & Shenkin, 2006).

Tulchinsky, T. H. (2010). examined how a severe iodine deficit may impair foetal development during pregnancy, and lead to cretinism: an irreversible mental retardation with developmental abnormalities and short stature.

Lower cognitive and neuromuscular deficits are two more common consequences of a chronic iodine deficiency.

Increased susceptibility to infections, diarrhoea, night blindness, poor appetite, hair loss, reduced taste and smell acuity, slow wound healing and low sperm count are some of the symptoms that may be the result of zinc deficiency (Tulchinsky, 2010b).

Low calcium consumption throughout childhood, especially during adolescence, may increase an individual's possibility of developing osteoporosis later in life, a condition characterized by a decrease in bone mass. As bones lose density, they become more fragile and they develop inability to withstand ordinary strains; resulting in fractures, mostly of the hip, which may lead to paralysis or even death (Young, 2012).

Young (2012) states that weakness, disorientation, loss of appetite, and muscle cramps are signs of a potassium deficit. Hypokalaemia, or extremely low levels of potassium in the blood, may lead to cardiac arrhythmias.

Sodium deficiency may lead to diarrhoea, vomiting or kidney disease. Symptoms of low blood sodium, also known as hyponatremia, include cramping, nausea, disorientation, weakness in the muscles, and eventually shock and then coma (Young, 2012).

1.3.Consumption

Now that the relevance of the optimal micronutrient intake has been stated; the purpose of the following paragraph is to emphasize why a personalized solution offers a better value than standardized products and to elaborate into further detail on the significance of developing tailored supplementation programs for every individual.

This section will focus on the primary consequences of consuming an excessive amount of a single micronutrient as well as the implications that can arise from a simultaneous intake of specific elements. The paragraph will also clarify the ways in which the soil and climate properties of a specific region affect the individuals' absorption of micronutrients, to further support how a specifically personalized micronutrient intake can affect the health and well-being of humans.

1.3.1. Excessive intake

Depending on the quantity and duration, an excessive intake of micronutrients causes a variety of harmful effects on health and carries significant implications for micronutrient delivery interventions.

To minimize risks and provide public health recommendations, the World Health Organization have set upper tolerable nutrient intake levels (ULs) for different life-stage populations. Nutrient intakes near or equal the Upper intake Level can be tolerated biologically over the long term, but higher intakes are associated with increased likelihood of adverse effects (Pike & Zlotkin, 2018).

In the Annexes section, Table 1¹ represent the extract of a research conducted from Pike and Zlotkin (2018) and provides an overview on the adverse effects of excess intake of

¹ Table 1: Table 1 of the Appendix Chapter

iron, vitamin A, vitamin D, zinc, and calcium; outlining all the possible outcomes of consuming these micronutrients in excess, along with the quantities at which negative effects emerge.

The vulnerable populations of focus emerging from Table 1² of the appendix are infants, young children, and pregnant women. The ones considered to be of particular concern (Kraemer et al., 2008). As the line between acute and chronic is inconsistently defined (Pike & Zlotkin, 2018), the table shows overlaps between these two subcategories. However, acute refers to one-time events, whereas chronic refers to repeated intake over a longer period.

1.3.2. Inhibitors

Throughout an analysis of studies on human subjects, Lönnerdal (2010) enhances how the absorption of some micronutrients might interact and eventually nullify the effect of others. Specifically, how calcium can inhibit iron effects, regardless of whether it is absorbed through supplementation or from dietary intake.

This might cause concerns as an increased calcium intake is commonly recommended for children and women, who are the same individuals at risk of iron deficiency.

However, the effect of calcium on iron absorption has a short duration and compensatory mechanisms may occur with time (Lönnerdal, 2010).

Olivares et al. (2007) underscores the inhibitory effect of zinc on iron and copper absorption and that the combined supplementation of these minerals could be less beneficial than the single micronutrients supplementation.

Copper is essential for iron transportation between tissues and one of the signs of copper deficiency is microcytic hypochromic anaemia.

Zinc administration reduces indices of copper status and leads to the inhibition of iron bioavailability (Yadrick et al., 1989). However, the inhibitory effect on iron assumption lasts less than 30 minutes (Olivares et al., 2007).

The facts highlighted in this paragraph aim to explain how the simultaneous assumption of different micronutrients might be counterproductive and therefore, another reason a personalized supplementation program that consider these negative interactions can be considered better for personal health, rather than standardized multivitamins solutions.

² Table 1: Refer to footnote 1

1.3.3. Environmental factors

Environmental factors, namely soil proprieties and climate conditions, are the two major influencing external components that affect the individuals' capabilities to absorb micronutrients.

The most effective method to assist all individuals, regardless the differences in their environments, is to provide a tailored solution that evaluates all the variables that may affect the ideal absorption of the micronutrients.

Soil properties

The dynamic interconnection between soil properties and the micronutrient composition of crops is a crucial aspect that has a broad impact on human health.

Paul (2015) highlights the complex connections between soil characteristics and the availability of micronutrients in the food from that area.

Soil pH, organic nutrients level, and mineral composition significantly influence the uptake of essential elements by crops (Paul, 2015).

For instance, alkaline environments might reduce the bioavailability of manganese and copper, whereas acidic soils could hinder the absorption of vital micronutrients including iron and zinc.

These variations in soil properties can subsequently impact the micronutrient content of harvested crops. Consequently, individuals that rely on these crops as their daily food supply may be more susceptible to micronutrient shortages.

The complex connections between crop micronutrient composition and soil characteristics reveal how vulnerable some populations are to developing nutritional deficits.

This issue emphasizes that personalized supplementation approaches are a viable way of decreasing the possible health concerns associated with micronutrient deficiencies generated from the consumption of food from crops grown with specific soil properties.

As stated by Kok et al. (2019) the variability in individual nutritional needs necessitates tailored interventions.

Personalized supplementation considers the nutritional deficiencies prevalent in specific regions and provides targeted nutritional support to balance the soil and crop micronutrient content.

Climate:

Vitamin D acquisition by humans is influenced by various sources, including sunlight exposure, diet, and dietary supplements (Holick, 2007). However, obtaining sufficient daily vitamin D solely through dietary intake poses a significant challenge. Maxwell (1994) enhances that the majority of vitamin D is synthesized within the body, upon exposure to sunlight and ultraviolet (UVB) radiation.

This process is intricately tied to climatic conditions. Regions characterized by limited sunlight, particularly during specific seasons, may increase the risk of vitamin D deficiencies. The impact of climate becomes more pronounced in areas experiencing extended periods of low sunlight exposure, thus necessitating a greater reliance on dietary sources and supplementation.

Therefore, climate play pivotal roles in determining the intake of micronutrients, directly influencing individual's health and the prevalence of deficiencies in particular geographic regions. Recognizing and understanding the specific environmental dynamics is essential for formulating effective and tailored strategies to address and prevent micronutrient deficiencies.

2. E-commerce

E-Commerce & Last Mile 2023 is a report carried out by Deloitte Portugal, in partnership with APLOG³, with purpose of evaluate the online shopping process and logistic operations of 186 Portuguese companies that operate through an e-commerce. The study eventually features 555 feedback from consumers, providing a broad perspective on their experiences.

Convenience, availability and product variety are highlighted by this report as the main added values of e-commerce over traditional shopping. In fact, 64% of respondents claim to be willing to shop online again in the future with 71% additionally declaring they consider this option more convenient rather than a physical shop (Deloitte, 2023).

E-commerce is growing strongly in Portugal: 53.4% of internet users have made online purchases in the last year, a statistic expected to increase to 56.8% by 2025. The report highlights how online commerce revenues have been constantly increasing since 2017, as a result of the trend that has been amplified during the Covid-19 pandemic period: a phase in which Portuguese consumption habits have experienced significant changes, and in which new online sales channels have surfaced. The estimations from this study claim the Portuguese e-commerce market will rise to 7.13 billion euros by the end of 2023 and reach 9.3 billion euros in 2025 (Deloitte, 2023).

The study further reveals that 83% of consumers consider the shopping experience as important as product quality, with 59 % of consumers willing to pay more for a better shopping experience, a factor that will be crucial when delineating the prices of an emerging brand's product (Deloitte, 2023).

Lastly, according to the analysis carried out on the online channels of the sample of operators with an online store, the study concludes that the speed of e-commerce websites in Portugal is, in general, lower than recommended, affecting the consumer's browsing experience.

³ APLOG: Associação Portuguesa de Logística. <https://aplog.pt/>

CHAPTER III: METHODOLOGY

This chapter sets the basis for the methodologies used to prove the viability of business plan developed throughout this project (Table 1).

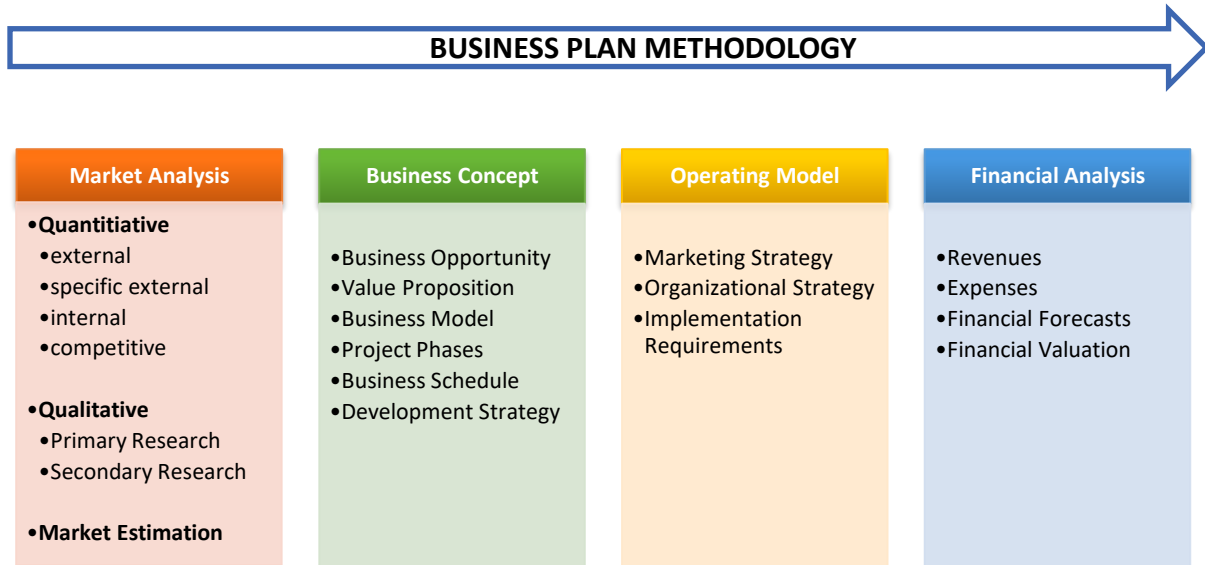


Table 1. Business Plan Methodology; Source: Author

MARKET ANALYSIS

Quantitative Analysis

This phase involves the evaluation of data from the micronutrients market, focusing on measurable metrics to provide empirical evidence to the business plan.

External Analysis: Investigates external factors that could affect the company's performance. It includes the review of political, economic, social, technological, environmental and legal factors.

Specific External Analysis: Explores opportunities and threats for the business in the industry environment, assessing the results of the external analysis.

Internal Analysis: Internal assessment of the company's strengths and weaknesses. It includes the review of the company's internal resources, capabilities and processes.

Competitive Analysis: Analysis of direct and indirect competitors with the intention of identifying their positioning, strategic decisions and value propositions in order to carve out a competitive advantage.

Qualitative Analysis

It investigates dimensions that do not portray the totality of the market but may provide specific insights on the company's target audience through tools such as surveys, interviews with nutrition professionals and the review of scientific reports.

Primary Research

This chapter delineates the methodological approach adopted in this business plan to explore the impact of an innovative personalized micronutrient solution in the market. The primary research was structured around two primary methods: A comprehensive survey aimed to at gathering a relevant amount of qualitative information, with a focus on the targeted audience of athletes and young population; and an interview with the Nutrition specialists from Benfica Modalidades featuring an additional case study focused on the assumption of micronutrients by the athletes from Benfica Modalidades.

Survey

The survey was conducted over a two-week period, which collected a total of 218 responses. The survey was divided into three main sections, each one with a specific purpose: Generalities, Familiarity with micronutrients and Relevance of personalisation in the context of products containing micronutrient solutions.

Professional Interviews (Benfica Modalidades)

In addition to the survey, an interview was conducted with the nutritionists of Benfica Modalidades. The interview was structured to delve into the nutritionists' professional insights regarding the role of micronutrients and the importance of a personalized nutrition program in athletic performance and recovery. The nutritionists also provided specific data on the types and quantities of micronutrients they have recommended to a total of 129 athletes between the Benfica Modalidades during the 2023/2024 season, categorized by sport, which added a layer of specificity to the research findings.

Secondary Research

Mass-Personalisation

Examining the outcomes of “Next in Personalization 2021 Report” carried out by McKinsey, this paragraph seeks emphasize the significance of providing customers with personalized products. Furthermore, this section aims to underline how personalization improves efficiency,

reduce costs and offer a path to sustainable growth, reducing inventory and increasing plant efficiency.

BUSINESS CONCEPT

This chapter explores the business opportunity, identifying the potential market areas where to intervene and the value proposition that emphasizes the distinctive benefits offered to clients. It describes the business model adopted by the company to generate the greatest value and income possible. Lastly, it outlines in depth the project phases and the company's launch schedule to implement the development strategy.

OPERATING MODEL

Marketing: Targeting and positioning strategies are developed to appeal to specific market segments, integrating the 7Ps (Product, Price, Promotion, Place, People, Process, Physical Evidence) to formulate an effective marketing mix strategy.

Organizational: Description of the logistical decisions regarding the choice of location, size and capacity of the startup; and of the organizational structure including the definition of key operations, workflow and value chain, in order to effectively manage relationships with partners, suppliers and distribution channels.

Requirements: Review of legal and regulatory requirements to operate in the micronutrient sector in Lisbon, ensuring the conformity of the business concept and to obtain all necessary licenses to start and run the company.

FINANCIAL ANALYSIS

Provides a revenue and expenses overview, along with corresponding financial forecasts to delineate projected performances. Conducts a business valuation based on the analysis of future cash flows and other key financial performance indicators.

CHAPTER IV: MARKET ANALYSIS

Quantitative Analysis

3. External Analysis

3.1. Industry Definition

3.1.1. The Nutraceutical Industry

Vitamins and minerals supplements are part of a specific industry that meets between the pharmaceutical and nutrition industries, the Nutraceutical market.

The nutraceutical industry includes food for medical purposes, functional foods and food supplements.

Vitamins and minerals supplements represent the 26% (Who, 2006) of the nutraceutical market worldwide. They are mostly used for prevention, specific needs, and healthcare purposes. Moreover, in possess of specific characteristics required by law, they can be commercialized as a product with medical properties.

This kind of solutions are usually recommended by doctors or pharmacists, in small doses concentrated to support the body's physiological functions, promote physical and mental well-being, or reduce the risk of disease. These supplements do not require any prescription and can be usually found in pharmacies.

The graphic below aims to underscore how vitamins and minerals supplement solutions are found in the interconnection between the pharmaceutical and nutrition industry; and their position in the market compared with those of the pharmaceutical and nutrition industries.

The names of the most influential companies worldwide are represented in Figure 2, with the purpose to properly address the nature of the Nutraceutical industry.

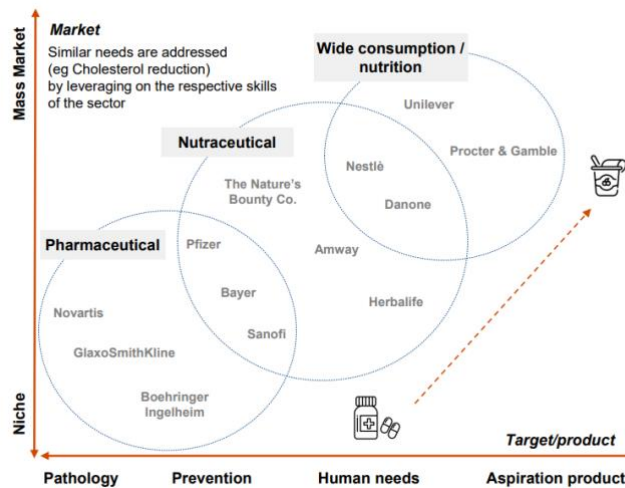


Figure 2. Nutraceutical Market Players; Source: PwC Analysis Report

3.1.2. Personalized micronutrient

The personalized micronutrient industry is at the forefront of a transformative transition in health and nutrition, aiming to revolutionize traditional approaches in food supplementation. This dynamic industry aims to tailor nutritional solutions to the specific needs of individuals. The foundation of this innovative evolution is based on the realization that optimal health and well-being can only be achieved through the application of customized approaches that consider the specific dietary requirements, lifestyle and health conditions of each individual.

This innovative industry is characterized from three primary defining factors:

Technological Integration and Personalization Technologies

In recent years, the field of personalized nutrition has been characterized by the integration of cutting-edge technologies and innovative approaches to create tailored micronutrient solutions. Mobile applications, wearable devices and online platforms provide users with direct access to personalized nutrition plans, encouraging greater engagement. Furthermore, advances in genetic testing, nutritional diagnostics and data analysis have paved the way for precision in the design of personalized nutrition plans.

Holistic Health Approach

In contrast to traditional multifunctional approaches, personalized micronutrient solutions take a holistic view of an individual's health, going beyond generic recommendations and considering factors such as dietary habits, genetic predispositions and lifestyle choices to craft tailored interventions.

Shift Towards Preventive Healthcare

The market is shifting towards preventive healthcare and individuals are increasingly seeking proactive measures to improve their personal wealth. Personalized micronutrient solutions are pioneering this trend, offering preventive strategies to address potential micronutrient deficiencies and promote a better overall health.

3.1.3. Impact on COVID-19 infection

There are no drugs or vaccines that are proven to secure the prevention of COVID-19. The immune system is regarded by most scientists as the most relevant shield capable of increasing the body's natural immunity against the virus infection. Several micronutrients, including vitamin D, zinc, and iron, play a crucial immune-supporting role, lowering the possibility of infection and eventually assessing disease progression (Chowdhury et al., 2020).

Jain et al. (2020) analyses an observational study on Vitamins D levels, showing how in people suffering from severe COVID-19 disease, vitamin D deficiency is much more frequently encountered.

Furthermore, zinc plays a significant role in antiviral immunity. This micronutrient is a popular component in both preventative and therapeutic COVID-19 clinical trials utilizing dietary supplements (Read et al., 2019).

In many COVID-19 cases, iron reduction was observed, and seriousness and mortality of the illness were closely associated with the iron status. In COVID-19 sufferers, decreased iron level was a significant cause of mortality (Zhao et al., 2020).

3.2. Industry Data

According to a report carried out in 2023 by the World Food Programme⁴, micronutrient deficiencies represent a substantial global health concern, impacting over 2 billion individuals in the world. Vitamins and minerals deficiency spreads across various demographics but, as previously explored in the literature review chapter, is particularly acute among specific vulnerable categories such as children and pregnant women.

⁴ World Food Programme Report: https://executiveboard.wfp.org/document_download/WFP-0000132472

Westport (2012) reported that 10% of all deaths in children are linked with micronutrient deficiencies.

It is estimated that 30% of pregnant women deal with deficit of vitamins and minerals and that without the specific supplementation, 75% of this vulnerable category would suffer from micronutrient deficiency. (Kontić-Vučinić et al., 2006)

The micronutrient industry has grown over the past years and is expected to keep growing in the future, as a result of the acknowledgment of the effects a balanced nutrition has on humans' health. Figure 3 and Figure 4, respectively indicating values for vitamins and minerals, report the estimation of the micronutrients market size in 2019 and in 2025, divided per region.

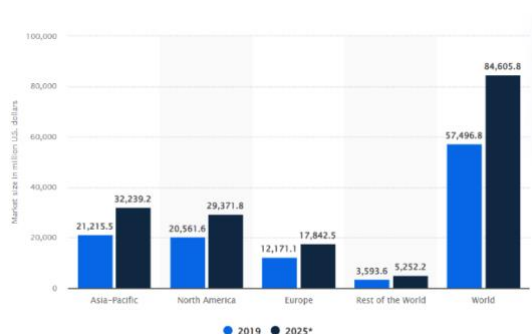


Figure 3. Minerals market size divided by Areas; Source: (Statista, 2022)

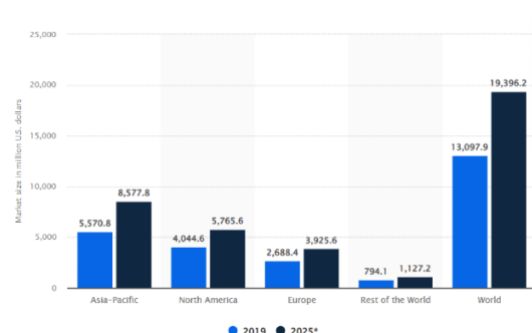


Figure 4. Vitamins market size divided by Areas; Source: (Statista, 2022)

Another way to measure the size of the micronutrient market, is to analyze the revenue these supplements generate every year. According to Figure 5 (Statista, 2023), the industry's revenue has experienced growth, rising from 18,96 billion US dollars in 2016 to an expected 44,18 billion US dollars in 2029. In 2023 the total revenue generated from the vitamins and minerals market is 29,7 billion US dollars.

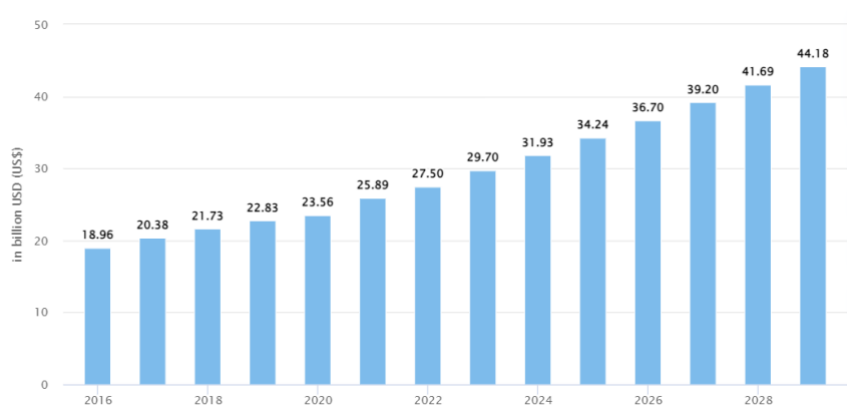


Figure 5. Vitamins and Minerals Revenue 2016-2029; Source: (Statista, 2023)

Figure 6 illustrates the revenue growth rate trend in the micronutrient supplementation industry, projecting a positive development of this industry until 2029. Analysing Figure 6, it is evident the revenue growth has been consistent, with the exceptions of 2019 and 2020, at a rate over 6% annually, which can be interpreted as a sign of strong market expansion and as a reassuring factor for investors and companies seeking to consolidate or enhance their presence in the market.

