"ORIGINS" Business Plan – From Value proposition to Value Creation

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Abstract

Title: “ORIGINS” Business Plan – From Value proposition to Value Creation.

The world's population is growing rapidly over the years (7.7 billion in 2019), and that increase brings a number of challenges, such as the need for more food. Advances in technology and the chemical sciences have helped this by controlling food production to increase its availability. However, there is growing link between new methods of production (e.g. use of pesticides) and deterioration of health. Consumers want to know where their food comes from, and how it was produced but it seems the gap between them and food manufacturers is extensively vast, and for that reason “ORIGINS” is a mobile application that aspire to enhance food transparency.
Thus, this master’s thesis, developed under the seminar New Business Opportunities, aims at structuring a convincing business plan for “ORIGINS” idea, responding at the end of its viability or not. Analysis of industry and competition was conducted to understand what the food market is currently doing, and it was concluded that there is a niche market that has not yet been addressed. Then a survey of 200 people was analyzed to find out what consumers think about the availability of food information. It was possible to visualize that food labels are good, but buyers are not satisfied with the amount of information provided in supermarkets. And finally, after evaluating the financial forecast in 5 years, the company reaches its balance point at the end of the 4th year, a very positive result for a company in the mobile application industry.

Keywords: Business Model, Value Proposition, Food Transparency, Consumer Behavior, Market Analysis, Financial Analysis, Mobile App.

Resumo

Título: Plano de Negócios, "ORIGINS" – Da proposta de valor há criação de valor.

A população mundial tem crescido rapidamente ao longo dos anos (7,7 bilhões em 2019), e este aumento traz uma série de desafios como a necessidade de produzir mais alimentos. Os avanços tecnológicos e das ciências químicas estão a ajudar este processo através do controlo da produção para aumentar sua disponibilidade. No entanto, existe uma relação entre o uso de novos métodos de produção (por exemplo, uso de pesticidas) com a deterioração da saúde. Os consumidores querem saber de onde vem os alimentos e como é produzida, mas existe uma grande lacuna entre estes e os produtores de alimentos. Por esta razão, "ORIGINS" é uma aplicação móvel que pretende aumentar o nível de transparência de informação alimentar.
Assim, esta dissertação de mestrado, desenvolvida no âmbito do seminário "New Business Opportunities", visa a estruturar um plano de negócios, "ORIGINS", para compreender a sua viabilidade. Como tal, uma análise da indústria e da concorrência foi realizada para entender o mercado alimentar, sendo que há um nicho de mercado que ainda não foi bem abordado. De seguida, um inquérito a 200 pessoas foi analisado para descobrir o que os consumidores pensam sobre a disponibilidade de informação. Foi possível provar que os rótulos dos alimentos ajudam, mas não satisfaz as necessidades dos consumidores. E finalmente, depois de avaliar a previsão financeira em 5 anos, é possível verificar que a empresa atingirá o seu ponto de equilíbrio no final do 4º ano, um resultado muito positivo para uma empresa do setor de aplicativos móveis.

Palavras-chave: Modelo de Negócio, Proposta de Valor, Transparência Alimentar, Comportamento do Consumidor, Análise de Mercado, Análise Financeira, Aplicativo Móvel.

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Ricardo Silva