This growth not only reflects the resilience of the sector, more important the growing demand for health products, fueled by increased consumer awareness on nutrition and preventive health care.

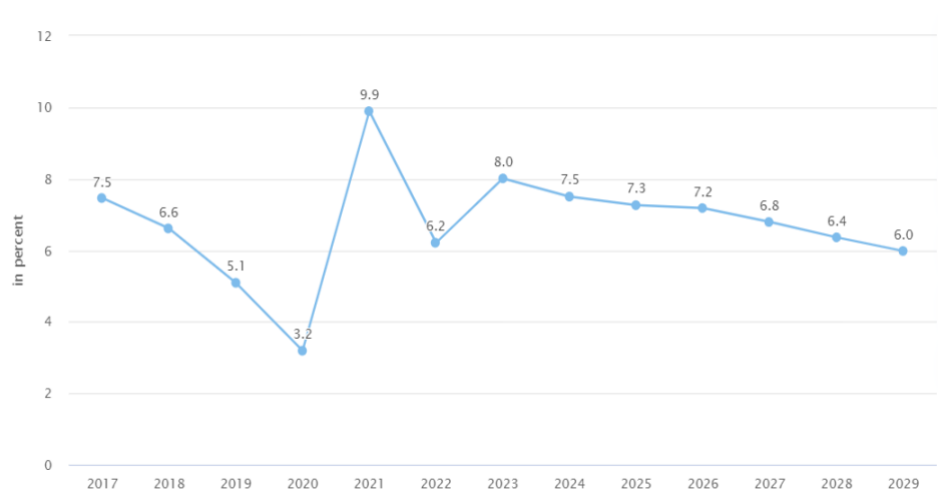


Figure 6. Vitamins and Minerals Revenue Growth 2017-2029; Source: (Statista, 2023)

3.3. PESTEL Analysis

PESTEL analysis is a framework used to analyse and assess the macro-environmental factors, outside the control of the organization, that might affect the performances of the company.

The PESTEL analysis examines the Political, Economic, Social, Technological, Environmental, and Legal factors. This tool assists organizations gather information and expertise essential for planning processes, strategic development, and prediction of future trends.

Political

The European Union grant several kinds of support mechanisms to healthcare organizations that invest in pharmaceutical research and innovative healthcare technologies. The EU's main funding initiative for research and innovation: Horizon Europe⁵ includes specific requests regarding health research and development projects and provides financial support for the creation of innovative health solution, conduction of clinical trials and development of new technologies.

In Portugal has become an attractive destination for startups in the healthcare industry by offering various government incentives that can significantly reduce costs for healthcare enterprises.

SI ID&T⁶ is a noteworthy program that offer financial support and tax incentives for research and development activities.

In 2016, the Portuguese government implemented “*Start Up Portugal*”, a startup acceleration initiative aimed at rejuvenating the country’s industries, boosting economic growth, and fostering foreign investment, as well as creating an international hub for innovation.

In the same year, the Portuguese prime minister presented the first edition of Web Summit in Lisbon: a €200M fund to co-invest alongside venture capital in local startups and foreign enterprises reallocated in Portugal. This event stimulated consistent injection into local

⁵ Horizon Europe: Research and innovation funding programme until 2027. How to get funding, programme structure, missions, European partnerships, news and events. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

⁶ SI ID&T: Sistema de Incentivos à Investigação e Desenvolvimento Tecnológico. <https://portaldosincentivos.pt/index.php/portugal-2020/si-investigacao-e-desenvolvimento-tecnologico-idt/projetos-individuais>

initiatives, resulting in venture capital investments of around €44M in that year, a substantial increase from the €29M of 2015.

The President of the Portuguese Association of Food Supplements (APARD) declared his request of reduction of the VAT⁷ rate on food supplements, currently at 23%. The President of the association highlighted how Portuguese corporations are facing disadvantages in relation to other European countries, especially to Spain, where the applicable VAT rate is 10%: Consumers have access to supplements sold from companies in other countries at more competitive prices, due to the lower applicable rate (Mercado Dos Suplementos Alimentares Atinge 200 Milhões De Euros Em 2023, 2023).

Economic

We can comprehend the dynamics of Portugal's economic growth during the past year by looking at a report conducted by the European Commission (Economic Forecast for Portugal, n.d.), which investigated how it decreased from 1.5% (quarter-on-quarter) in 2023-Q1 to 0.1% in 2023-Q2.

On the side of domestic demand, both private consumption and investment contracted in 2023-Q2 reflecting the combination of increasing interest rates and low consumer confidence. In the external sector, exports of products also faced a slowdown as a result of a decreasing demand from trading partners, while exports of services continued to grow at an encouraging rate, mostly driven by tourism.

Furthermore, the rise of household income combined with the expected gradual recovery in global trade volumes and the successful implementation of the Recovery and Resilience Plan⁸ are projected to gradually enhance the economic performances.

The GDP growth on an annual basis is forecasted to reach 2.2% in 2023, 1.3% in 2024, and 1.8% in 2025 (*Economic Forecast for Portugal*, n.d.-b).

Following a deficit of 0.3% of GDP in 2022, Portugal's general government balance is projected to reach a surplus of 0.8% of GDP in 2023.

⁷ The Value Added Tax: General, broadly based consumption tax assessed on the value added to goods and services. It applies to all goods and services that are bought and sold for use or consumption in the European Union. https://taxation-customs.ec.europa.eu/what-vat_en

⁸ Recovery and Resilience Plan (RRP): The European Commission is supporting Portugal in enhancing the RRP monitoring, reporting, audit and control mechanisms and in developing an investment management framework for RRP investments. https://reform-support.ec.europa.eu/what-we-do/recovery-and-resilience-plans_en

The dynamism of government's revenue is projected to persist in 2024, supported from strong labour market, rising wages, and high inflation rates. The general government balance is projected to narrow to 0.1% of GDP in 2024 and 0.0% in 2025.

Portugal's public debt-to-GDP ratio is predicted to reach 103.4% in 2023, and further contract to 100.3% in 2024 and 97.2% in 2025 on account of a favourable growth-interest rate difference (*Economic Forecast for Portugal*, n.d.-b).

With the exception of 2020 and 2021 and the COVID-19 outbreak, the Portuguese Gross Domestic Product (GDP) per capita has been growing since 2016 and reached 25,000 US Dollars. The value of GDP per capita is estimated to keep growing and to attain almost 35,000 US Dollars by 2028 (Statista, 2023).

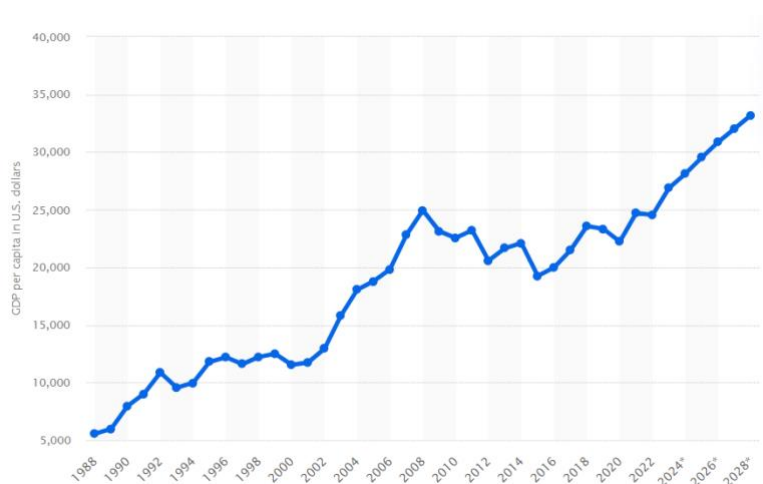


Figure 7. Evolution of GDP per Capita in Portugal; Source: (Statista, 2023)

As depicted in Figure 8, after peaking between 2011 and 2013 during the immediate aftermath of the global financial crisis, with an unemployment rate of almost 16.19%, Portugal has witnessed a downward trend, with the unemployment rate declining steadily until reaching 5.78% in 2022.

Portugal appears to be heading towards a solid economic stability, as evidenced by the positive trajectory of the unemployment rate in Figure 10, which may make the country an attractive destination for new businesses.

The decrease in unemployment may also be reflected in greater attraction of foreign investment and in increased consumer confidence, which may translate into higher consumer spending.

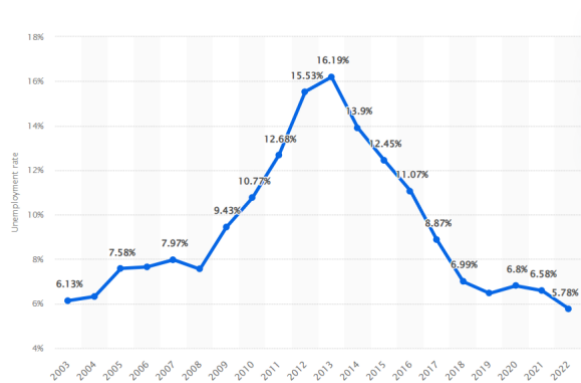


Figure 8. Evolution of Unemployment Rate in Portugal; Source: (Statista, 2024)

Additional information about the Per Capita spending and Per Capital Health spending in Portugal are highlighted in the Appendix section, from a chart forecasting these indicators until 2029.

Social

One of the crucial aspects of the social texture of the city of Lisbon is its young and international population. Portugal's capital attracts young talents from all over the world, creating a diverse and multicultural community. This scenario fosters innovation and creativity, offering fertile ground for the implementation of innovative solutions.

Lisbon's young and dynamic population brings with a rising awareness of health and well-being necessities, including the relevance of an adequate nutrition. Furthermore, young people are increasingly interested in customized solutions and supplements that address their specific requirements. This growing consciousness of the relevance of appropriate nutritional intake and the trend of mass-personalisation previously discussed in the Literature Review chapter, generate a favourable environment for the creation and success of a start-up commercializing personalised micronutrient solutions. Moreover, the educational attainment of Lisbon and Portugal is detected in the investigation realized by the OECD⁹. The study shows that educational levels have been increasing throughout the OECD countries, in particular at tertiary level. Between 2000 and 2021, the share of 25 to 34-year-olds with tertiary attainment increased on average by 21%. Portugal has experienced an even higher growth of 35%, as depicted in Figure 9 (OECD, 2022), from 13% in 2000 to 47% in 2021. Portugal is one of the 24 OECD countries where tertiary education is the most common highest level of attainment among 25 to 34-year-olds (OECD (2022), *Education at a Glance Database*, 2022).

⁹ OECD: Organization for Economic Co-operation and Development

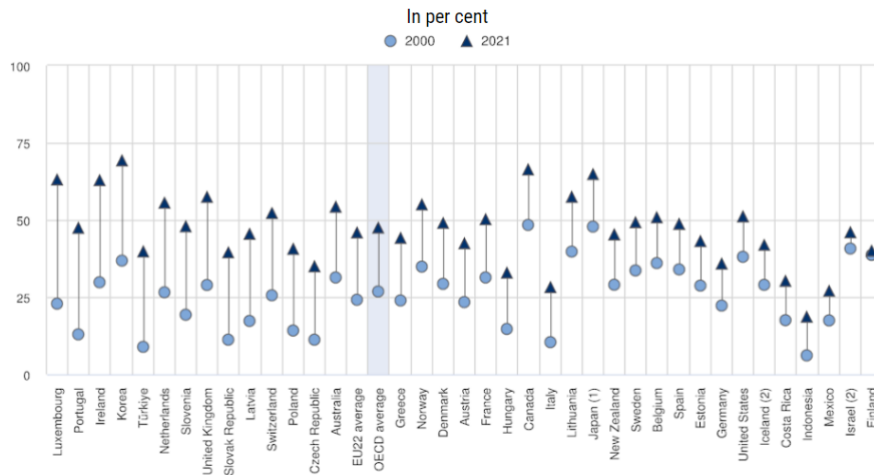


Figure 9. Trends in the share of tertiary-educated 25-34 year-olds (2000 and 2021); Source: OECD (2022).

Technological

In Lisbon, the technological landscape is rapidly evolving, presenting great opportunities for new startups. The use of technologies like Artificial Intelligence (AI) and data analytics is increasingly becoming integral in businesses that aim to offer highly personalized products and services, by analysing vast amounts of data to understand customers preferences and market trends.

These technological advancements are further extended to operational capabilities. Improving efficiency in supply chain management enables enterprises to deliver products tailored to the consumers even more efficiently and effectively, as already stated in the literature review chapter.

Portugal appears to be spearheading a rising trend in Europe. According to a study conducted by Eurostat and reported in Figure 10, Portugal is ranked second across the European Union for the number of enterprises that implemented Artificial Intelligence technologies. Over 17% of businesses in Portugal already incorporate AI into their daily operations corresponding to more than double the European average of 8% (*Database - Eurostat, n.d.*).

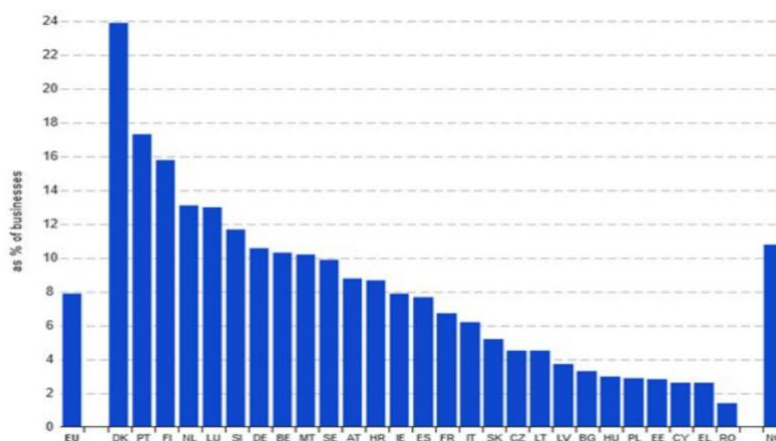


Figure 10. % of Businesses incorporating AI in their operations (Europe); Source: (Database - Eurostat, n.d.)

The development of technology has always been considered of vital importance for the implementation of the health sector in Portugal. The Portuguese National Health Service (SNS)¹⁰ implemented a technological portal capable of offering specific health services to the Portuguese population: SNS24.

SNS24 was born as a nurse phone triage service to support parents when their child had health issues and since 2007 it also assists the adult population. Nowadays, SNS24 has been evolving to the citizen's digital entry point to the National Health Service. Its mobile app counts over 8 million downloads and it now offers a wide and steadily increasing range of digital health services used by the Portuguese population on a daily base. Detailed description of these services can be found in the appendix section.

Environmental

Lisbon's commitment to environmental sustainability is reflected in its population's preferences, especially among the educated and international community who are generally more attuned to eco-friendly and health-conscious lifestyles. This demographic trend supports the potential of this business plan, making the city of Lisbon a strategic location for a startup with strong environmental ethics.

Personalisation significantly contributes to sustainability by reducing waste, providing customers exactly what they need and without excess. This is not only crucial for the outcomes it achieves on environment aspects, but also aligns effectively with the growing trend towards conscious consumption among costumers.

¹⁰ Portuguese National Health Service (SNS): <https://www.sns.gov.pt/>

Legal

Supplements and health industries are strictly regulated. Start-ups who seek to develop a product that falls within these markets must demonstrate a constant and scrupulous commitment to comply with a broad spectrum of directives, including regulations on product safety and quality, labelling and advertising. Failure to observe these regulations might result in severe sanctions, consisting in fines and product withdrawals. Furthermore, it may irreparably damage the company's reputation.

There are differences in National Regulations within the EU's members: Maximum levels for certain vitamins and minerals vary by country. The use of health claims is instead strictly regulated and mutual recognized in the EU. The European Commission establishes the ones allowed to be used (Sandwalk, 2020).

EU General Food Law¹¹

The EU General Food Law provides principles and requirements in matters of food safety for food products and Under Regulation (EC) 178/2002¹², supplements are considered food products, therefore they must be safe for consumption (Cheng, 2023).

Labelling requirements include indicating the quantity of nutritional or physiological active ingredients and shall include information about the expiration date of the supplements, ensuring consumers cannot be misled by labels.

Products must provide traceability including the identification of suppliers through all stages of production, processing, and distribution information. Traceability labels must include information such as Batch ID, Manufacturer/Importer/Distributor name and postal address.

EFSA¹³

The European Food Safety Authority (EFSA) is an independent agency that seeks to collect and provide the public with up-to-date scientific data on food security, with the purpose of promote a consistent and reliable food security system in the European Union. EFSA cooperates with the Member States and assesses nutrient sources permitted for use in

¹¹ EU General Food Law: European citizens need to have access to safe and wholesome food of highest standards. https://food.ec.europa.eu/horizontal-topics/general-food-law_en

¹² Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32002R0178>

¹³ European Food Safety Authority: <https://www.efsa.europa.eu/en>

supplements, evaluating both safety and bioavailability (European Food Safety Authority, 2024).

Companies that aim to commercialize a new nutrient source must submit an application to the European Commission. Subsequently, EFSA elaborates an extensive scientific analysis to bolster the Commission's assessment.

3.4. Lisbon Start-Up Ecosystem

Reports conducted by Startup Europe Partnership¹⁴ (*Startup Europe Partnership (SEP) - Home*, 2019) stated that the Portuguese startup ecosystem has been growing twice as fast as the European average. Portugal developed entrepreneurial ecosystem and is becoming an international hub for innovation and creation of startups. According to the Global Startup Ecosystem Index 2023¹⁵, reported from (*Startup Europe Partnership (SEP) - Home*, 2019), Portugal is one of the only two counties that managed to climb two spots in the 2023 ranking. Portugal is now ranked as the 26th Top startup country globally (*Startup Ecosystem Rankings Report 2021*, n.d.).

These accomplishments come from the inclination of the country to support startups. The Portuguese landscape is characterized by a great number of initiatives, incubators and accelerators: Programs that offer a wide range of benefits like funding, mentorship, office space and networking.

Lisbon is the most representative city of this ecosystem, hosting some of the most significant initiatives such as The Lisbon Challenge and Startup Lisboa. Besides the typical startup amenities, Lisbon offers a wide range of services for starting and growing companies, including co-working spaces and support services for intellectual property and product development.

Lisbon is now ranked 62nd worldwide and listed among the best startup cities in EU, rising 6 spots to rank 12th (*Startup Ecosystem Rankings Report 2021*, n.d.).

¹⁴ Startup Europe Partnership (SEP): Integrated European open innovation platform that helps the best EU scaleups grow. <https://startupeuropepartnership.eu/>

¹⁵Global Startup Ecosystem Index 2023:

https://www.startupblink.com/?leaderboards&utm_source=2023%20Index&utm_medium=Report&utm_campaign=GSEI23

Despite the support in non-financial resources, the country still faces lack of monetary investments. Difficulty in raising funds is the explanation behind the higher percentage of startups in the earlier stages of development and the fewer in more advanced stages compared to the European average.

Figure 11 depicts a clear idea of the decreasing trend in the distribution of startups by the different development stages in Portugal, enhancing that the hardest challenge is to finance the startup in the latest stages, even with the initiatives realized by the country and the city of Lisbon.

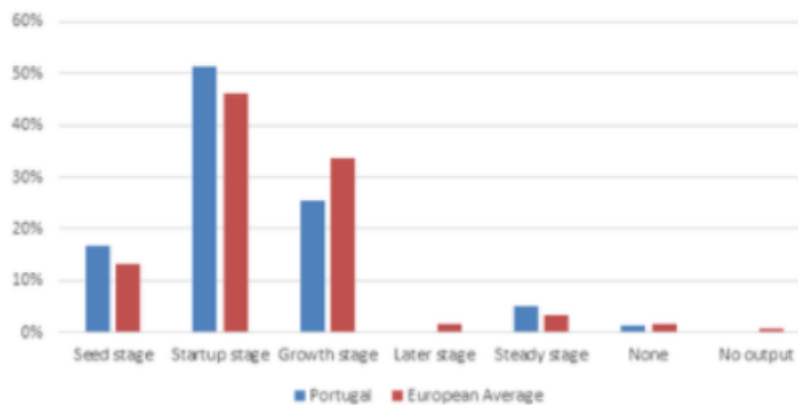


Figure 11. Distribution of startups by development stage, 2018; Source: (Statista, n.d.)

4. Specific External Analysis

2.1. Porter's 5 Forces

The Porter's Five Forces framework, developed by Michael Porter, is one of the recognized frameworks to analyse the competition inside industries. This approach is used to assess the profitability and competitiveness of an industry using three sources of "horizontal" competition: competition from substitutes, new entrants, and established rivals, and two sources of "vertical" competition: the bargaining power of buyers and suppliers. To evaluate the competition within the Portuguese personalized micronutrients industry, each of the five forces will be ranked on a scale of benefit for the sector from one (low) to five (high). Following the analysis, an average will be determined to provide an assessment of the sector attractiveness.

Bargaining power of Buyers

With the rise of health-conscious consumers and access to information about the effects of tailored supplementation, buyers are better informed and demanding in terms of product quality, sustainability and personalisation. This aspect raises the consumers expectations and bargaining power, but simultaneously helps companies whose are personalization and sustainability oriented to thrive their purpose. Consumers of this industry have a moderate price sensitivity, mostly willing to pay a premium price for personalized products. On the other hand, the market offers a wide selection of off-the-shelf standardized options increasing the consumer's ability to substitute with a similar product, with low switching costs, which poses a threat to the companies in this industry that don't offer a clear value proposition.

Given that the bargaining power of buyers is not particularly high for products that clearly offer a differentiated value proposition, the force is rated with **4 points** (moderate-high) in the benefits scale.

Bargaining power of Suppliers

Looking at the suppliers' perspective, they have a moderate control on the industries. While there is a high concentration of suppliers for common supplements, specialized and high-quality micronutrients may be sourced from a limited number of suppliers, increasing their bargaining power. Establishing relationships with multiple suppliers can mitigate the risk of a high bargaining leverage, guaranteeing lower switching costs. There is a low risk of forward

integration. Suppliers are unlikely to enter the personalized micronutrient market due to the high regulatory and knowledge barriers.

Considering what was mentioned, the bargaining power of suppliers is given **4 points** (moderate-high) in terms of benefits.

Intensity of Rivalry Among Existing Competitors

As far as the rivalry amongst existing competitors is concerned, the supplementation retail sector is considered a competitive industry, but the personalized micronutrients market hasn't been properly explored, with companies working within the health solutions sector only offering standardized products that don't meet the growing demand of personalized health supplements solutions, driven from the mass-personalisation trend and the customers awareness on the effect of tailored supplementation. Exceptional brand identity, personalized customer experiences and continuous innovation are crucial factors to establish a strong market position, but competitors might offer consumers similar products for low switching costs.

Considering what specified here and previously mentioned during the market analysis, this is an attractive market niche that hasn't been covered by the already existing competitors. This force is addressed **4 points** (moderate-high) in the benefits scale of the sector.

Threat of New Entrants

Another aspect considered within Porter's Five Forces Model is the threat of new entrants. The personalized micronutrients market is expanding, and more players will enter the space; especially companies already working within the health solutions sector that may switch to a more personalized oriented market and benefit from economies of scales, making it challenging to compete on price. The personalized micronutrient supplementation sector though requires significant investment in research and development to offer tailored solutions, in regulatory approvals and certification. Moreover, Health supplementation enterprises might exploit a privileged access to distribution channels, giving the strong relationships with healthcare providers and retail channels they've already achieved.

Conspicuous investments and leak of specific knowledge lower the threat of new entrants, product differentiation and brand loyalty additionally mitigate some of the pressure. However, the barriers to entry become more fragile to enterprises already working in the sector of health supplementation solutions that can leverage their production and commercialization

capabilities with relative low switching costs, lowering the beneficial effects of this force, which is given **3 points** (moderate) in the scale of benefits for this sector. This has a noticeable impact on the industry and features an equal mix of challenges and opportunities.

Threat of Substitutes

The last aspect to be analysed is the threat of substitutes, that plays a critical role in the analysis of the sector. The industry features high availability of alternatives from generic supplements, fortified foods and standardized health and wellness products that gives consumers the opportunity to opt for less expensive substitutes. Nevertheless, the performances of substitutes cannot match the offer from personalized supplements targeting benefits that generic alternatives aren't able to deliver and providing superior competitive outcomes that lower the price-performance trade-off.

The high availability of substitutes, poses a significant threat, indicating a challenging environment even for personalized supplements offering unique performances solutions. Given the substantial threat of substitutes, this force is rated with **2 points** (low-moderate) on the benefits scale of the sector.

To elaborate an assumption on the attractiveness of the Portuguese personalized supplementation industry, an average is computed from the score of each force. If the average score is below 3 points, the attractiveness of the sector can be seen as low. If the determined average is above 3 points, the industry can be considered attractive. In the case of Portuguese personalized supplementation, the computed average score for the five forces is **3.4 points** and can therefore be considered as an attractive sector to explore when conducting the framework of Michael Porter's Five Forces.

5. Internal Analysis

Internal aspects required careful consideration to implement the market strategy, even considering the startup is not formally operating yet. The conduction of an Internal analysis is mandatory to assess the potential strengths and weaknesses of the company. This exercise allows to identify improvement areas in the case of weaknesses and provides clarity regarding the opportunities resulting from strengths. The internal analysis enlightens valuable insights to guide strategic decisions.

6. Competitive Analysis

6.1. SWOT Analysis

The personalized micronutrient supplementation market and Lisbon's environment represent a fertile ground for an innovation driven startup, buoyed by a growing demand for personalized health solutions and supportive initiatives from the Government and from EU. By leveraging strengths and addressing internal weaknesses, the startup can capitalize on the substantial opportunities offered in this growing sector. Nevertheless, vigilance towards external threats and ambidexterity in strategic planning are essential to successfully ensure a competitive market share sustainable growth. The startup must focus on continuous technological innovation, strategic partnerships and market responsiveness through personalisation and data analytics, to ensure successful realization of the startup's value proposition and its potential in this promising industry. A comprehensive list of the internal and external factors the startup encounters during the first stages of the business plan are elaborated in the Annexes section.

INTERNAL FACTORS	
STRENGTHS	WEAKNESSES
• Unique positioning in Nutraceutical industry • Matching market trends • Technological advancements	• Market entry and Scale-up costs • Reliance on Specialist Suppliers • Competitive pressure from bigger enterprises
EXTERNAL FACTORS	
OPPORTUNITIES	THREATS
• Expanding Market demand • Government and EU support for Innovation • Global Shift Towards Preventive Healthcare • Strategic Partnerships with Healthcare Providers	• Threat of imitation • Competition from Healthcare enterprises • Regulatory Risks

Table 2. SWOT Analysis; Source: Author

6.2. Competitive Environment

The competitive landscape for personalised nutraceutical solutions in Portugal is characterized by two main segments: Direct competitors and indirect competitors.

Direct competitors share similar competitive strategies and target related segments of the market. Enterprises pioneering the personalized supplements market are few relatively small companies that don't have yet a strong base in Portugal. Meanwhile, indirect competitors, are large health and supplementation companies already established in the Portuguese market that, while not offering personalized nutraceutical solutions, cater to the same customer base with a wide array of generic health supplements.

Table 3 represent an elaboration of the competitive environment for the personalized nutraceutical market in Portugal, focusing on brand with Portuguese origin and/or with a strong influence in the Portuguese market.

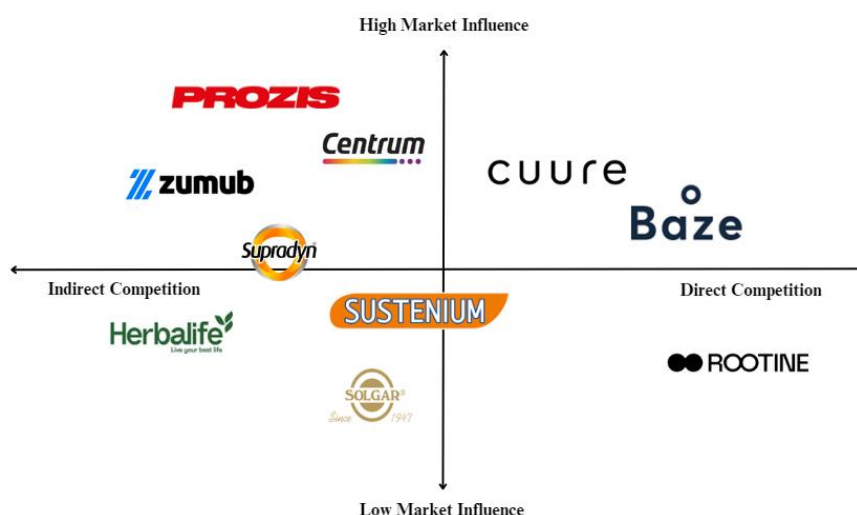


Table 3. Market Competitive Environment; Source: Author

6.2.1. Direct Competitors

The personalized nutraceutical market, specifically in the realm of vitamins, minerals, and other essential nutrients, is witnessing a transitional phase, following the growing awareness on the matter and the mass-personalisation trend for health and supplement solutions.

This segment of the market, although not densely populated with competitors, represent a cutting-edge niche that leverages advanced technologies for data collection,

comprehensive health assessments and personalized supplementation plans. These plans from direct competition, often encompass a wide range of products including but not limited to vitamins and minerals complexes. CUURE, ROOTINE and BAZE, which are three of the main direct competitors for the Portuguese and European landscape, are meticulously under analysis in the Annexes section of this thesis.

6.2.2. Indirect Competitors

In Portugal, and particularly in Lisbon, the nutraceutical landscape broadens with the presence of many indirect competitors. These are primarily large health and supplementation companies that, while not focusing on personalized solutions, cater to the same customer base with a wide array of generic supplements. The product lines from these enterprises include vitamins, minerals, protein supplements, and various wellness products aimed at general health maintenance, immune system support and fitness performances enhancement.

Given their established market presence, extensive distribution networks, and brand recognition, these companies pose a substantial competitive threat to the startup. Size and resources allow them to dominate the distribution channels, making them more accessible to the average consumer. The indirect competitors' main advantage lies in their capability to swiftly pivot and incorporate personalized nutrition into their offerings if they choose to explore and capitalize on this emerging trend, leveraging their existing infrastructures and customer base. The main competitors in the Portuguese market are companies focusing on the production of health solution like Centrum, Natiris, Supradyn, Sustenium and Solgar; but also, supplementation enterprises like Prozis, Zumub and Herbalife.

7. Primary research

As anticipated in the methodology chapter, the methods of survey and professional interviews with Benfica nutritionists have been exploited to conduct a qualitative analysis of the micronutrient market environment. These approaches were selected for their complementary strengths. The survey for its breadth in capturing information across a broad targeted sample, and the interviews for their depth in providing insights into specific practices and outcomes related to micronutrient supplementation. Both the methodologies will be analyzed from a qualitative point of view: The samples can't be representative of the whole population but provides relevant information to formulate assumptions on the market response and about the habits and preferences of potential customers.

7.1. Survey

The survey was divided into three main sections, each with the purpose of gathering valuable insights regarding specific aspects related to the development of the product: Generalities, Familiarity with micronutrients and Relevance of personalisation.

- Generalities: This section was crucial when identifying the segments most concerned with the Brand's proposal
- Familiarity with micronutrients: The purpose of this section was to evaluate the estimated knowledge of micronutrients among potential consumers, investigate their health and nutrition priorities and goals, and finally determine the most convenient intake solution and preferred distribution channels.
- Relevance of personalisation: This last section of the survey aimed to explore consumer satisfaction with the options currently available on the market, their inclination to share personal data in exchange for tailor-made nutritional solutions, price sensitivity and to assess the business concept in terms of innovation and market potential.

7.2. Professional Interviews

This Professional interview approach allowed for a detailed examination of the nutritional strategies used by the specialists of Benfica Modalidades, highlighting the practical applications of theoretical nutrition principles in a high-performance sports environment. This method

facilitated an understanding of how micronutrient supplementation is tailored to meet the unique needs of athletes in different sports, based on empirical outcomes and professional expertise.

SPORT	N° OF ATHLETES
Volleyball M	9
Volleyball F	12
Handball M	10
Handball F	13
Basketball M	8
Basketball F	7
Athletics	40
Rugby M	20
Swimming	10

Table 4. Benfica athletes following personalised supplementation plan; Source: Benfica Modalidades' nutritionists.

Table 4, enriches the specificity of this research with data concerning the number of athletes, divided by sport, that follow a supplementation plan; clearly emphasizing the crucial importance of an adequate micronutrient intake in the highly competitive context of professional sports. These findings underscore how, regardless of the discipline practiced, every personalised nutrition plan developed for athletes includes specific micronutrient supplementation and furthermore reveals the awareness and focus of nutritionists on the optimal supplementation needed to sustain performances at the highest level. The supplementation plans designed by Benfica's nutritionists are tailored to each athlete according to their specific needs. The percentages of micronutrients quantities from the total cases reported in the study result in 80% multivitamins and the remaining 20% in additional supplementation of magnesium, vitamin D, vitamin C, iron and folic acid. It was further pointed out that the approach proposed by the business plan was identified as an ideal solution to ensure the correct intake of micronutrients, calibrated to the different needs of each athlete. This recognition highlights a critical issue in the current market, namely the difficulty of finding solutions that offer customized solutions for micronutrient supplementation. Personalisation is crucial not only to guarantee optimal performances but also to ensure general well-being, something the standardized solutions available on the market often fail to provide. The peculiarity of the business plan, therefore, lies in its ability to fill this gap, proposing an innovative and tailor-made approach that responds perfectly to the needs of a high-intensity sports environment such as the Benfica's modalities.

8. Secondary Research

8.1. Mass-Personalisation

This paragraph seeks emphasize the significance of providing customers with personalized products and experiences in contemporary society.

Considering the standardized offer of the micronutrient market, and the characteristics of micronutrients analysed in the literature review chapter, the product developed in this business plan holds significant potential to generate an exponential growth for the start-up. Consumers are increasingly dictating what they want, demanding more personalized products and services, and expecting to be actively involved in their development.

The results of surveys carried from McKinsey are illustrated in Figure 12 and show that 71 percent of consumers expect companies to deliver personalized experiences, and that 76 percent of customers get frustrated when a tailored interaction doesn't happen.

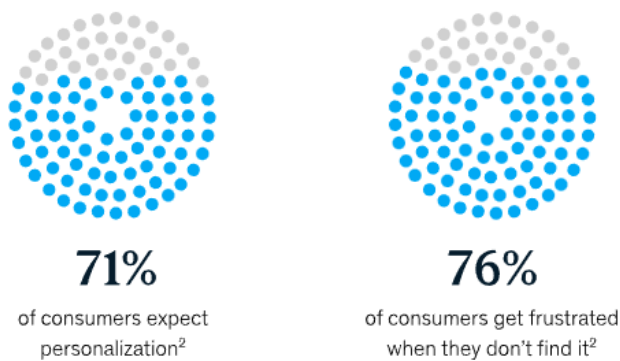


Figure 12. Consumers expectation on personalization; Source: (The Value of Getting Personalization Right or Wrong Is Multiplying, 2021)

Personalization is even more effective at driving repeated engagement and loyalty over time. Recurring interactions between consumers and businesses help gathering more data from which brands can design ever-more tailored products and experiences, generating long-term customer lifetime value and improving loyalty. 78 percent of consumers confirmed a personalized experience made them more likely to repurchase from the same brand (The Value of Getting Personalization Right or Wrong Is Multiplying, 2021).

Advances in manufacturing, supply chain and distribution technologies, especially thanks to analytics tools, help businesses not only to develop their capabilities to understand

what each specific customer wants, but they are now able to link their processes and resources to provide it.

Nowadays analytics tools, like Artificial Intelligence, are critical in order to match the right customer to the right outcome. Delivering personalized products and experiences provides benefits for both the businesses and the consumers. Mass personalization allows enterprises to demonstrate to individuals the value they get from the collection of personal information, and at the same time to gain deeper insights of consumers' behaviour.

Businesses can reduce inventory and increase plant efficiency; postponing production and allowing customization, they can simplify their product and service range, resulting in lower marketing and production costs while at the same time creating a more predictable demand (Made-to-order: The Rise of Mass Personalisation, n.d.).

(The Value of Getting Personalization Right or Wrong Is Multiplying, 2021) found that companies that excel at personalization most often experiment a 5 to 25 percent revenue lift, with company specific growth driven by sector and company archetype, as depicted in Figure 13. The more skilful a company becomes in applying data to improve customer relationship, the greater the returns. For digitally native companies that forge a data-backed and direct-to-consumer model, personalization isn't just how they scan market, it's how they define their operations.

Company archetype	Companies without direct relationship (eg, CPG)	Brick and mortar (eg, grocery, apparel)	Digitally native (eg, DTC brands)
Strength of customer relationship	Low	Medium	High
	 - Typically does not own customer transaction - Limited access to or use of 1st-party data	- Owns customer transaction, not always product development 1st-party data captured but mixed	- Owns customer transaction and product development 1st-party data at heart of decision making
% of revenue driven by personalization ¹	~5–10%	~10–20%	~25%

Figure 13. Personalisation drives higher revenue; Source: (The Value of Getting Personalization Right or Wrong Is Multiplying, 2021)

9. Market Estimation

In this business plan, the TAM funnel model is adopted in order to determine the potential market share achievable by MYCRO over the five years under examination in this project. This model breaks down the vitamins and minerals market into three dimensions:

TAM: The **Total Addressable Market** indicates the maximum size of the global market and the total revenue volume. It is therefore valuable as an insight to the total market potential on an international scale.

SAM: The **Serviceable Addressable Market** represents the segment of the TAM that may be reached and served by the business. The SAM is a more targeted portion of the market, defined by geographic factors, distribution channels and the targeted customer base.

SOM: The **Service Obtainable Market** corresponds to the market share the company realistically expects to capture within the SAM over the five years under consideration in this business plan. The SOM is a forecasted value that considers factors such as the company's operational capabilities, the competitiveness of the market and the effectiveness of marketing strategies.

As previously mentioned, the vitamins and mineral industry is impacting lives of over 2 billion people in world (*Nutrition | World Food Programme, 2024b*), featuring a generated revenue of 31,93 billion US Dollars. as depicted in Table 5, 31,93 billion US Dollars, at the current exchange rate ¹⁶can be converted to 30,09 billion Euros. The Total Addressable Market (TAM) used in this business plan is equal to 30,09 billion Euros.

In Portugal 2.3 million of people consume dietary supplements, with a corresponding turnover volume of 200 million Euros (*Mercado Dos Suplementos Alimentares Atinge 200 Milhões De Euros Em 2023, 2023*). Thanks to the increase in life expectancy and the growing awareness among the new generations, the sector foresees to feature higher growth in the next years. The Serviceable Addressable Market for the business plan is 200 million Euros.

Considering a Portuguese market valuation of 200 million euros, taking into account the brand's position as a new entrant and bearing in mind the competitive advantages and uniqueness of the product offered in the specific niche of the micronutrient realm, MYCRO estimates to secure roughly 0.2% of the market in the first year, representing precisely 372.000 euros. This market

¹⁶ (1,09) current exchange rate Euro/US Dollar on date 08/04/2024

share could potentially grow rapidly over the 5 years under analysis in the business plan, depending on the effectiveness of the strategic choices, the degree of acceptance of the product, and considering a CAGR¹⁷ of 7.04%, calculated on the data depicted in Figure 6. The SOMs for the years following the first are: 0,4%; 0,8%; 1,3%; 1,8%.

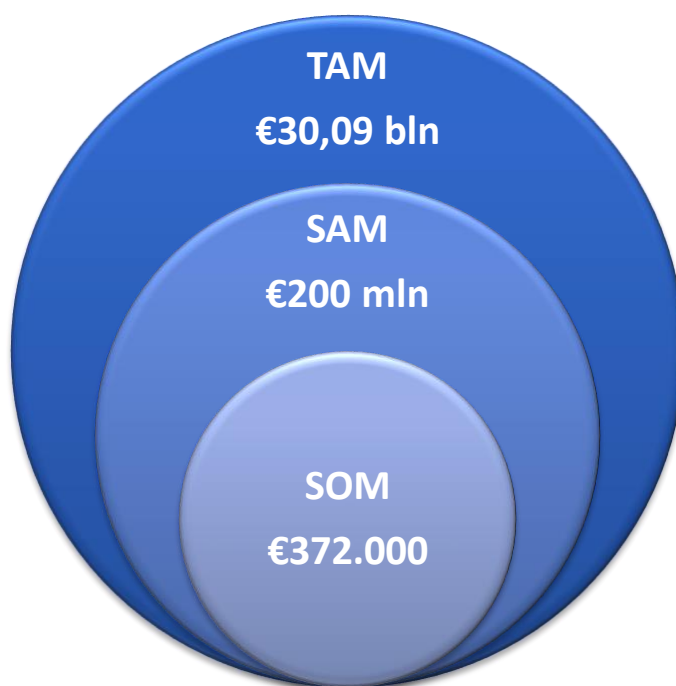


Table 5. TAM Funnel vitamins and minerals; Source: Author

¹⁷ CAGR: Compounded Average Growth Rate

CHAPTER V: BUSINESS CONCEPT

The concept of this innovative business plan pivots around the development of personalized supplements solutions, aiming to meet the nutritional requirements of all individuals in their everyday lives and across diverse circumstances. While the ideal intake of macronutrients is easier to address through a balanced diet, this project hones focus on a more nuanced dimension: Micronutrients, specifically vitamins and minerals. These essential elements, critical for optimal health, are harder to control solely through dietary intake.

The offer provided by MYCRO comprises two main services: MYCRO BASE service and MYCRO PLUS service.

MYCRO BASE service includes the development of the personalised micronutrient solution following the fulfilment of an online questionnaire on the brand's website, allowing the MYCRO expert team to produce the ideal solution for each individual's goals, symptoms and deficiencies.

MYCRO PLUS service is based on monthly planning and supply, elaborated after an initial assessment of each client's specific needs and objectives through dedicated interviews with MYCRO specialists, devoted to illustrating and creating the tailored integration plan. This service also includes periodic follow-up interviews, every 2-3 months after the first delivery of the product, to evaluate the progress of the integration plan and eventually implement required adjustments.

Both services can be further backed up by the results of blood samples or DNA tests performed by MYCRO's partner clinics. MYCRO strives to find business agreements with associated clinics, gaining percentages from each test performed by customers of the brand, or possibly obtain revenue from advertising to the clinics that perform these exams.

MYCRO intends to offer additional services, such as supplementary interviews regarding the implementation of a specific nutrition plan that supports and enhances the effectiveness of the micronutrient supplementation plan.

1. Business Opportunity

In the contemporary landscape, the awareness on the significance of a balanced and nourishing diet has reached unprecedented levels. The recognition that what we consume strongly influences our health has become crucial in the collective consciousness. 77,6% of the sample under analysis in the survey¹⁸ that supports this business plan consider vitamins and minerals intake to be fundamental in a person's diet.

Despite this growing awareness, a critical issue persists: the accomplishment of a personalized and tailored nutritional approach for each individual. This is the main idea behind the innovative business plan, which seeks to address the profound need for personalized solutions in the nutrition scenario. In the current market environment, customers are not merely looking for generic solutions; instead, there is an escalating demand for products tailored to individuals' needs. Customization, especially with tools supported by artificial intelligence, has evolved into a key driver of consumer behaviour in every market. The mass-Personalisation trend analysis, addressed in the literature review chapter is a clear indicator of this shift in customers preferences towards tailored products which cater their specific needs.

The contextual backdrop of this business plan is the existing gap in the market. While the demand for personalized nutrition is escalating, the current offerings are often standardized and fail to deliver the optimal vitamins and minerals intake requirements. As previously discussed during the analysis of the competitive environment, most of the products currently available on the market are multivitamins or general integrators offered by large health and supplementation companies that, while not focusing on personalized solutions, target the same audience by offering a wide range of generic supplements. Further evidence of the opportunities presented by this market can be witnessed through the results of the investigation carried out on a sample of potential customers: The survey revealed that 84.9% of the respondents don't know any brand currently selling personalised micronutrients solution.

The uniqueness in this concept lie not just in its potential market size but in its applicability as the issue of personalized nutrition is not restricted to a small range of people, but rather resonates across all individuals. The limited presence of direct competitors in the market and the growing demand for customized products, especially in the healthcare sector,

¹⁸ Survey outcomes in Appendix section.

render this business concept a viable opportunity for a start-up to rapidly gather a discrete market share in this unexplored market space.

2. Value Proposition

This innovative business plan delves into the intricate landscape of personalized micronutrition, with the objective not just to meet a market demand but to redefine and elevate the standards of nutritional well-being for everyone, every day, and in every circumstance. MYCRO thrives to offer its customers an innovative, practical and trend-setting supplements solution, specifically tailored to each individual's needs and characteristics, with the purpose of ensuring the optimal supply of micronutrients, therefore guaranteeing better healthcare.

3. Business Model Canvas

The Business Model Canvas (Figure 14) is a strategic management framework to define and outline a business concept. It has the purpose of logically structure and organize the business idea by going over the core components of the organization. The right side of the Business Model canvas focuses on the customers (external), whereas the left side of the Model focuses on the business (internal). Both external and internal factors meet around the value proposition, which represent the exchange of value between the business and the customers. More details about each of the elements that build this framework are developed at the end of the thesis, in the Annexes section.

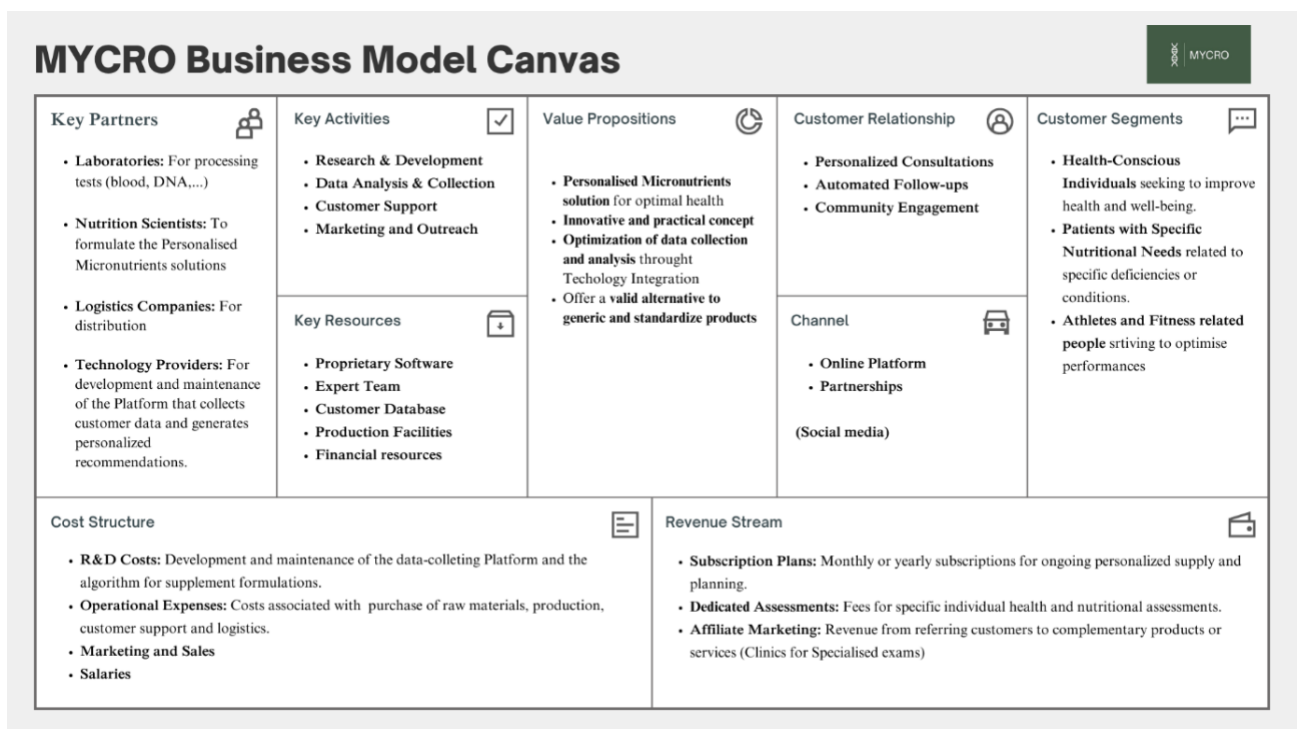


Figure 14. MYCRO Business Model Canvas; Source: Author

4. Project Phases

4.1. Project Initiation

This foundational phase is characterized by the identification and definition of the core problem the business plan aims to address, through the conduction of a comprehensive market research and the analysis of the industry environment with the purpose of scrutinizing the types of products available, assessing competitors, discerning prevailing trends, and understanding resources and strategies available. A comprehensive understanding of the micronutrients results critical during this stage, specifically around the benefits of a personalized micronutrients intake and the potential consequences of an inadequate assumption. The insights gathered during this phase are meticulously documented in the literature review and market analysis chapters of the business plan, setting a robust framework for the project's objectives and purpose.

Deliverables

- Product awareness
- Problem assessment
- Business concept foundation
- Market analysis report

4.2. Project Planning

With the groundwork laid in the initiation phase, the project planning stage involved structuring the identified issue and presenting potential solutions. The project's baseline and development strategy are meticulously constructed, stemming from an innovative business concept, suited to the current market environment revealed in the earlier market analysis. The formulation of this concept is found in the business concept chapter, which has the purpose of laying out a clear roadmap for the business and setting the circumstances for the subsequent implementation plan.

Deliverables

- Recommendation
- Opportunities identification
- Business and Product conceptualization

4.3. Project Execution

Documented in the implementation model and financial analysis chapters, the Project Execution phase is where the strategic plans are operationalized in order to develop a seamless execution. This phase encompasses organizing the entire operational model of the business, including marketing strategies, logistics, company's organizational structure and workflows, collaborations with partners and suppliers and identification of the appropriate distribution channels.

Moreover, this phase includes detailed financial forecasting, delineating revenue streams and expenses, and conducts financial valuation to evaluate the profitability and fiscal viability of the business concept. This Project Execution phase is the culmination of prior Initiation and Planning phases, translating theoretical frameworks into concrete business applications.

Deliverables

- Project viability assessment
- Implementation strategy (Operations and Marketing)
- Business structure

5. Business Launch Schedule

Table 6 the proposed project schedule, originated in January 2024 and with an estimated duration of 12 months, leading up to the expected launch of the conceptualized product in January 2025. The schedule is divided into 9 phases preceding the product launch phase, each of which has been allocated a specific timeframe necessary to ensure adequate development of the business concept within approximately one solar year, and to guarantee a successful market entry through a structured approach in terms of organization and timing. This visual representation allows to track progresses and align tasks with strategic deadlines, ensuring the product launch is structured and well-orchestrated. The detailed description of every phase concerning the launch of the business is found in the annexes section of this project.

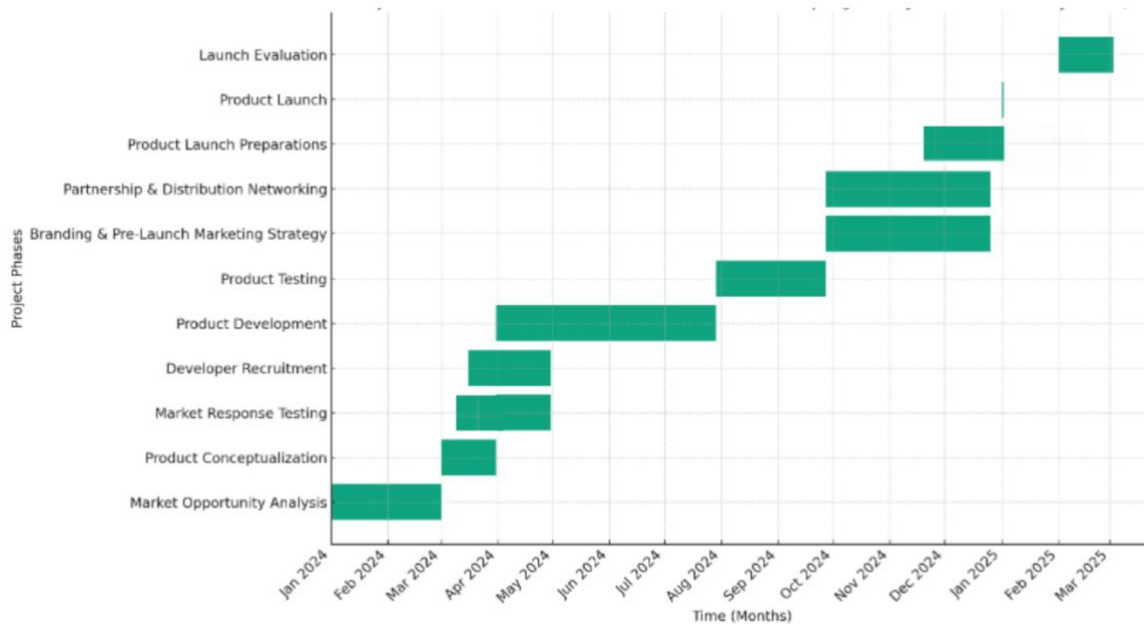


Table 6. MYCRO Business Schedule; Source: Author

6. Development Strategy

A strategy is defined as a set of actions that managers should take in consideration in the formulation and implementation of cross-functional decisions designed to achieve the organizational goals (Pearce & Robinson, 2008). At the core of the Brand's development strategy is the conviction that personalised micronutrient supplements solutions represent a true innovation in the nutrition and wellness space. In such a competitive market, the innovation and customisation of each product is at the forefront of the company's offer, relying on strategic partnerships with specialized institutes to ensure precise micronutrient assessments to ensure that the products are tailored to individual needs. By acknowledging the rich opportunity to exploit a specific niche, the company's strategy aims to position the brand as a pioneer in Portugal, starting in Lisbon, and then expanding its footprint internationally. The emphasis on innovation and specialized partnerships is the foundation that would enable the company to outperform the competition and effectively respond to the needs of an evolving market, offering truly personalised and evidence-based wellness solutions. With this clear purpose, MYCRO commits itself to define the future of personalised wellness, delivering not just a product, but a transformative experience for its customers.

6.1. Short-term Objectives

(Year 1-2)

Gain market share: Penetrate the Portuguese market, starting from Lisbon and gradually expanding to other cities, with the aim to establish a significant market presence. Focus on capturing a substantial share of the health-conscious consumer base through targeted marketing strategies and high-quality product offerings.

Increase brand and problem awareness: Implement a comprehensive marketing campaign to build strong brand recognition. Utilize social media, influencers, partnerships and strategic events in order to educate the market on the benefits of personalized micronutrient supplements and create a loyal customer base.

Secure more partnerships with clinics and health institutes: Forge strategic alliances with clinics and health institutes across Portugal for micronutrient evaluation; not only to facilitate tailored recommendations but also to enhance product credibility.

Improve personalization processes and customer experience: Refine the personalization processes to ensure a seamless and highly individualized customer experience. Invest in customer service and develop intuitive online platforms that allow customers to obtain better personalized plans.

Better integration of technologies and data analytics: Continuous investments in the development of the latest technologies and data analytics tools to enhance product customization, operational efficiency and market insights.

6.2. Long-term Objectives

(Year 3-5)

Expand distribution channels: Identify and secure new lucrative deals with key distribution channels to ensure product availability and optimize efficiency and reliability.

Logistics optimization: Streamline logistics operations to ensure timely delivery and reduce costs. Invest in technology to improve inventory management, waste reduction and to ensure a smooth distribution process.

Lower Production Costs: Achieve economies of scale to reduce production costs without compromising quality. Focus on process optimization and negotiate better rates with suppliers to increase profit margins.

Expansion to Other Countries: Start the business' international expansion, with Italy as the primary market focus. Conduct market research to understand needs and preferences, tailor products and marketing strategies to develop a strong brand awareness.

Attract New Investors: Showcase the company's growth potential and financial health to new investors.

6.3. Development milestones

Figure 15 represent the milestones MYCRO aims to accomplish throughout the duration of the 5-year project. Every year MYCRO expect to grow exponentially its market share.

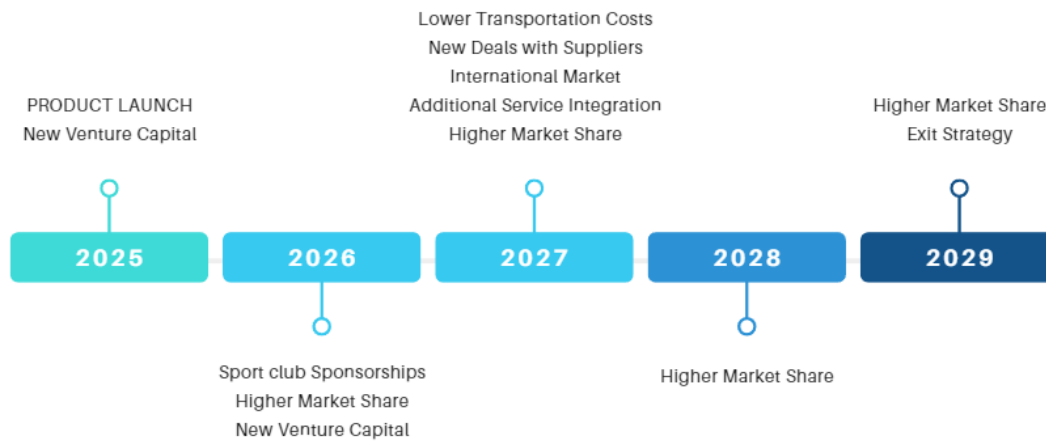


Figure 15. MYCRO's Development Milestones (Yearly); Source: Author

Sport clubs Sponsorship (Year 2): New Costs due to the sponsorships

ROI¹⁹: New Sales, Higher Brand value and Engagement

Higher market share (Year 2-3-4-5): Gain market shares in the future market environment, not already taken from other companies.

Lower transportation Costs (Year 3): Secure new lucrative deals with national delivery partners. Compensate the higher costs of International Deliveries.

Better deals with Suppliers (Year 3): Aim to get lower prices on the micronutrients powder solutions, due to the higher quantities purchased.

Increase Revenues with Additional service (Year 3): Integration of nutrition plan service.

New Investments (Year 3): Automotive machinery to complete the product development and packaging line

International market expansion (Year 3): Higher costs due to new international distribution partnerships

ROI: Higher Sales, Brand recognition

Exit Strategy (Year 5): Develop the most suitable exit strategy, allowing the business to further grow throughout the injection of new investments and the acquisition of professionals' expertise.

¹⁹ ROI: Return on Investment

CHAPTER VI: OPERATING MODEL

1. Marketing Strategy

1.1. Purpose

MYCRO's concept is inspired by the idea that tailored nutrition is the key to authentic wellbeing. MYCRO aims to revolutionize access to tailored micronutrient supplementation by combining professional knowledge and innovation to meet individual needs. The brand main commitment is to provide genuine personalised solutions that support a healthy lifestyle. MYCRO stands for personalised wellness, where each individual can find his own nutritional balance and live his best life.

1.2. Segmentation & Targeting

During the development of the marketing strategy chapter, a crucial focus lies on market segmentation: Strategy that enables the identification and comprehension of specific needs within different consumer groups, allowing the brand to customize the offer and furthermore, maximizing the impact and the effectiveness. The following segments are considered the most relevant for MYCRO and in the nutraceutical environment.

Individuals at Risk of Micronutrient Deficiencies: The analysis conducted during the literature review chapter indicates that children and pregnant women represent critical populations, being particularly vulnerable to micronutrient deficiencies, which can have significant repercussions on child development and maternal health. For these segments, MYCRO's approach of formulating customized supplements based on detailed analyses of individual needs becomes essential to ensure optimal intake of essential nutrients.

Athletes: professional athletes, an example of which are the athletes of the Benfica Modalidades previously analysed, have specific nutritional needs to maintain and enhance high level performances. Personalised micronutrient supplementation is essential to influence endurance, recovery and injury prevention. For this segment, MYCRO offers tailor-made solutions, developed in collaboration with sports nutrition experts, to support athletes' unique physical needs.

Fitness and Health Enthusiasts: People who are actively engaged in taking care of their health through physical activity and a balanced diet attribute great importance to nutritional balance. In order to meet their expectations, MYCRO offers tailored supplements

solutions, supporting performances and helping to maintain high energy levels throughout the day.

Elderly: The elders represent an important segment of the nutraceutical market. They are tendentially more inclined to rely on supplements as a preventive or curative tool for specific deficiencies. The focus for this segment must be directed at providing solutions that support general health and the prevention of age-related diseases through personalised products that consider the unique health conditions and nutritional needs of this group.

Target

Establishing MYCRO's strategic target, the brand starts with the recognition that a correct micronutrient intake is a universal concern, essential for the well-being of every individual, regardless of gender, age or profession. Each person, with their specific characteristics and needs, can benefit significantly from targeted and personalised nutrition. However, to maximize the initial impact and build a solid platform for credibility and success, MYCRO aims to focus its primary effort on targeting young athletes and fitness and nutrition enthusiasts.

The choice of targeting these segments is based on the awareness and demand among these groups for personalised nutritional solutions. These individuals, already sensitive to the importance of adequate micronutrient intake to optimize performance and well-being, further represent an additional opportunity due to the emerging trend of mass-personalisation. These segments, more than others, are increasingly seeking products suited to their specific needs and lifestyles. The strategic choice of this target exploits the predisposition to innovation and the potential to positively influence the product adoption in larger markets, accelerating the growth of the brand and broadening its customer base.

1.3. Positioning – differentiation

Positioning is the aggregate perception the market has of a particular brand, product or service in relation to the perceptions of the competitors and the general market landscape (Ries & Trout, 1981). A company must thrive to influence the perceptions through enlightened strategic actions; considering that positioning is not what you do to a product, but what you do to the mind of the prospects. Furthermore, it must be about how products are perceived in the minds of consumers.

Crucial concepts carried from Ries and Trout (1981), are the pillars of MYCRO positioning strategy: Instead of trying to fight for a position in the prospects mind as the best health or supplementation brand, the most effective option for a new brand like MYCRO is to position itself in a different niche. Essentially, creating a new ladder for the Brand.

MYCRO must position itself in each of the selected segments, aiming to differentiate from other brands and considering the characteristics of the market:

Target customers

The positioning strategy considers external influences and consumer expectations. MYCRO emphasizes the importance of addressing and anticipating the needs of an audience whose sensitivity to personalisation around wellness appears to be a key driver.

Competitive framework

The supplements market is very broad and features many companies offering general health solutions. MYCRO aims to stand out in this environment not by competing primarily on the base of price or recognition, but rather by positioning itself as a unique brand offering personalised micronutrient supplements. This approach enables the brand to avoid direct competition with the industry main players and focus on creating a specific niche that values personalisation and innovation.

Differentiation

MYCRO's point of difference lies in its unique value proposition, which combines economic, functional and emotional factors. Economically, MYCRO offers a targeted investment in personal health, avoiding unnecessary waste on non-optimal and standardize supplements. Functionally, the solutions developed are designed to meet the specific nutritional needs of each individual, based on tailored plans and scientific data analysis. Emotionally, the purpose is to establish a bond with consumers, providing them with a sense of undivided attention and understanding. These aspects at the heart of the brand's differentiation strategy enable MYCRO to emerge as the optimal choice for those seeking optimal wellness solutions.

1.4. 7Ps

Product

The decision to choose powder solutions over alternative options is driven primarily by the versatility and effectiveness of this format. Powder allows very precise blending and customization of micronutrient dosages, which is essential to meet the specific nutritional needs of each customer. Moreover, powder solutions are extremely convenient for consumption, as they can be easily dissolved in different liquids, such as water, juices or smoothies. Furthermore, the choice of the powder format has been reinforced by the outcome of the survey²⁰ conducted as part of the quantitative research of this business plan. A significant percentage (31,2%) of the respondents expressed a preference for powder solutions, while another significant portion (40,4%) did not demonstrate a definite preference between powder, pills or other alternatives. These data suggest a clear acceptance of the powder format by the sample of individuals analysed within the brand's target market.

"MYCRO" (Figure 16) is the name chosen for the innovative brand concept. It encapsulates the Brand's core value proposition: to deliver personalized micronutrient solutions tailored to each customer's unique needs. The Brand's commitment to ensuring the correct micronutrient intake for optimal health and wellness is reflected in the accuracy of the customization service. The design of the Brand is intentionally minimalistic and elegant, drawing inspiration from the structure of a DNA chain to evoke the meticulous and individualized approach the brand provides in addressing each individual's nutritional requirements. The choice of a green-derived colour palette not only express the integration of natural-based elements and the commitment to sustainability of the Brand, but additionally conveys a sense of elegance, trust and accountability.

Furthermore, the name MYCRO is intended to be distinctive and simple, fostering brand recognition and making it a natural topic of conversation. The Brand's purpose to provide personalised health supplements solutions with an emphasis on environmental responsibility and customer-centered program is embodied in this name and design philosophy.

²⁰ Survey outcomes in Appendix section.



Figure 16. MYCRO Brand's Logo; Source: Author

The innovative product packaging prototype designed during the conceptualization of the product idea reflects the Brand's core value proposition. The concept of the box delivered to customers (Figure 17), features an intuitive opening mechanism which allows to retrieve daily sachets (Figure 18), containing a tailored blend of all the micronutrients needed from each specific individual plan. The packaging choice not only emphasizes the ease of integrating MYCRO into daily routines but also reflects the brand's commitment to personalized health. Indeed, each sachet become a daily indicator of MYCRO's commitment to providing precision and personalisation in addition to a nod to the Brand's sustainability consciousness, minimizing waste and encouraging responsible consumption. MYCRO's packaging concept embodies a daily touchpoint of the Brand's dedication to customer's unique health journey, designed to be effortlessly integrated into different lifestyles.



Figure 17. MICRO's Monthly Box; Source: Author



Figure 18. MICRO's Daily Sachet; Source: Author

Price

The general concept of MYCRO'S pricing originates from the investigation conducted in the market research chapter, particularly from the outcomes of the survey distributed to a sample of potential customers: 44% of the sample would pay a higher price, with the condition of not

being significantly higher; and 39,4% of the sample would pay a premium price without any condition.

The offer provided by MYCRO includes two different services, each associated with a specific price: MYCRO BASE service and MYCRO PLUS service.

The idea behind the price charged for the BASE service is to provide a high-quality personalised experience at a slightly higher price than standardized supplements; therefore, charging only the ordinary costs associated with the production and delivery of the product. The cost for the BASE service has been set at 25€ per monthly solution.

As previously explained in the Business Concept chapter, MYCRO PLUS service is based on a monthly supply, elaborated after an initial assessment from MYCRO specialists. The service further comprises periodic follow-up interviews, every 2-3 months, to evaluate the progress of the integration plan and eventually implement required adjustments. The philosophy adopted in the pricing of this package is to strike a price point that is convenient compared to single purchases, but also takes into account the costs associated with interviews and further personalization. The PLUS service has been established to be offered at 35€ for the monthly supply.

Both services can be further backed up by the results of blood samples or DNA tests performed by MYCRO's partner clinics. The cost of this optional service is fully borne by the client.

MYCRO aims to charge the costs of additional services, such as supplementary interviews regarding the implementation of a specific nutrition plan that supports and enhances the effectiveness of the micronutrient supplementation plan. Added costs related to the integration of further customization elements of the supplementation plan or specific nutritional elements to the developed solutions will be estimated according to the specific expenses associated with the additional services.

Place

MYCRO will not open physical retail stores, rather prioritizing the online presence, because of two primary reasons: Reduce operating costs and capitalize the most out of the growing e-shopping market. This strategy allows the start-up to reinvest more resources into further development of the product and optimization of the customer experience.

Nevertheless, direct interaction with customers and the creation of immersive brand experiences remains a central target for MYCRO. Therefore, the brand launch strategy will feature pop-up stores or temporary stores in strategic locations to increase brand exposure. These temporary events hold the benefit of maintaining a controlled and flexible costs structure while simultaneously engaging potential consumers, allowing them to discover the MYCRO brand in a physical context.

Promotion

To promote and increase the awareness of the new brand, drive more interest in the micronutrients importance and reach more clients MYCRO relies on different communication methods that will reach the brand's main target.

Partnership with clinics and laboratories: One of the main strategies to enhance trust of potential consumers, in the sensitive field of health supplements, MYCRO seeks to secure partnerships with specialized clinics and laboratories, which in addition to offering services related to the production of micronutrient solutions, help to improve the brand perception from potential consumers by associating the brand with healthcare structures.

Social media: As new generations are highly engaged with social media, MYCRO plans to leverage these channels to reach and effectively communicate with the targeted audience. Regular base publication of posts on MYCRO's Instagram and TikTok accounts will aim to stay top-of-mind with potential consumers and showcase the brand's new product and services. Social media platform management examples can be found in the appendix section.

Sponsorships: MYCRO identifies sponsorships as an effective strategy to foster engagement, increase brand value and achieve new sales. Athletes renowned for being particularly dedicated to a correct intake of nutritional values may represent an opportunity for the brand to reach a wider audience through communication channels that reflect MYCRO's personality and values.

Events: The main purpose of holding Launching Events, in Lisbon and other strategic location, is to reach as many customers as possible and to introduce the business idea to potential partner companies, giving them the possibility to experience physically the brand's values.

Pop-up stores: As previously discussed in the Place "P", in order to increase the brand exposure and engage potential customers allowing them to discover the business in a physical context, MYCRO will open pop-up stores or temporary stores in strategic locations throughout the Lisbon area, during the first two year after the brand's official launch date.

Gadgets²¹: MYCRO branded gadgets will be distributed during the launching events, but also after the first launch, in strategic location of the city of Lisbon to increase the visibility of the brand. These products are designed for everyday use, functional and stylistically in line with the brand, to reflect the identity of MYCRO.

People

Despite the absence of physical stores, it is crucial that every person associated with MYCRO, starting from the nutritionists who customize the personalized solutions, continuing with the employees of the temporary pop-up stores, all the way to the distribution company, is carefully recruited to reflect the values of the brand. This includes conveying professionalism, trust and security, which are also crucial aspects in partnerships with sponsors and specialized clinics. Such collaborations play a strategic role in ensuring these core values are transmitted to all customers and the potential market.

Process

In order to be successful, MYCRO's processes to deliver products and services to clients must be user-friendly and appealing to engage and retain customers. Well-designed processes, in which the consumer is actively involved, improve customer satisfaction by making interaction with the company smooth, efficient and enjoyable. These processes encompass the entire flow of activities that the client experiences, from initial research to after-sales services, as well as the purchase and use of the product. Table 7 breakdown the processes that characterize the services offered by MYCRO.

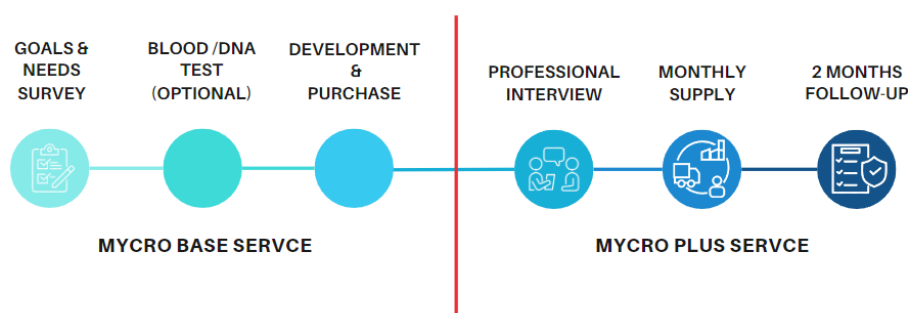


Table 7. MYCRO's processes breakdown; Source: Author

²¹ MYCRO Branded Gadgets: Appendix section

BASE SERVICE:

- Initial questionnaire to delineate customer's preferences, habits and to identify the goals of the tailored supplementation plan.
- Option of uploading blood/DNA test, performed by one of MYCRO's partner clinics. Allow a more precise and detailed customization solution.
- Formulation of the personalized solution that meets all the requirements outlined from the previous phases thanks to AI technologies, data collection and expertise from MYCRO specialists.

PRODUCT/SERVICE PURCHASE**PLUS SERVICE:**

- Interview with MYCRO specialists for the evaluation of customers' goals, habits and blood/DNA test results, followed from the explanation of the purposes to accomplish through the tailored supplementation plan.
- Monthly supply of the personalized solution featuring the practical boxes which include sachets for each day of the month.
- Periodic (2 months) follows-up to evaluate the progress of the supplementation plan and eventually implement required adjustments.

Physical Evidence

Since the service offered by MYCRO is intangible by nature, physical evidence becomes crucial in helping customers assess and perceive the quality of the product and service offered. This includes product presentation, packaging, marketing strategies, website, pop-up stores and all elements of the marketing mix explored in this "7Ps" section.

2. Organisational Strategy

2.1. Capacity, Logistic and Operations

2.1.1. Location and Dimension

Considering the nature of MYCRO's proposed business, which focuses on the personalisation and distribution of micronutrients solutions without the necessity of manufacturing the goods in-house, a lean and flexible organizational structure appears to be the most functional and cost-effective approach.

The strategy adopted during MYCRO's first five years is not to open physical retail shops, leveraging the growing trend of e-commerce. The organization will only rent a relatively small warehouse where it will receive the materials from suppliers, prepare and assemble the personalised solutions through automated processes and finally store the products ready to be shipped. Inside this warehouse there will only be a small office area designated to be used by the CEO and the responsible for the machines and the inventory. In addition to this main facility MYCRO plans to rent and provide co-working spaces for its staff.

OFFICE

Co-working spaces are ideal for keeping fixed costs low, while offering access to essential services such as meeting rooms, networking and flexibility through short-term contracts that are ideal for growing start-ups with changing needs. These solutions also foster collaboration and network expansion, exposing the team to a dynamic and innovative environment. MYCRO opts for co-working spaces in Lisbon, such as Regus²² or LACS²³.

In addition, MYCRO will integrate remote working into its operational structure to offer significant benefits in terms of cost, efficiency and attractiveness: cost reduction, flexibility, employee work-life balance and expansion of the recruitment base.

WAREHOUSE

The decision to rent a warehouse is driven by the necessity to integrate the crucial functions of the business in one single location:

- **Centralized Operations:** Renting a warehouse enables the centralization of the material reception, the production of personalised solutions, the packaging of sachets, the storage

²² Regus: <https://www.regus.com/pt-pt>

²³ LACS: <https://www.lacs.pt/pt/planos/>

and distribution of products. The purpose is to streamline processes by reducing handling timings and improving co-ordination between the different stages of production and distribution.

- **Control:** Having your own warehouse enables direct and continuous control over the quality of the production processes. The automated sachet packaging machine operating under the same roof ensures that the finished products meet the required quality and precision standards.
- **Scalability:** A properly sized warehouse offers the flexibility to scale up operations without interruption, reorganizing space as demand grows.
- **Safety and Compliance:** Ensuring that all safety and environmental obligation are met reduces legal risks and reinforces the company's image as responsible and trustworthy in the eyes of customers and partners.

In conclusion, renting a warehouse is a strategic decision that supports operational efficiency, guarantees product quality, and provides the basis for future expansion, ensuring MYCRO a solid foundation for success in its target market.

The strategic location of the warehouse directly influences logistical efficiency. This is why MYCRO decided to choose a site close to major transport nodes such as motorways and shipping centres. This significantly reduces costs and shipping times, improving customer satisfaction with faster deliveries. MYCRO aims to locate his warehouse in the Prior Velho²⁴Area, in Lisbon.

2.1.2. Workflow

INTERNAL AND CLIENT'S WORKFLOW

It is essential to coordinate internal and customers' workflows in order to effectively manage production and orders. Table 8 illustrates the two workflows, highlighting their intersection: the moment when the input is given to the machine to produce, by using the specific nutrient, the exact personalised solution developed during the interaction with the customer.

²⁴ Prior Velho: Location in Appendix section

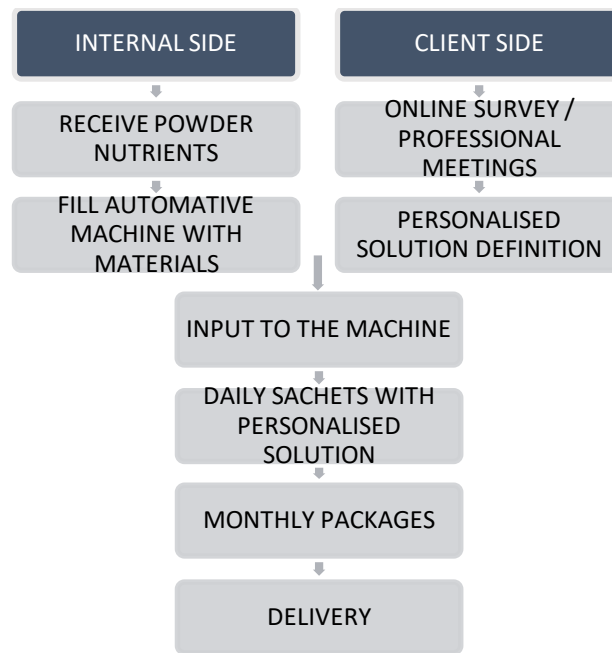


Table 8. Internal and Client's Workflows; Source: Author

WAREHOUSE DESIGN

The logistic layout of the warehouse is arranged in a U-shape. This configuration was chosen to maximize workflow efficiency, facilitating operations from the reception of materials to the dispatch of finished products. The U-shaped design allows the distinction between the receiving area and the shipping area, each of which connects to its own dedicated storage space. Centrally located between these two areas there is the production centre featuring the automated machine responsible for preparing the personalised solutions and packing the sachets for the monthly packages. The solutions produced are then stocked in the static storage area, strategically positioned before the shipping dock.

AUTOMATIVE MACHINE

To ensure fast and efficient production of personalised solutions, MYCRO relies on high-precision equipment capable of dosing and pouching minimal quantities, in the order of a few grams of powdered micronutrients. These automated systems are designed to interpret and execute detailed, customized inputs for each order, ensuring that every solution is precisely aligned with the customer's needs. Illustrations showing examples and specific technical data of such equipment can be found in the Appendix section of the business plan.

While primary packaging is entrusted to an automated machine; at least at the beginning of its course, MYCRO entrusts secondary packaging to humans. The 30 daily sachets are placed inside a monthly pack from which the sachets can be extracted each day.

Following consideration of different alternatives, Marchesini Group²⁵ is the company that has been identified as the most suitable candidate for supplying the production and packaging line machinery. Their MS series is the starting model, from Marchesini group to which specific adaptations can be applied, identified as congruent with the functions required for MYCRO's production processes. Pictures of the MS series are in the Appendix section

In-depth analysis of the investment required for these machines is provided in the expenses section of the business plan.

2.1.3. Distribution Channels

MYCRO selects e-commerce as the primary distribution channel. The strategy reflects the nature of the product, which does not require significant physical interaction to trigger the purchase by the customer. This decision is also founded on the examination of advantages and features emerged from the secondary research on e-commerce conducted during the development of this business plan.

MYCRO opts to outsource shipping operations mainly to keep operational costs low, focus the resources on the development of the personalised solutions and guarantee adequate efficiency by underwriting contracts with reliable and efficient delivery companies. The national postal service, CTT Correios de Portugal²⁶, stands as the most beneficial alternative for a start-up in Lisbon seeking an efficient and cost-effective solution. As the national postal service provider, CTT offers several advantages: Generally lower postage fees compared to private competitors, extensive coverage throughout Portugal, providing delivery even in less accessible areas and a range of customizable services to the specific needs of the company.

As previously explained in the development milestones section of the project, During the third year MYCRO aims to expand the business to the European market: The brand thrives to secure deals with international delivery companies, partners of CTT Correios, as well as obtaining more lucrative deals with the National partner, in order to compensate the costs of the new international partnerships.

²⁵ Marchesini Group: <https://www.marchesini.com/it/imbustinatrici-verticali>

²⁶ CTT Correios de Portugal: <https://www.ctt.pt/particulares/index>

2.2. Organizational Chart

In the early stages of its activities, MYCRO's organizational structure will require considerable versatility among job positions. It will be essential for the team members to perform interdisciplinary tasks and adapt dynamically to different functions.

Headcount: 7

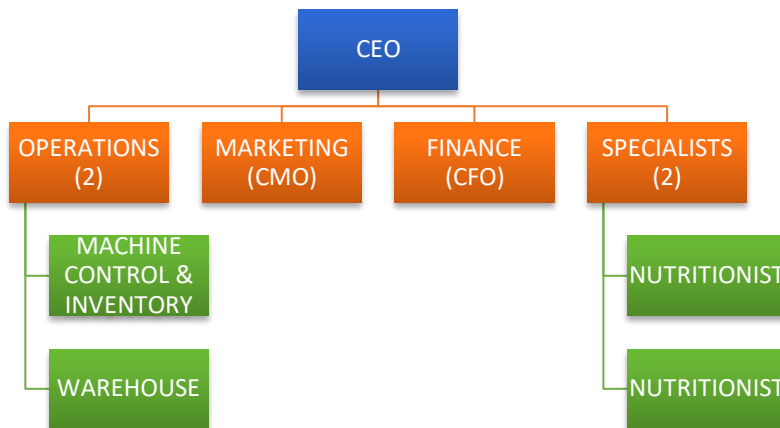


Table 9. MYCRO's initial organizational chart; Source: Author

As the business expands, specifically from year three onwards, MYCRO plans an expansion of the workforce with more specialized positions. The increase in human resources will incorporate more product preparation staff and an additional number of nutritionists to meet growing customer demand. Additional support will also be integrated around customer relationship management, to enhance customer service and satisfaction.

Headcount: 13

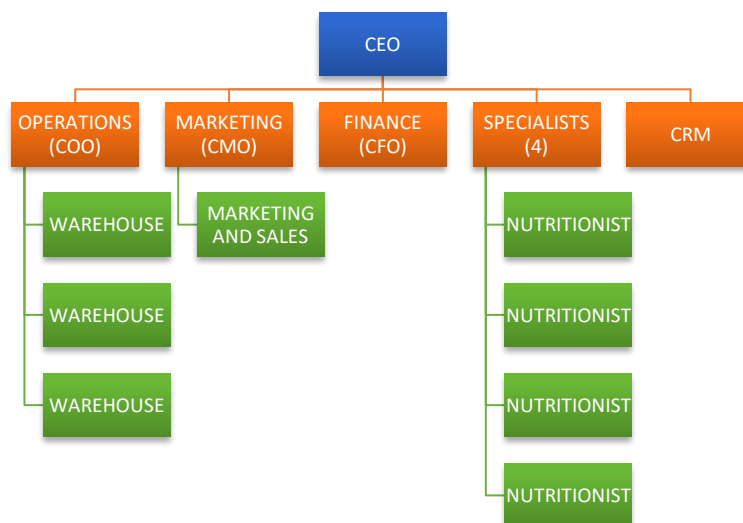


Table 10. MYCRO's complete organizational chart; Source: Author

2.3. Partnerships

During the development of this business plan, the relevance of strategic partnerships was made evident. These partnerships are crucial to produce personalised micronutrients solutions, but also for broadening the potential customer base and establishing a relationship of trust and reliability. Partnering with renowned medical institutions enhances the brand's reputation while at the same time providing access to advanced technical expertise and a clinical data base that can significantly improve the accuracy and efficacy of the personalised solutions. This strategic approach is intended to build an impression of excellence and reliability, attracting customers looking for scientifically validated products.

Lisbon is home to several clinics and laboratories specialized in blood and DNA tests that could serve as partners for MYCRO. Here follow few examples:

- Medical Port²⁷: This institute offers a wide range of medical services, including blood tests. Its focus is to connect individuals with high quality healthcare facilities in Portugal. The clinic is located in a central area of Lisbon, which could be advantageous for logistics.
- AffinityDNA²⁸: Provides accurate and confidential DNA tests, with a variety of services including genetic testing to determine predispositions to specific medical conditions.

Both organizations have the accreditations required and use advanced technology to ensure accurate results, enabling effective and reliable collaboration in the production of personalised solutions.

- DSM²⁹: identified as the ideal partner for the provision of micronutrient powders, in the following section dedicated to MYCRO suppliers; DSM will also be crucial for its expertise and support in the development and production of micronutrient blends and for regulatory compliance assistance.

²⁷ Medical Port: <https://www.medicalport.org/pt>

²⁸ AffinityDNA: <https://www.affinitydna.eu/dna-news-stories-articles/dna-testing-in-lisbon/>

²⁹ DSM: <https://www.dsm.com/human-nutrition/en/nutrition-improvement/focus-areas/public-health-supplementation.html>

2.4. Suppliers

Powdered Micronutrients

As previously mentioned, MYCRO finds in DSM the characteristics of the ideal partner for the sourcing of micronutrient powder solutions. The Dutch company is a global leader in the nutrition sector, boasting an established reputation for the quality and reliability of its products and standing out for its contribution in humanitarian aspects. DSM cooperates with international organizations such as UNICEF to provide essential nutritional support in crisis environments.

DSM's production facilities in more than 40 countries ensure continuous and immediate availability of the required powdered micronutrients. This global presence facilitates efficient logistics, reducing lead times and the costs associated with transportation.

DSM is committed to continuous innovation and scientific investigation and provides customers with technical and scientific support to develop tailor-made solutions.

Packaging Solutions

The product concept developed during the business plan consist in recyclable organic monthly packages (secondary packaging) featuring 30 daily use personalized micronutrients aluminium non-reusable stick sachets (primary packaging). MYCRO identified some of the most renowned specialists in the powder packaging sector as potential partners. Companies such as Gualapack³⁰ or SAES Coated Films³¹, actively cooperating with leading nutraceutical solutions producers.

³⁰ Gualapack: <https://gualapack.com/>

³¹ SAES Coated Films: <https://www.saescoatedfilms.com/>

3. Implementation Requirements

3.4. Legislation

Initial requirement for the newly established business is that it must be registered. The online registration process allows you to request to register name, brand and the type of company, if the following documents are presented:

Legislation
Commercial Register Office
Social insurance registration
Declaration of activity initiation
Certificate of Admissibility
Social Capital Deposit
Society Constitution Act

Table 11. Legislation for new companies; Source: Author

The current cost to establish a business is 360€, to pay at the moment of the company's constitution. It covers society associated publications and commercial registration costs. Additional monthly costs are associated the opening of the startup:

Fiscal
IRC (21%)
Derrama (Up to 1,5%)
IVA (23%; 13%; 6%)
23,5% rate over the employees' salaries

Table 12. Fiscal Obligation; Source: Author

3.5. Requirements

New companies must meticulously meet the standard requirements, particularly when attempting take part in programs that offer financial support. The most common requirements are illustrated in the following table:

Requirements
Correctly established and registered
License and legal requirements necessary to exert activity
Regularized Tax status and social security
Prepared accounting and accordingly to the law

Table 13. New enterprises Requirements; Source: Author

CHAPTER VII: FINANCIAL ANALYSIS

1. Revenues

MYCRO's revenues are crucial statistics for assessing the viability and performance of the company. The startup generates money from two different sources: Revenues from the core service and revenues from Ads. In this section, the revenues generated from the startup will be broken down by each channel to examine the patterns and variables that influence the company's performance. Figure 19 shows the total revenue MYCRO estimated to generate over the five years of the project lifecycle.

Product and Services	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
BASE Service	255.000,00 €	510.000,00 €	990.000,00 €	1.725.000,00 €	2.400.000,00 €
PLUS Service	105.000,00 €	210.000,00 €	420.000,00 €	735.000,00 €	1.050.000,00 €
Additional Services	12.000,00 €	24.000,00 €	48.000,00 €	84.000,00 €	120.000,00 €
Alimentation Plan	-	-	18.000,00 €	36.000,00 €	90.000,00 €
Total	372.000,00 €	744.000,00 €	1.476.000,00 €	2.580.000,00 €	3.660.000,00 €

Figure 19. MYCRO Revenues from Product and Service; Source: Author

1.1. Revenue from Product and Service

MYCRO's main source of revenue comes from its primary business of selling personalised micronutrient powder solutions. As already manifested earlier in the business plan, the prices of the BASE and PLUS services will be respectively 25€ and 35€, together with the additional services and the alimentation plans, they will allow the brand to achieve, after the first year, an annual revenue of 372.000,000€ and, over the five years, a total yearly revenue of 3.660.000.00€.

A more detailed breakdown of the results the Brand expect to accomplish are showed in the Appendix section. They are accomplished through assumptions on the number of products and services sold monthly, that are based on the estimation of the yearly SOM for the company and considering the nature of the product offered by MYCRO and the comparison with the existing solutions on the market. The personalized solution, will aim to a relatively smaller audience, offering a slightly price premium. Therefore, the estimated products sold per month start from a 0,05% of the total market clients and reaches a 0,5% at the end of the five years period.

1.2. Revenue from Ads

The revenues generated from advertising are based on the CPM and CPC pricing models.

CPM

Cost per Mille is a metric that indicates the cost per thousand impressions. Basically, it is the fixed price that an advertiser is charged for every thousand impressions the ad receives by MYCRO's platform users, regardless of whether or not they click on it.

The CPM value in Portugal is 9,39 (Alonz, 2021), which indicates that advertising generates 9,39€ each thousand impressions from the customers on MYCRO's platform.

The estimations for the impression with the website start from a more conservative 10% in the first year, then to reach 20% within the fifth year. These estimations are based on the total number of customers MYCRO expects to be able to serve (SOM) divided by the 30 days of the month.

CPC

Cost per click is a metric primarily concerning advertising in social network platforms, used to determine the cost invoiced to an advertiser whenever a user clicks on their advertisements. The revenue generated from CPC is also based on the estimated SOM and on the valued interaction rate of 1% in the first year and 6% in the last year. The average value of CPC in Portugal is 0,07€ (Alonz, 2022).

Tables picturing the complete estimation of the Revenue from CPM and CPC can be found in the Annexes section.

2. Expenses

2.1. Cost of Good Sold

COGS represents the expenditure incurred by a company for the creation, production and sale of a product. it includes the acquisition price of raw materials, all the packaging costs necessary to transform them into a product ready to be sold, and lastly the costs of shipping and delivering the final product to the customer.

The results showed in Figure 20 are accomplished considering the estimated weight of singular sachet of micronutrient powdered solution. The format selected by the brand to achieve

a comfortable solution for daily use and to ensure the correct nutritional intake is equivalent to a stick containing 7,5g of solution. Therefore, the monthly boxes will contain a total of 225g of micronutrient solutions.

The costs of raw materials in the case of MYCRO are only related to powdered micronutrients. Upon a comprehensive market analysis of the main suppliers of micronutrients in the European scenario and the identification of partners adequate to the company's requirements, an average price of €60/kg was estimated for the powdered micronutrients, with the ambition of securing a price of €50/Kg from the third year onwards, considering the expected exponentially increasing purchase volumes. As the main supplier for the micronutrients in powder solutions MYCRO has individuated, as the best fit for the brand's necessities, a leading company specialized in the production of nutraceuticals, standardized herbal extracts, specialty chemicals and probiotics for the pharmaceutical and food industries called Sabinsa³². The Supplier is totally aligned with MYCRO's purpose and ethics and represent a great source of professional expertise.

The same *modus operandi* was used to estimate the packaging prices; attributing a cost of 0.06€ per sachet for primary packaging and 0.60€ for the secondary packaging and the monthly box. In both scenarios, due to the expected growth in sales volumes, lower costs of respectively 0.05€ and 0.50€ were considered, starting from the third year.

Shipping costs are based on data provided by CTT, previously identified as an ideal partner. The costs related to domestic shipments for companies under contract is equivalent to 2.05€ (*Correio Normal*, n.d.); price can be reduced to 1.64€ (*Correio Normal*, n.d.) if certain volumes of shipments are achieved. MYCRO aims to reach these volumes in the third year. In Figure 20 the price of € 2.05 has been considered for the total duration of the project, to compensate the higher costs of international shipments, planned to be introduced from Year 3.

<u>Cost of Good Sold</u>	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	2024	2025	2026	2027	2028	2029
Multivitamins Powders	2.700,00 €	178.200,00 €	356.400,00 €	580.500,00 €	1.012.500,00 €	1.417.500,00 €
Primary Packaging	360,00 €	23.760,00 €	47.520,00 €	77.400,00 €	135.000,00 €	189.000,00 €
Secondary Packaging	120,00 €	7.920,00 €	15.840,00 €	25.800,00 €	45.000,00 €	63.000,00 €
Shipping Costs		27.060,00 €	54.120,00 €	105.780,00 €	184.500,00 €	258.300,00 €
Total	3.180,00 €	236.940,00 €	473.880,00 €	789.480,00 €	1.377.000,00 €	1.927.800,00 €

Figure 20. MYCRO Costs of Good Sold; Source: Author

³² Sabinsa: <https://sabinsa.com/>

2.2. CAPEX

The Annexes section features a table that depicts all the electronics equipment the business needs on a daily-work basis together with the automated machine responsible for the compounding and packaging of the personalised micronutrient solutions. The price of these machines can be variable depending on the specific requirements of the business; After research on the prices from the designed supplier Marchesini Group, the estimation for the expense on a high precision and personalisation performances machine result turns out to be 240.000€. During the third year, is expected to reach enough stability to invest in another machine that could streamline the division and production of the micronutrients' solution even more efficiently, with a cost of 300.000€. This investment is planned to be fully financed internally and divided throughout Year 3, 4 and 5. The detailed Depreciation Table for all the assets can be found in the Annexes section.

To create MYCRO's website the best cost-effective option turned out to be outsourcing and hiring freelancers to ensure the development of a quality output. The total amount for the development of the website is estimated to be 30.500€. The depreciation rate for this asset is 20%, or 5 years. A detailed breakdown of the development costs can be found in the Annexes section of the project: frontend (UI/UX design), backend coding, AI integration, testing and security development costs.

2.3. OPEX

Besides the company's assets, all the fixed costs were accounted and divided in two sections: Office and Household and Finance&Ops.

Starting with Office & Household, we considered everything corresponding to our warehouse, such as rent and electricity; along with all costs related to renting private rooms in co-working spaces.

Figures 21 and 22 depict the fixed costs considered for each of these elements, based on research of the current costs for the specific needs of the company.

Office & Household	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Rent	9.000,00 €	36.000,00 €	36.000,00 €	36.000,00 €	36.000,00 €	36.000,00 €
Electricity	1.500,00 €	6.000,00 €	6.138,00 €	6.279,17 €	6.423,60 €	6.571,34 €
Cleaning		2.400,00 €	2.455,20 €	2.511,67 €	2.569,44 €	2.628,54 €
Broadband	150,00 €	600,00 €	613,80 €	627,92 €	642,36 €	657,13 €
Business Insurance		1.200,00 €	1.227,60 €	1.255,83 €	1.284,72 €	1.314,27 €
Total	10.650,00 €	46.200,00 €	46.434,60 €	46.674,60 €	46.920,11 €	47.171,27 €

Figure 21. MYCRO's Fixed Costs (Office and Household); Source: Author

Co-working Space	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Office		12.000,00 €	12.000,00 €	18.000,00 €	24.000,00 €	24.000,00 €
Meeting Rooms	3.000,00 €	12.000,00 €	12.000,00 €	18.000,00 €	24.000,00 €	24.000,00 €
Total	3.000,00 €	24.000,00 €	24.000,00 €	36.000,00 €	48.000,00 €	48.000,00 €

Figure 22. MYCRO's Fixed Costs (o-working Space); Source: Author

Figure 23 illustrates the fixed costs associated with MYCRO's Finance & Ops category cover all the expenses related to the website maintenance and the financial and operational activities. Including costs such as business license and registration, legal and bookkeeping support, and other functions essential to guarantee the company operates effectively and in accordance with legal requirements. As the business is expected to keep growing, some of the financial and operational activities will rise, increasing these fixed costs. Some of these costs becomes higher each year, taking into consideration an inflation year-to-year value of 2.3% (Economic Forecast for Portugal, n.d.-c).

Finance and Ops	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Website Maintenance	- €	2.000,00 €	2.000,00 €	2.000,00 €	2.000,00 €	2.000,00 €
Bookkeeping Support	- €	250,00 €	300,00 €	500,00 €	750,00 €	1.000,00 €
Legal	- €	1.500,00 €	2.500,00 €	5.000,00 €	15.000,00 €	25.000,00 €
YE Account	- €	1.500,00 €	1.534,50 €	1.569,79 €	1.605,90 €	1.642,83 €
Business Registration	- €	360,00 €				
Total	- €	3.610,00 €	4.334,50 €	7.069,79 €	17.355,90 €	27.642,83 €

Figure 23. MYCRO's Finance and Operations Costs; Source: Author

2.4. Staffing

To evaluate MYCRO's payroll expenditures, several factors including base salary, Social Security and employee benefits, were taken into consideration:

- The salary of every employee is based on role and responsibilities.
- The expense for Health Insurance against injuries on worksite is established as 1% of the base salary of each employee, while Food Allowance is set to a total o 8,32€ per day.

- Social Security expenses are calculated with the fixed rate of 23,75% (Cálculo Das Contribuições - seg-social.pt, n.d.) on each employee salary. Furthermore, an additional 0,075% (FGCT - Fundos De Compensação, n.d.) on top of each worker's salary must be paid by the company for the compensation of the FCGT³³ fund.

As previously considered for the revenues and the other expenses, the business is expected to grow. MYCRO's team will increase through the years and therefore the costs arising from salaries. Before the Launch of the product only the CEO, the marketing responsible and a nutritionist will be employed, in order to be able to develop the product and decide the organize the strategic positioning into the market. MYCRO human resources are projected to grow over the period under analysis; meaning the salaries expenses will grow over time. Moreover, an average annual increase of 2% was calculated for each employee, in order to cover inflation and costs related to salary raises. By the end of Year 5 the total estimated expense is accounted for 402.006,96€. Exhaustive breakdown of each specific cost linked to each job position and the expected total expenditure from salaries payment is illustrated by two tables in the Annexes section.

2.5. Marketing

Marketing expenses play a crucial role in the development and expansion of MYCRO's brand presence. The strategy focuses on various promotional activities designed to establish a significant market footprint and stimulate customer engagement.

Social Media Advertising: Starting with a modest budget, the investment in social media advertising is planned to increase progressively each year. This reflects the growing need to enhance online visibility and engage a wider audience as the brand gains notoriety. The initial budget of 10.000€ is projected to increase to 20.000€ by the fifth year.

Pop-up Store: During the first two years, the costs related to the initiative of setting up temporary shops in strategic location in Lisbon, to establish a physical brand presence, is estimated at 5.000€ per year, covering rent, set-up and operational costs.

Events: A significant portion of the marketing budget is allocated to pre- and post-launch events. The peak of the investment is expected in year 3, aligning with MYCRO's

³³ FCGT: Fundo de Garantia de Compensação do Trabalho <http://www.fundoscompensacao.pt/fgct>

expected expansion strategy beyond Portugal. The events budget will increase from the 20.000€ of years 1 and 2 to the 40.000€ of year 3.

Branded Gadgets: An annual budget of 2.000€ is dedicated to branded gadgets.

Sponsoring: Starting in year 2, substantial investments are considered for sponsorships with professional clubs or athletes who can act as MYCRO's brand ambassadors. This strategy is expected to drive the growth of marketing expenses, leveraging the reputation and reach of these partners to boost brand credibility and market penetration. The direct sponsorship budget is set at 100.000€ per year, to which is added the costs of product supply to the sponsees.

The total cost represented by the Marketing elements add up to 32.000€ in Year 0 and 174.720,80€ at the end of the five years. The Annexes section have a table that provides a detailed breakdown of the marketing expenses over the project lifetime.

3. Financial Forecasts

3.1. Funding Options and Capital Structure

When planning the capital structure of an emerging startup, decide how to finance the venture, between the different sources of funding available results a crucial decision. Each option has distinct benefits and trade-offs, and the ideal combination relies on your preferred level of control on the company, expansion objectives, and business strategy. This chapter will examine the main sources of funding used by startups; therefore, it will indicate the most suitable funding sources and capital structure for MYCRO.

Family, Friends, and Fools

Personal savings and contributions from family, friends or close contacts (FFF) is one of the most accessible forms of funding. It is particularly relevant as banks and investors demand the business owner to demonstrate their commitment risking their own funds. Banks and venture capitalists typically require that 20-30% of the initial investment comes from personal or FFF funding.

Bank Loans

Common form of debt financing, where you borrow a sum from a bank and agree to pay it back over time with the addition of interests. As previously said, it is crucial to secure a significant

amount of capital to enhance the startup's credibility and get a loan from a bank; that are often more risk-averse than the other financing methods

The main advantages of bank loans are not including a dilution of ownership and the fixed repayment schedules that can help planning the cashflows.

Venture Capital

Equity financing where investors provide capital in exchange for shares of the company. Typically used by startups looking for an aggressive expansion. Venture capitalists might also bring industry expertise, connections, and strategic guidance.

The advantages offered from VC are the large amount of capital, the valuable expertise and the network. However, they feature a relevant loss of equity and control over the business and high pressure to ensure quick returns.

Business Angels

Individual capital contributors who pledge ownership equity in return for their financial support, that generally fund early-stage enterprises. They also offer assistance and personal involvement with the business, which might be beneficial for startups seeking to overcome early challenges.

Capital Structure

MYCRO chooses business angels over venture capital for their flexibility, personalized support, and patient approach, enabling steady growth while maintaining greater control and avoiding the higher pressure often associated with VCs.

The brand estimated to start building the company's capital structure with an Initial Investment of 100.000€ from its own pocket together with Friends, Family and Fools and resorting fundings from Business Angels of 100.000€. Additionally, throughout the next two years of the startup's life (Year 1 and Year 2) the equity is expected to increase, employing new fundings, respectively of 100.000€ per year, with the purpose of strengthening the company's financial position and providing enough safety so that a bank gives MYCRO the opportunity to get a loan.

3.2. Loan

With the purpose of financing its operations, MYCRO takes on a loan of 240.000€ featuring a TAN³⁴ of 9,75%. The loan represents a crucial source to balance the company's liquidity and is accounted to be fully repaid over the 6 years, considering Year 0 as a starting point. The calculated annual payment corresponds to 54.702,66€. Figure 24 depicts a clear breakdown of the loan structure.

	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Beginning of the Year	200.000,00 €	173.914,45 €	145.285,55 €	113.865,34 €	79.381,65 €	41.535,81 €
Annual Payment	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €
Interest Payment	19.500,00 €	16.956,66 €	14.165,34 €	11.101,87 €	7.739,71 €	4.049,74 €
Principal payment	26.085,55 €	28.628,90 €	31.420,21 €	34.483,68 €	37.845,84 €	41.535,81 €
Ending Balance	173.914,45 €	145.285,55 €	113.865,34 €	79.381,65 €	41.535,81 €	- €
Total Interest	73.513,32 €					

Figure 24. MYCRO's Loan Structure; Source: Author

3.3. Income statement – Profit and loss

As previously mentioned in the revenues paragraph, MYCRO has two primary revenue sources: Revenues from Products and Services sold and Ad Revenue. With this considered, MYCRO accounted a total net revenue equal to 378.629,63€ in the 1st year reaching a value of 3.834.345,50€ in the 5th year. Deducting the Direct Costs, such as the costs of raw materials, packaging and shipping costs, the startup starts from a negative Gross profit of -3.180€ in Year 0, where MYCRO yet has to start selling its services, and reaches the value of 1.906.545,50€ Gross Profit after five years.

Focusing on the end of the 5 years period under analysis in this Project, all the Operating Expenses must be subtracted in order to get the EBITDA of 1.105.003,63€ (Year 5). Once more, depreciation and amortization amounts are subtracted, leaving 1.000.143,94€ of EBIT. Finally, in the last year, MYCRO generated a final net income of 746.007,37€ after subtracting the Interest Expenses and all the Income Taxes.

Figure 25 represents all the elements that that influenced the estimation of the Income Statement values for the lifetime of the project.

³⁴ TAN: Nominal Interest Rate

Income Statement - Profit and Loss	Year0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Revenues	- €	372.629,63 €	745.981,22 €	1.481.540,70 €	2.593.486,57 €	3.684.345,50 €
Product and Service	- €	372.000,00 €	744.000,00 €	1.476.000,00 €	2.580.000,00 €	3.660.000,00 €
Ad Revenues	- €	629,63 €	1.981,22 €	5.540,70 €	13.486,57 €	24.345,50 €
Cost of Goods Sold (Direct Costs)	3.180,00 €	236.940,00 €	473.880,00 €	789.480,00 €	1.377.000,00 €	1.927.800,00 €
Raw Materials	2.700,00 €	178.200,00 €	356.400,00 €	580.500,00 €	1.012.500,00 €	1.417.500,00 €
Primary Packaging	360,00 €	23.760,00 €	47.520,00 €	77.400,00 €	135.000,00 €	189.000,00 €
Secondary Packaging	120,00 €	7.920,00 €	15.840,00 €	25.800,00 €	45.000,00 €	63.000,00 €
Shipping Costs	- €	27.060,00 €	54.120,00 €	105.780,00 €	184.500,00 €	258.300,00 €
Gross Profit	- 3.180,00 €	135.689,63 €	272.101,22 €	692.060,70 €	1.216.486,57 €	1.756.545,50 €
Gross Profit Margin (%)	-	36%	36%	47%	47%	48%
Operating Expenses	161.713,40 €	351.254,87 €	467.558,87 €	645.288,13 €	681.121,28 €	701.541,87 €
Warehouse	10.650,00 €	46.200,00 €	46.434,60 €	46.674,60 €	46.920,11 €	47.171,27 €
Office	3.000,00 €	24.000,00 €	24.000,00 €	36.000,00 €	48.000,00 €	48.000,00 €
Staffing	116.063,40 €	236.444,87 €	241.173,77 €	386.396,54 €	394.124,47 €	402.006,96 €
Marketing	32.000,00 €	39.000,00 €	149.616,00 €	167.147,20 €	172.720,80 €	174.720,80 €
Finance & Ops	- €	3.610,00 €	4.334,50 €	7.069,79 €	17.355,90 €	27.642,83 €
Website Maintenance	- €	2.000,00 €	2.000,00 €	2.000,00 €	2.000,00 €	2.000,00 €
EBITDA	- 164.893,40 €	- 215.565,24 €	- 195.457,65 €	46.772,57 €	535.365,29 €	1.055.003,63 €
EBITDA Margin (%)	-	-58%	-26%	3%	21%	29%
Depreciation & Amortization	49.833,33 €	49.833,33 €	49.833,33 €	148.500,00 €	148.500,00 €	100.000,00 €
Amortization of Development Costs	6.100,00 €	6.100,00 €	6.100,00 €	6.100,00 €	6.100,00 €	- €
EBIT (Earning before Interest and taxes)	- 214.726,73 €	- 265.398,58 €	- 245.290,98 €	- 101.727,43 €	386.865,29 €	955.003,63 €
Interest expense	23.400,00 €	20.347,99 €	16.998,41 €	13.322,24 €	9.287,65 €	4.859,69 €
EBT (Earnings before taxes)	- 238.126,73 €	- 285.746,57 €	- 262.289,39 €	- 115.049,67 €	377.577,63 €	950.143,94 €
Corporate Income Tax (21%)	- €	- €	- €	- €	79.291,30 €	199.530,23 €
Derrama Municipal (1,5%)	- €	- €	- €	- €	16.651,17 €	41.901,35 €
Net Income	- 238.126,73 €	- 285.746,57 €	- 262.289,39 €	- 115.049,67 €	281.635,16 €	708.712,37 €
Net Income Margin (%)	-	-77%	-35%	-8%	11%	19%

Figure 25. MYCRO's Income Statement; Source: Author

3.4. Balance Sheet

The balance sheet shows all the assets, liabilities and capital of the company over the first 5 years period. In general, one major rule has to be followed: Totals Assets = Total Equity + Total Liabilities.

In Year 0, the company's assets add up to 227.055,93€. Current Assets are divided into Cash and Equivalents, Inventory and Account receivable. The Cash is defined by the closing cash from the Cashflow Statement of that Year, which will be further specified in section 3.5. The company's hardware and the website are included in the Non-Current Assets. As for the liabilities, MYCRO has decided to take a long-term loan which will be paid off in 6 years. Additionally, a Venture Capitalist is going to provide 100.000€ of Equity to reduce risk within the company. The rest of the equity consists of funding through founder's pocket, friends and families. Figure 26 shows the values estimates for MYCRO's Balance Sheet.

Balance Sheet	Year0 2024	Year1 2025	Year2 2026	Year3 2027	Year4 2028	Year5 2029
Non-current Assets	221.066,67 €	165.133,33 €	109.200,00 €	254.600,00 €	100.000,00 €	- €
Hardware	196.666,67 €	146.833,33 €	97.000,00 €	248.500,00 €	100.000,00 €	- €
Website	24.400,00 €	18.300,00 €	12.200,00 €	6.100,00 €	- €	- €
Current Assets	3.692,15 €	3.358,37 €	26.159,55 €	187.074,55 €	795.156,32 €	1.771.155,43 €
Cash and Equivalents	3.692,15 €	27.641,63 €	35.840,45 €	64.074,55 €	580.156,32 €	1.466.155,43 €
Account Receivable	- €	31.000,00 €	62.000,00 €	123.000,00 €	215.000,00 €	305.000,00 €
Total Assets	224.758,82 €	168.491,70 €	135.359,55 €	441.674,55 €	895.156,32 €	1.771.155,43 €
Current Liabilities	1.011,44 €	8.657,34 €	19.330,62 €	65.887,49 €	105.354,23 €	142.401,54 €
Account Payable	3.819,17 €	27.312,50 €	56.355,43 €	84.364,30 €	134.666,40 €	181.611,24 €
VAT Payable	- 2.807,73 €	- 18.655,16 €	- 37.024,81 €	- 18.476,81 €	- 29.312,17 €	- 39.209,70 €
Non-current Liabilities	173.914,45 €	145.285,55 €	113.865,34 €	79.381,65 €	41.535,81 €	- €
Long-term Debt	173.914,45 €	145.285,55 €	113.865,34 €	79.381,65 €	41.535,81 €	- €
Total Liabilities	174.925,89 €	153.942,89 €	133.195,96 €	145.269,15 €	146.890,05 €	142.401,54 €
Total Equity	49.832,93 €	14.548,81 €	2.163,59 €	296.405,40 €	748.266,27 €	1.628.753,89 €
Shareholder's Equity	284.059,67 €	531.130,77 €	778.201,88 €	1.185.272,99 €	1.354.344,10 €	1.525.515,20 €
Retained Earnings	- 234.226,73 €	- 516.581,97 €	- 776.038,29 €	- 888.867,59 €	- 606.077,82 €	- 103.238,68 €
Total Equity & Liabilities	224.758,82 €	168.491,70 €	135.359,55 €	441.674,55 €	895.156,32 €	1.771.155,43 €
Ratios:						
Working Capital ratio	3,7	0,4	1,4	2,8	7,5	12,4

Figure 26. MYCRO's Balance Sheet; Source: Author

The account VAT Payable describes the difference between the VAT Output and Input of services that are sold and products that are bought from the company. In order to benefit in the Cash Flow calculations, the company has decided to pay the VAT quarterly in Year 0,1 and 2. For the last 3 years, the VAT is paid monthly throughout the year as shown in Figure 27 below:

VAT Roll Forward						
VAT Rate	23%					
Assessment basis	Quarterly	Quarterly	Quarterly	Monthly	Monthly	Monthly
	4	4	4	12	12	12
Output VAT		1.570,47 €	3.240,44 €	1.616,98 €	2.581,11 €	3.480,88 €
Input VAT	2.807,73 €	20.225,63 €	40.265,24 €	20.093,79 €	31.893,27 €	42.690,59 €
Net VAT Due	- 2.807,73 €	- 18.655,16 €	- 37.024,81 €	- 18.476,81 €	- 29.312,17 €	- 39.209,70 €

Figure 27. MYCRO's VAT Payable; Source: Author

3.5. Cash Flows Statement

The Cash Flow Statement is financial statement essential for investors and analysts in understanding how much a company is generating or utilizing. It provides an overview of a company's cash outflows and inflows for a specific frame of time. The Statement is divided in Cash Flow from operating activities, Cash Flow from investing activities and Cash Flow from financing activities. The Operating cash flow it's obtained by the sum of our EBITDA, the Cash Tax Paid and the changes in Working Capital (current assets subtracted by the total current liabilities). Concerning the Cash Flow from investing, MYCRO invests in Equipment (machinery and office hardware) in the first year, for a total of 277.000,00€. In Year 3 the company expect to have enough liquidity to invest in additional machinery to complete and

streamline the production and packaging processes, through an operational leasing, dividing the total costs in the last three years of the project. Lastly, the Cash Flow from Financing is determined by adding the values of Equity, Loan and the yearly Loan Repayment. Figure 28 breaks down all the details of the three Cash Flow segments, providing a complete overview on the startup's cashflows:

Cash Flow Statement	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Cash Flow from Operating Activities						
EBITDA	- 164.893,40 €	- 215.565,24 €	- 195.457,65 €	46.772,57 €	535.365,29 €	1.055.003,63 €
Cash Tax Paid	- €	- €	- €	- €	96.335,81 €	241.637,38 €
Changes in Working Capital	- €	38.645,90 €	41.673,27 €	107.556,87 €	131.466,74 €	127.047,30 €
Net cash provided by operating activities	- 164.893,40 €	- 176.919,34 €	- 153.784,37 €	154.329,44 €	570.496,22 €	940.413,55 €
Cash Flow from Investing						
Equipment	- 246.500,00 €			- 100.000,00 €	- 100.000,00 €	- 100.000,00 €
Development Cost	- 30.500,00 €					
Net cash provided by investing activities	- 277.000,00 €	- €	- €	100.000,00 €	100.000,00 €	100.000,00 €
Cash Flow from Financing						
Equity	200.000,00 €	100.000,00 €	100.000,00 €			
Loan	200.000,00 €					
Loan Repayment	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €
Net cash provided by financing activities	445.585,55 €	145.585,55 €	145.585,55 €	45.585,55 €	45.585,55 €	45.585,55 €
Opening Cash	- €	3.692,15 €	- 27.641,63 €	- 35.840,45 €	64.074,55 €	580.156,32 €
Cash Flow from the year	3.692,15 €	- 31.333,79 €	- 8.198,82 €	99.915,00 €	516.081,77 €	885.999,11 €
Closing Cash	3.692,15 €	- 27.641,63 €	- 35.840,45 €	64.074,55 €	580.156,32 €	1.466.155,43 €

Figure 28. MYCRO's Cashflow Statement; Source: Author

4. Financial Valuation

4.1. CAPM Model

The first step in analysing MYCRO's Capital Asset Pricing Model is to consider the risk-free rate for a start-up based in Portugal, which for 2024 is equivalent to 3.10% (Statista, 2024).

The Damodaran platform is our chosen source of Beta and Total Risk Premium values for MYCRO. As the analysis is carried out on a start-up, it is appropriate to consider a higher risk than for listed companies, which is why the industry's Levered Beta with a value of 0.97 (Healthcare Products) is taken as the non-levered Beta. Then, the estimation on the company's Levered Beta is secured through the Hamada's equation, where the debt/equity ratio and the tax rate are included. The total cost of equity starts at 19,11% and arrives at 12,54%, following the decrease of the debt/equity ratio through the years and guaranteeing good insights on MYCRO's future value and growth. Figure 29 and 30

CAPM Model	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
rf - Risk free Rate	3,1%	3,1%	3,1%	3,1%	3,1%	3,1%
BL - Levered Beta	1,50	1,22	1,11	1,04	1,01	0,99
(rm-rf) - Risk free Premium	9,50%	9,50%	9,50%	9,50%	9,50%	9,50%
RL = rf + BL (rm- rf)	17,34%	14,65%	13,65%	13,00%	12,73%	12,51%

Figure 29. MYCRO's CAPM Model; Source: Author

Debt/Equity Ratio	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Debt (%)	41%	25%	16%	9%	6%	3%
Equity (%)	59%	75%	84%	91%	94%	97%

Figure 30. MYCRO's Debt to Equity ratio; Source: Author

4.2. WACC

The Weighted Average Cost of Capital (WACC) is a financial statistic used to establish the average cost of capital for a business and it represents a crucial indicator to investors in evaluating the cost of potential investment opportunities. WACC accounts for percentages of each form of capital utilized by the company, multiplying them by their proportional weight in the startup's capital structure, then adding all the weighted costs to define the WACC value. The percentages of equity and debt are determined by the loan amount to repay and the total of equity. The cost of debt considered is the TAEG value from the bank loan (9,75%). Figure 31 represents the calculation leading to MYCRO's WACC.

WACC	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
re = CAPM	17,34%	14,65%	13,65%	13,00%	12,73%	12,51%
E = Equity (%)	59%	75%	84%	91%	94%	97%
D = Debt (%)	41%	25%	16%	9%	6%	3%
rd = all - in cost Rate	9,75%	9,75%	9,75%	9,75%	9,75%	9,75%
T = Tax Rate	22,50%	22,50%	22,50%	22,50%	22,50%	22,50%
WACC	13,30%	12,90%	12,69%	12,52%	12,45%	12,38%

Figure 31. MYCRO's Average Cost of Capital (WACC); Source: Author

4.3. FCFF and terminal value

FCFF and Terminal Value are crucial statistics that offer to potential investors a complete analysis of the startup's worth.

The Free Cash Flow to Firm (FCFF) represents the startup's capacity to create operating cash flow to all the stakeholders, after taking into account the capital expenditure and the working capital requirements. Considering a g (perpetual growth rate) value of 3%, that is established to ensure the ability to cover the expected inflation of 2,3% (*Economic Forecast for Portugal*, n.d.), the FCFF value accounts for -171.459,55€ in Year 0 and 712.109,98€ in Year 5.

The Terminal Value instead assesses MYCRO's potential value at the end of a multi-year financial forecast period and it is estimated through the startup's future cashflows discounted to their present value. MYCRO overall terminal value worth is calculated by adding this value to the anticipated cashflows values. As represented in Figure 32, after five years, MYCRO estimated to ensure a final terminal value of 7.585.602,27€.

FCFF and Terminal Value	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
NOPLAT	- 166.413,22 €	- 205.683,90 €	- 190.100,51 €	- 78.838,76 €	299.820,60 €	740.127,81 €
NOPLAT*(1+g)	- 171.405,61 €	- 211.854,41 €	- 195.803,52 €	- 81.203,92 €	308.815,21 €	762.331,65 €
Working Capital n*g	80,42 €	158,97 €	204,87 €	3.635,61 €	20.694,06 €	48.862,62 €
FCFF	- 171.486,04 €	- 211.695,44 €	- 196.008,39 €	- 84.839,53 €	288.121,15 €	713.469,03 €
Terminal Value	-1.664.987,70 €	- 2.137.736,02 €	-2.022.815,39 €	- 890.811,18 €	3.049.890,73 €	7.607.772,16 €

Figure 32. MYCRO's FCFF and terminal value; Source: Author

4.4. Company's Value

MYCRO's value is taken as the estimation of the present value of the future cashflows. Considering the value in time of money and the risk attached to those cash flows, the DCF

model determines the present value of the startup's future cash flows. The Discounted Cash Flows (DCF) methodology is based on the idea that the company is valued exactly as what the predicted future cash flows are worth, on the assumptions of the previously computed Terminal Value and the absence of Non-Operating Assets. MYCRO's Value at the end of the project lifetime is equal to 8.181.983,16€, as is depicted in Figure 33.

Company's Value	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
DCF	- 166.491,30 €	- 199.543,26 €	- 179.375,44 €	- 75.378,83 €	248.535,84 €	597.519,08 €
Terminal Value	-1.664.987,70 €	- 2.137.736,02 €	-2.022.815,39 €	- 890.811,18 €	3.049.890,73 €	7.607.772,16 €
Non Operating Assets	- €	- €	- €	- €	- €	- €
Company's Value	-1.831.479,00 €	- 2.337.279,28 €	-2.202.190,84 €	- 966.190,00 €	3.298.426,57 €	8.205.291,24 €

Figure 33. Company's Value; Source: Author

4.5. Valuation

In order to estimate its market value to investors willing to purchase or sell startup's shares, MYCRO must be then valued by adding the Present Cash Balance and deducting the Present Financial Debt. As shown in Figure 34, the final market valuation of MYCRO equals to 9.693.440,39€.

Valuation	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Comapany's Value	-1.831.479,00 €	- 2.337.279,28 €	-2.202.190,84 €	- 966.190,00 €	3.298.426,57 €	8.205.291,24 €
Present Financial Debt	173.914,45 €	145.285,55 €	113.865,34 €	79.381,65 €	41.535,81 €	- €
Present cash Balance	3.692,15 €	- 27.641,63 €	- 35.840,45 €	64.074,55 €	580.156,32 €	1.466.155,43 €
Valuation End of the Year	-2.001.701,29 €	- 2.510.206,47 €	-2.351.896,63 €	- 981.497,11 €	3.837.047,08 €	9.671.446,67 €

Figure 34. MYCRO's Valuation; Source: Author

4.6. Financial Indicators for Investors

When assessing the feasibility of a project, it is essential to consider NPV, Profitability Index and Accounting Payback Period as indicators to determine the project's viability.

The **Net Present Value** (NPV) measures the potential profitability of a project by computing the difference between the present value of expected cash flows and initial costs. If

NPV is positive, the project is considered profitable; if negative, it could generate losses. In the case of MYCRO, the estimated NPV is 791.316,49€, suggesting a profit forecast. The **Profitability Index** (PI) is another crucial metric expressing the ratio between the present value of cash inflows and cash outflows. A PI above 1 indicates that the project is financially

sustainable. MYCRO's PI is estimated to 2,29, meaning that for every euro invested, 2,29€ will be generated. Lastly, the **Accounting Payback Period** is the measure of the time required to recoup the initial investment through the cash flows generated. For MYCRO, the payback is approximately 2,69 years, suggesting that the company will be able to operate on a healthy margin in the initial five years. Figure 35 depicts the values of these three key financial indicators.

NPV	763.176,82 €
Profitability Index	2,31 €
Payback	2,65

Figure 35. MYCRO's key financial indicators; Source: Author

4.7. Exit Strategy

At the end of the years under analysis in this project, MYCRO's management is planning an exit strategy that envisages embarking on the path of pursuing highly qualified strategic investors, recognizing that the main worth of such partners extends far beyond the mere injection of capital. The purpose of the exit strategy is to attract investors who can offer distinctive skills, consolidated networks, wide international influence and a strategic vision that can enhance the project's scalability. This strategy allows MYCRO to access new market opportunities, boost business operations and establish partnerships with industry leaders.

In summary, the decision to involve these strategic partners is motivated by the ambition to maximize the project's potential by leveraging all the assets and synergies that only investors with such profiles can offer.

CHAPTER VIII: CONCLUSION

The analysis conducted during the development of the business plan, covering both market and financial perspectives, supports the viability and growth potential of the project. The industry investigation highlighted how the rising demand for personalised nutritional solutions, combined with the emerging trend towards preventive healthcare, represents a remarkable opportunity for MYCRO. The business plan emphasises personalisation as the key to address each individual's needs and to distinguish itself within a competitive environment that is currently insufficiently served with tailor-made solutions. The ability to develop a customised offer, backed by scientific and technological data, is MYCRO's true differentiation factor.

The financial forecasts indicate a project supported by solid economic foundations, with profitability projections confirming a sustainable growth over the years. Collaborations with specialised partners and a targeted marketing strategy, contribute to reinforce the start-up's position in the market, increasing both brand visibility and customer loyalty. Once the position in the local market has been consolidated, the business plan further envisages a development path that would lead to expansion beyond national borders.

Ultimately, the project presents itself as an innovative solution that is strategically aligned with contemporary market needs. The capability of addressing nutritional needs with a targeted and personalised approach represents a concrete opportunity to establish the initiative as a leader in a rapidly evolving sector. With a clear purpose and a well delineated strategy, MYCRO has the potential to become a benchmark in the Portuguese personalised nutraceutical panorama.

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Appendix

Excessive intake adverse effects considering dose and duration

Nutrient	Acute	Chronic	Vulnerable population
Iron (45mg)	50-60 mg/day: potential gastrointestinal distress (more pronounced when taken on an empty stomach). 10-20 mg/kg. corrosive haemorrhagic necrosis of gastric and intestinal mucosa; hematemesis, diarrhoea, or constipation followed by effects on cardiovascular and central nervous systems, kidney, liver, pancreas, and red blood cell. Lethal at 180-300 mg/kg: vascular dilation, capillary leakage, and heart failure.	Typically, only in individuals affected with haematological disorders: tissue damage resulting in cardiomyopathy, arthropathies, diabetes mellitus, and neurological disease. Liver fibrosis. Potential promotion of carcinogenesis. Potential gastrointestinal strictures.	Infants and young children: especially at risk of gastric and intestinal mucosal erosion; may increase the prevalence of diarrhoea, sepsis, meningitis, and gut inflammation; lethal at 150 mg/kg. Pregnant women: a potential link between high iron intakes and risk of gestational and type 2 diabetes.
Vitamin A (3mg)	150 mg: transient symptoms such as headaches, nausea, vomiting, diarrhoea, loss of appetite, irritability, vertigo, blurred vision, and muscular incoordination.	1,5-7,5 mg/day: hepatotoxicity, and liver cirrhosis; may increase the risk of hip-bone fracture among postmenopausal women. 30-180 mg/day carotenemia, liver damage, hepatosplenomegaly, reduced bone mineral density, alopecia, headaches and vomiting, insomnia, chronic pain, drowsiness, skin disorders, and damage to the central nervous system including vision.	Infants: 5,5-6,75 mg/day: bulging of fontanels and increased intracranial pressure (benign and transient). Pregnant women: >7,5 mg/day is associated with teratogenic effects and poor reproductive outcomes. Increased sensitivity to adverse effects among those with vitamin d insufficiency.
Vitamin D (0,1mg)	0,25-1 mg/day: hypercalcemia, gastrointestinal symptoms, reduced renal function, heart arrhythmias; neurological symptoms; anorexia, weight loss, polyuria, and polydipsia. Lethal at 21 mg/kg.	Eventually leads to irreversible calcification of soft tissues (kidneys, blood vessels, heart, and lungs) and diffuse demineralization of bones (dose and timing unknown).	Infants: potential growth retardation at 0,045-0,11 mg/day.
Zinc (40mg)	50-450 mg associated mostly with gastrointestinal distress. 2 g or more: nausea, vomiting, epigastric pain, loss of appetite, abdominal cramps, diarrhoea, headaches, dizziness, fever, and lethargy.	25-150 mg/day: impairment of copper status at long-term intakes which could lead to severe neurological diseases; changes in serum lipid pattern (increased cholesterol) doses. 110-300 mg/day for >6 weeks: impaired immune system, microcytic hypochromic anaemia from copper deficiency (could interfere with iron utilization).	No unique information.
Calcium (2500mg)	Constipation, hypercalcemia, and hypercalciuria. Interaction with iron and zinc.	>2000 mg/day: possible increased risk of prostate cancer. 2150 mg/day plus vitamin D supplementation: potential increased risk of kidney stones among postmenopausal women. >3000 mg/day: variable severity of hypercalcemia and renal insufficiency with or without alkalosis, dehydration, nephrocalcinosis, hyperphosphatemia, kidney stone formation, vascular, and soft tissue calcification. Effects on central nervous system, cardiovascular and musculoskeletal system eyes, and skin.	Pregnant women: potential increased risk for kidney stones.

Figure 36. Excessive intake adverse effects considering dose and duration; Source: Author

Evolution of consumers spending and consumers spending in healthcare in Portugal

The next figure examines the evolution of consumer spending per capita and specific consumer spending on health per capita in Portugal, estimated in thousand US dollars.

Analysing the trend up to 2023, a steady increase in overall consumer expenditure is observed, with a slight contraction in 2019 and 2020, stemmed from the impact on the global economy of COVID-19 pandemic. Notwithstanding, the significant post-recession rebound suggests a robust economic recovery and growing consumer spending. An even more stable and uninterrupted progression is showed in the health specific area, reflecting increased awareness of the importance of healthcare and greater investment in personal well-being. Consumer spending is expected to increase from \$15.72 thousand in 2022 to \$22.06 thousand in 2029, while health spending is forecasted to grow from \$0.89 thousand in 2022 to \$1.29 thousand in 2029 (*Per Capita Health Spending by Country 2022 | Statista, 2023*).

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Consumer Spending (per Capita) in thousand USD (US\$)	13.07	13.86	15.14	14.94	14.23	15.67	15.72	17.25	18.09	18.97	19.81	20.53	21.26	22.06
Consumer Spending, Health (per Capita) in thousand USD (US\$)	0.69	0.72	0.79	0.81	0.77	0.88	0.89	0.99	1.05	1.11	1.16	1.21	1.25	1.29

Figure 37. Per Capita spending and per Capita spending in Health sector in Portugal; Source: (*Per Capita Health Spending by Country 2022 | Statista, 2023*)

PESTEL Analysis: Technological factors insights

ePrescription

Portugal launched ePrescription in 2015. Patients receive their prescriptions via email, SNS24 mobile app or SMS. Over 97% of prescriptions by public and private providers are now only issued digitally.

Furthermore, Portugal is also one of the first European countries that digitally enable its citizens to obtain their medication in a pharmacy located in another EU country (Xhofleer, 2024).

eExams

After receiving their doctor's prescription, eExams allows patients to choose a convenient nearby laboratory to make the analysis. They will then get the results on their SNS app as soon as they are available. These results are simultaneously integrated into the citizen's electronic health record and made accessible to the assisting physician. From May 2022 to January 2023, almost 23 million medical results were electronically shared this way (Xhofleer, 2024).

Teletriage

Citizens are offered the possibility to use the nurse phone triage service provided by SNS24 and to be directed to the specific care they need.

Teleconsultations

Teleconsultations between medics and privates are a common practice in primary care and private and public hospitals. They have declined significantly after a steep increase in volume driven by the pandemic, but they have now settled at levels many times higher than prior to COVID-19.

Electronic vaccine bulletin

It keeps records of vaccines already administered and displays the upcoming personal vaccine appointment, according to the national vaccination plan. As a result, citizens can ensure not to miss any scheduled vaccines.

There are many other e-health services offered by SNS24 that make the life of the Portuguese citizens more comfortable, such as primary care appointment scheduling, COVID-

19 vaccine scheduling, or requesting a prescription for chronic medication (*SPMS – Serviços Partilhados Do Ministério Da Saúde*, n.d.).

Detailed SWOT Analysis

Opportunities

- Expanding Market demand: The increasing consumer awareness around the outcomes of health and wellness supplement solutions, coupled with the evolving trend of mass-personalisation, present a significant opportunity for a startup built on these value proposition; particularly in the context of the technological propense, sustainability and international oriented city of Lisbon.
- Government and EU support for Innovation: The availability of funding and support programs, such as the previously analysed *Horizon Europe* and *Start Up Portugal*, offer opportunities for financial support, networking, and partnership, crucial for startups in cutting-edge sectors like personalized health solutions.
- Global Shift Towards Preventive Healthcare: The market's move towards preventive health measures implements new growth opportunities. The innovative business can take advantage from this trend, emphasizing the preventive features of personalized solutions.
- Strategic Partnerships with Healthcare Providers: Collaborations with healthcare specialized companies, clinics and professionals, might enhance product credibility and simultaneously exploit direct channels to consumers.

Threats

- Competition from Healthcare enterprises: The market hasn't been properly explored yet; nevertheless, the entry in the specific market of personalized micronutrient solutions by established healthcare and supplementation companies, could erode the initially acquired market shares and pressure pricing strategies.
- Regulatory Risks: New restrictions and requirements compliances in health and safety regulations could be implemented, both at EU and national levels, affecting products formulation, distribution and marketability
- Threat of imitation: The majority of businesses and especially startups, are posed with this threat. Bigger players from Nutraceutical industry, possess greater resources and the ability of emulate smaller enterprises products with minimal repercussions and low switching costs.

Strengths

- Unique positioning in Nutraceutical industry: The innovative concept of this startup is distinctly positioned at the intersection between pharmaceutical and nutrition industries, leveraging the existing gap in the market and developing personalized micronutrient solutions.
- Matching market trends: Addressing the request generated from the rising market trends of mass-personalisation and preventive healthcare, enables the startup to build a strong advantage in the industry's growth trajectory, creating a strong brand identity that follows the value proposition of the project.
- Technological advancements: A critical role is played from the integration of cutting-edge technologies to ensure the optimization of a market-responsive product development, tailored to customer specifics through collection and elaboration of data. Technology integration also allows the startup to reduce inventory and increase plant efficiency; postponing production and allowing customization, they can simplify their product and service range, resulting in lower marketing and production costs while at the same time creating a more predictable demand.

Weaknesses

- Market entry and Scale-up costs: The significant investments required for Research and Development; regulations compliances and market positioning pose a challenge to the scalability of the startup and might limit the initial capacity to grow.
- Reliance on Specialist Suppliers: Dependence on a limited number of specialized suppliers for specific components could result in supply chain vulnerabilities and cost fluctuations, potentially impacting product availability and therefore sales and profitability.
- Competitive pressure from bigger enterprises: While the personalized micronutrient market is nascent, the broader nutraceutical industry is highly competitive. The market influence of bigger firms would challenge the startup to maintain the market position initially obtained without diluting the unique value proposition.

MYCRO's Direct Competitors Overview

CUURE

CUURE is a customized food supplementation program which lies its origins in Paris. The main ingredients contained in the products are Vitamins, minerals, plants, coenzymes and Omega 3; of which 87% are sourced in France and 95% in Europe (France and Belgium) (Recanatini, 2022). The customization mechanism involves a questionnaire of about 50 questions that allows Cuure's Nutrition and Health Experts to select the specific supplements. Customers then receive a box containing 30 packets to be taken daily, with a glass of water, for the duration of one monthly treatment. The single-sachet solution containing all the supplements to be consumed is practical and convenient, especially for those who travel frequently or have busy schedules. After two months of treatment, the program includes initial feedback, which is necessary to find out whether adjustments need to be made to the program according to new needs or the change of season. Cuure works mainly in France, and thanks to the growth trend in health supplementation experienced by Italy, it sees the Italian peninsula as its second main market.

ROOTINE

The purpose of the American brand is the closest to this project's solution, aim to work around the biggest problem of standardized pharmacy multivitamins: Absorbing the right quantities the body needs. After an initial lifestyle quiz on the company's website, Rootine sends a DNA test to costumers or use the results from their blood tests, analyses the samples, creates a customized report with nutrient dosing recommendations and ship a 90-day supply of personalized vitamins packages to the customer's house.

The Nashville-based company developed a microbeads solution which enables customers to absorption the nutrients with food and help maintain optimal blood nutrient levels throughout the day with slow-release technology. The issue of this alternative is found in the unpracticality of swallowing the high number of microbeads and the detainment due to the DNA test. The expensive development of the nutrients in the microbeads form, forces the solution to result in an expensive solution.

BAZE

Baze Vitamins is a German company that is currently trying to establish its brand in the United States market. Its purpose is to deliver personalised vitamins solution for its

customers, without the need of leaving the house, not even for specific exams. The Baze program, in fact features as its first step, the delivery of an innovative at-home blood test, that gives the Team experts the information required to ship a monthly box, sorted into daily packs and combine health goals with the body's need.

The company's mission is to manage the entire process, from the blood analysis to the daily assessments of the customer's status through its algorithm and mobile app. The more evident obstacle lies in the purchase of the home blood test, which, in addition to its considerable cost, can be a hindrance to customers' trust in carrying out specific blood tests at specialized institutions.

Detailed description of the Business Model Canvas elements

Key Partners

MYCRO's key partners include specialized laboratories to process and analyze biological samples, nutritionists to develop customized micronutrient solutions, logistics companies to ensure efficient distribution, and technology providers to support the digital infrastructure of the business. These relationships are critical to the creation of a reliable and scientifically validated product, while also guaranteeing that it can be delivered with the right timing and accuracy to consumers.

Key Activities

MYCRO's Key Activities focus on research and development to constantly refine the personalisation algorithm, data collection and analysis to provide accurate recommendations and client support to ensure an exceptional customer experience. Marketing also plays a crucial role in increasing brand awareness and promoting the company's value proposition in the market.

Key Resources

Key Resources include the software supporting the customization service, an experienced team of nutritionists and data scientists to develop and implement the personalised solutions, a robust client database to guide production and recommendations, and the production facilities to create the supplements themselves. Financial resources are crucial, enabling investments in all these assets and required skilled personnel.

Customer Relationship

MYCRO retains a relationship with customers by providing personalised consultations, leveraging technology for automated follow-ups and promoting engagement, to build a supportive network among users. The intention is to create mutual trust and perpetual value through excellent customer service and accessible educational resources.

Channels

MICRO'S distribution channels include an intuitive online platform to facilitate the access to micronutrient personalisation and ordering, as well as strategic partnerships with health professionals who can recommend customers. Social networks also offer a viable platform to increase engagement and retention of current and potential customers.

Customer Segments

MYCRO strives to implement a solution tailored to the needs of every individual, but primarily targets specific customer segments: health-conscious individuals seeking health improvements, patients with specific nutritional needs that require specific treatments and athletes or fitness enthusiasts who wish to enhance performances through targeted nutritional support.

Cost Structure

MYCRO's Cost Structure is dominated by investments in Research and Development to support the personalisation platform and algorithm, by operating expenses associated with the purchase of raw materials and production, and by all the costs related to sales, marketing and employees' salaries.

Revenue Stream

The major Revenue Streams for MYCRO originate from subscription fees, which provide an ongoing tailored supply of supplements, from additional assessments that further enhance individual nutritional programs, and from affiliate marketing that generates additional revenue through referrals to complementary products or services. MYCRO's Revenue Streams are crucial to support the company's expansion and to finance continuous innovation. The subscription plans encourage customer loyalty by providing a steady income, while dedicated evaluations and supplementary services represent an important source of additional revenue. Affiliate marketing enables MYCRO to benefit from partnerships, enriching the overall range without deviating from the core proposition of providing customized micronutrient solutions.

Product launch Schedule: Step Analysis

Market Opportunity Analysis: Month 1-2

- Comprehensive understanding of Micronutrients.
- Environment analysis.
- Business opportunities.

Product Conceptualization: Month 3

- Business concept and Value Proposition.
- Product features, benefits and design.

Market Response Testing: Month 3-4

- Evaluate concept with survey and professional interviews (methodology)
- Gather feedback and eventually adjust product concept.

Developers Recruitment: Month 3-4

- Search for product developers.
- Start the vetting process, interviews and assessments.

Product Development: Month 4-7

- Development of the micronutrient solution and personalisation processes.
- Implement development methodologies for iterative processes.

Product Testing: Month 8-9

- Conduct testing on target groups.
- Adjust product and processes on feedback and technical evaluations.

Branding and Pre-Launch Marketing Strategy: Month 10-12

- Develop Brand Identity and Image
- Develop awareness on the Personalized Micronutrient issue.
- Craft a pre-launch marketing strategy to build anticipation and buzz.

Partnership and Distribution Networking: Month 10-12

- Identify and secure partnerships with relevant stakeholders,
- Establish distribution channels and logistics.

Product Launch Preparation: Month 11-12

- Finalize marketing materials and launch campaigns.
- Train sales and customer service teams.
- Ensure distribution channels are primed for launch.

Product Launch: Month 13

- Execute launch plan across all channels.
- Monitor real-time feedback and adjust strategies as needed.

Post-Launch Evaluation: Month 14

- Conduct post-launch review to evaluate market reception.
- Measure performance against objectives.
- Plan for post-launch marketing efforts and product development based on consumer feedback and sales performances.

Continual Monitoring and Adaptation:

Post-launch months are critical for continual monitoring of the product's performances and for adapting the strategy as needed from the market response.

Survey's results

Generalities

This section was crucial when identifying the segments most concerned with our proposal. The results revealed a strong interest from a young population, with 64.2% of respondents aged between 18 and 30, and a significant 33% within the 31-50 age range. This reflects the fact that the brand's core target group is primarily young adults, although not neglecting the potential that exists in other age groups.

A geographic breakdown of the responses revealed that 49.1% of the participants were from Portugal, while 42.2% came from Italy, suggesting the existence of a strong interest in personalised nutrition in respondents coming from the two countries. Portugal appears to be the target market for the business, while Italy represents a further opportunity for market expansion.

Familiarity with micronutrients

The purpose of this section was to evaluate the estimated knowledge of micronutrients among potential consumers, investigate their health and nutrition priorities and goals, and finally determine the most convenient intake solution and preferred distribution channels.

From the collected answers we can assume among the interviewed sample the intake of supplements (not only micronutrients) is a relatively frequent practice, considering that only 12.4% were found not to use this type of substances, and that 48.1% rely on supplements at least once a day. Furthermore, we can assume that the respondents consider the intake of vitamins and minerals to be fundamental in a person's diet: 77.6% of the sample rated between 4-5/5 on a scale of importance to the intake of vitamins and minerals.

Only 37.6% of the sample stated that they rely on specialists (pharmacists, nutritionists, nutrition experts) as a source of expertise for their supplementation. Despite the fact that 73.9% of the respondents to the questionnaire claimed to know what micronutrients are, and 58.3% considered themselves to be aware of the side effects caused by inadequate micronutrient intake, only 2 out of the 17 diseases and deficiencies listed in the questionnaire were linked to inadequate micronutrient assumption by at least 50% of the respondents (sleeping problems 52% and energy deficiency 57.5%); additionally, only 34.9% of the respondents were aware of the fact that some specific micronutrients cannot be absorbed through a normal diet. These results lead to the assumption that the analysed sample is not properly informed about the problems that may result from inadequate micronutrient intake.

We can consider general healthcare as the most relevant among the goals of the supplementation plans carried by the sample examined, since 62.8% of it considered it to be one of the main objectives. Energy-yielding and sports performance results as the second most identified purpose of supplements integration.

In terms of practicality of the supplementation solutions, we cannot identify a clearly preferred option for consumers between pills and powder in the sample under investigation; 40.4% found no difference in comfort between taking the two solutions; furthermore, powder and pills were relatively equivalent in terms of convenience for potential customers, accounting respectively for 31.2% and 28% of the preferences expressed.

Supplements stores (on-line and off-line) and supermarkets can be assumed as the main distribution channels favoured by the respondents; and will therefore turn out to be the main targets to be pursued for selling of the brand's product and for possible partnerships.

Relevance of personalisation

This last section of the survey aimed to explore consumer satisfaction with the options currently available on the market, their inclination to share personal data in exchange for tailor-made nutritional solutions, price sensitivity and to assess the business concept in terms of innovation and market potential.

The competitiveness of the supplement industry will be addressed in detail during the market research chapter of this business plan. Nevertheless, the results extracted from the survey can be interpreted as a first sign of the opportunities lying within this market space. In a scale from 1 to 5 only 9,2% resulted completely satisfied from the current market offer (5); meanwhile, the average answer extracted from the sample equals to 3,06 out of 5, expressing a medium general satisfaction of the customers' specific needs from the current market options.

Crucial topics for a positive development of this business plan are found in the openness of the potential customers with sharing personal information with the purpose of tailoring solutions to their needs, and the willingness of paying a premium price for a personalized supplement solution. 84,4% of the sample would share personal information (blood test, DNA test) with specialists in order to create a tailored product, resulting in a positive outcome for the business plan research. Another positive interpretation is founded on the percentage of potential customers that would pay a premium price for a personalized solution:

44% would pay a higher price, with the condition of not being significantly higher; and 39,4% of the sample would pay a premium without any particular condition.

The last two questions of the survey aimed to provide more insights about the perception of the new brand concept from the sample, in terms of innovation and marketability: 84,9% of the respondents stated they don't know any other brand currently selling personalized micronutrients solution. Moreover, 74,7% considered the new business concept as particularly innovative and differentiated in the current market scenario, rating the idea with a 4 or 5 out of 5. Only 2,3% considered the business concept not innovative or suitable to the market.

Questions and results elaborated in the methodology chapter and provided from the survey can be found on the Annexes section of this business project.

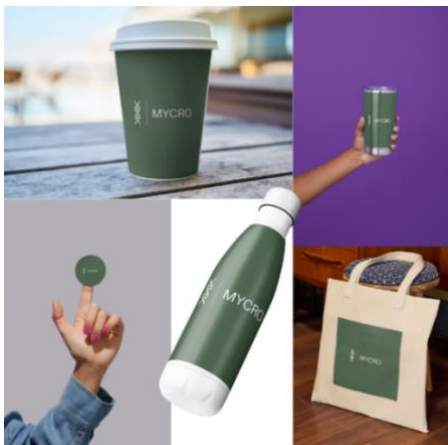
Prior Velho Warehouse Location



Pop-up store concept



MYCRO Branded Gadgets



Automotive Machine

MS series from Marchesini group

Intermittent motion vertical sachet filling/sealing machine suitable for medium and high production rate lines, built according to cGMP regulations:

- New dosing unit
- All product contact parts are in stainless steel or in FDA approved material
- Sealing in flat with mechanical movement
- Sealing pressure adjusted by an expansion membrane operating on one of the jaws
- Film drive system with cold rollers
- Cutting and/or perforation on extractable frame to facilitate cleaning
- Stacking and counting unit with cartoner connection
- Mechanical transfer sachet stacking
- Count number can be set on display
- Sachet weight statistical check



Figure 38. Marchesini Group MS Series; Source: <https://www.marchesini.com/en/machines-lines/ms-series>

Warehouse U-Shape

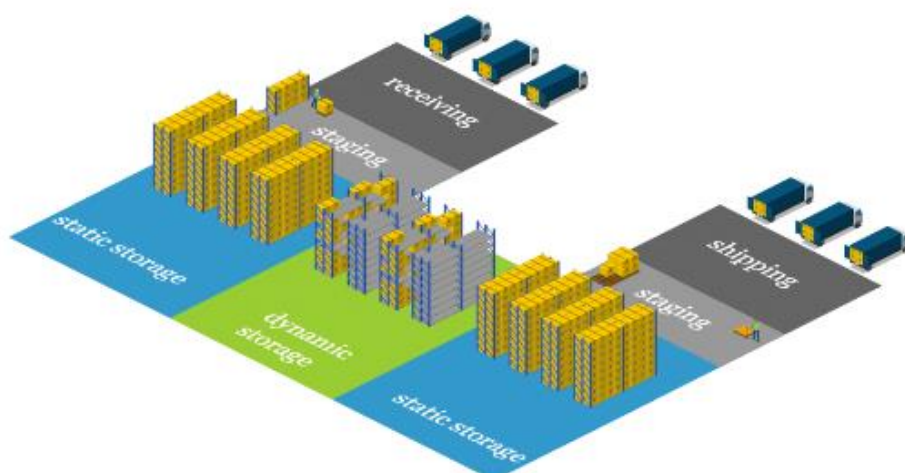


Figure 39. Warehouse U-Shape; Source: <https://www.cadrettech.com/blog/warehouse-layout-and-design-tips-for-an-efficient-and-optimize-operation/>

Revenues from Product and Service breakdown

Year 1 - 2025	Service sold MONTHLY	Service sold YEARLY	Price	Revenue
BASE Service	850	10.200	25,00 €	255.000,00 €
PLUS Servie	250	3.000	35,00 €	105.000,00 €
Additional Services	50	600	20,00 €	12.000,00 €
Alimentation Plan	-	-	-	-
				372.000,00 €
Year 2 - 2026	Service sold MONTHLY	Service sold YEARLY	Price	Revenue
BASE Service	1.700	20.400	25,00 €	510.000,00 €
PLUS Servie	500	6.000	35,00 €	210.000,00 €
Additional Services	100	1.200	20,00 €	24.000,00 €
Alimentation Plan	-	-	-	-
	2.300			744.000,00 €
Year 3 - 2027	Service sold MONTHLY	Service sold YEARLY	Price	Revenue
BASE Service	3.300	39.600	25,00 €	990.000,00 €
PLUS Servie	1.000	12.000	35,00 €	420.000,00 €
Additional Services	200	2.400	20,00 €	48.000,00 €
Alimentation Plan	50	600	30,00 €	18.000,00 €
				1.476.000,00 €
Year 4 - 2028	Service sold MONTHLY	Service sold YEARLY	Price	Revenue
BASE Service	5.750	69.000	25,00 €	1.725.000,00 €
PLUS Servie	1.750	21.000	35,00 €	735.000,00 €
Additional Services	350	4.200	20,00 €	84.000,00 €
Alimentation Plan	100	1.200	30,00 €	36.000,00 €
				2.580.000,00 €
Year 5 - 2029	Service sold MONTHLY	Service sold YEARLY	Price	Revenue
BASE Service	8.000	96.000	25,00 €	2.400.000,00 €
PLUS Servie	2.500	30.000	35,00 €	1.050.000,00 €
Additional Services	500	6.000	20,00 €	120.000,00 €
Alimentation Plan	250	3.000	30,00 €	90.000,00 €
				3.660.000,00 €

Revenues from CPM and CPC

Revenue from CPM	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Daily impressions	115	276	690	1.449	2.300
Yearly Impressions	41.975	100.740	251.850	528.885	839.500
Total	335,80 €	805,92 €	2.014,80 €	4.231,08 €	6.716,00 €
% customers impression	10%	12%	15%	18%	20%
SOM (people)	1.150	2.300	4.600	8.050	11.500
Projected SOM %	0,05%	0,10%	0,20%	0,35%	0,50%
CPM Value	9,39 €				
CPC Value	0,07 €				

Revenue from CPC	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Daily interaction	12	46	138	362	690
Yearly Interaction	4.198	16.790	50.370	132.221	251.850
Total	293,83 €	1.175,30 €	3.525,90 €	9.255,49 €	17.629,50 €
% cutomers interaction	1%	2%	3%	4,5%	6%

MYCRO's Depreciation table

Depreciation Table	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Laptop	1.333,33 €	1.333,33 €	1.333,33 €	- €	- €	- €
Printer	400,00 €	400,00 €	400,00 €	400,00 €	400,00 €	- €
Other Electronics	100,00 €	100,00 €	100,00 €	100,00 €	100,00 €	- €
Automotive Machinery	48.000,00 €	48.000,00 €	48.000,00 €	48.000,00 €	48.000,00 €	- €
Automotive Machine (Y3)	- €	- €	- €	100.000,00 €	100.000,00 €	100.000,00 €
	49.833,33 €	49.833,33 €	49.833,33 €	148.500,00 €	148.500,00 €	100.000,00 €
Website Development	6.100,00 €	6.100,00 €	6.100,00 €	6.100,00 €	6.100,00 €	- €
Total	55.933,33 €	55.933,33 €	55.933,33 €	154.600,00 €	154.600,00 €	100.000,00 €

Website development Costs

Website development		
Features	Price	Depreciation
Platform	2.000,00 €	
Security	2.500,00 €	
UI/UX Design	9.000,00 €	
Backend development	12.000,00 €	
AI Integrations	3.000,00 €	
Testing	2.000,00 €	
Total	30.500,00 €	20%

Job Positions and Salaries Expenditure

Job Position	Base Salary	Annual Salary	Insurance	Social Security	FGCT	Food Allowance	Total Annual Salary
CEO	2.500,00 €	35.000,00 €	25,00 €	8.312,50 €	26,25 €	1.996,80 €	47.860,55 €
Head of Finance	2.000,00 €	28.000,00 €	20,00 €	6.650,00 €	21,00 €	1.996,80 €	38.687,80 €
Head of Marketing	2.000,00 €	28.000,00 €	20,00 €	6.650,00 €	21,00 €	1.996,80 €	38.687,80 €
Machine Control	1.500,00 €	21.000,00 €	15,00 €	4.987,50 €	15,75 €	1.996,80 €	29.515,05 €
Warehouse	1.000,00 €	14.000,00 €	10,00 €	3.325,00 €	10,50 €	1.996,80 €	20.342,30 €
Warehouse	1.000,00 €	14.000,00 €	10,00 €	3.325,00 €	10,50 €	1.996,80 €	20.342,30 €
Warehouse	1.000,00 €	14.000,00 €	10,00 €	3.325,00 €	10,50 €	1.996,80 €	20.342,30 €
Nutritionist	1.500,00 €	21.000,00 €	15,00 €	4.987,50 €	15,75 €	1.996,80 €	29.515,05 €
Nutritionist	1.500,00 €	21.000,00 €	15,00 €	4.987,50 €	15,75 €	1.996,80 €	29.515,05 €
Nutritionist	1.500,00 €	21.000,00 €	15,00 €	4.987,50 €	15,75 €	1.996,80 €	29.515,05 €
Nutritionist	1.500,00 €	21.000,00 €	15,00 €	4.987,50 €	15,75 €	1.996,80 €	29.515,05 €
Marketing Analyst	1.000,00 €	14.000,00 €	10,00 €	3.325,00 €	10,50 €	1.996,80 €	20.342,30 €
CRM	1.000,00 €	14.000,00 €	10,00 €	3.325,00 €	10,50 €	1.996,80 €	20.342,30 €

Salaries Expenditure	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
CEO	47.860,55 €	48.817,76 €	49.794,12 €	50.790,00 €	51.805,80 €	52.841,91 €
Head of Finance	-	38.687,80 €	39.461,56 €	40.250,79 €	41.055,80 €	41.876,92 €
Head of Marketing	38.687,80 €	39.461,56 €	40.250,79 €	41.055,80 €	41.876,92 €	42.714,46 €
Machine Control	-	29.515,05 €	30.105,35 €	30.707,46 €	31.321,61 €	31.948,04 €
Warehouse	-	20.342,30 €	20.749,15 €	21.164,13 €	21.587,41 €	22.019,16 €
Warehouse	-	-	-	20.342,30 €	20.749,15 €	21.164,13 €
Warehouse	-	-	-	20.342,30 €	20.749,15 €	21.164,13 €
Nutritionist	29.515,05 €	30.105,35 €	30.707,46 €	31.321,61 €	31.948,04 €	32.587,00 €
Nutritionist	-	29.515,05 €	30.105,35 €	30.707,46 €	31.321,61 €	31.948,04 €
Nutritionist	-	-	-	29.515,05 €	30.105,35 €	30.707,46 €
Nutritionist	-	-	-	29.515,05 €	30.105,35 €	30.707,46 €
Marketing Analyst	-	-	-	20.342,30 €	20.749,15 €	21.164,13 €
CRM	-	-	-	20.342,30 €	20.749,15 €	21.164,13 €
Total	116.063,40 €	236.444,87 €	241.173,77 €	386.396,54 €	394.124,47 €	402.006,96 €

Marketing Costs breakdown

Marketing Costs	Year 0 2024	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029
Events	20.000,00 €	20.000,00 €	20.000,00 €	40.000,00 €	40.000,00 €	40.000,00 €
Instagram Advertising	5.000,00 €	6.000,00 €	7.000,00 €	8.000,00 €	9.000,00 €	10.000,00 €
Tiktok Advertising	5.000,00 €	6.000,00 €	7.000,00 €	8.000,00 €	9.000,00 €	10.000,00 €
Pop-up stores		5.000,00 €	5.000,00 €	- €	- €	- €
Branded Gadgets	2.000,00 €	2.000,00 €	2.000,00 €	4.000,00 €	4.000,00 €	4.000,00 €
Direct Sponsorship	- €	- €	100.000,00 €	100.000,00 €	100.000,00 €	100.000,00 €
Product Supply Sponsorship	- €	- €	8.616,00 €	7.147,20 €	10.720,80 €	10.720,80 €
Total	32.000,00 €	39.000,00 €	149.616,00 €	167.147,20 €	172.720,80 €	174.720,80 €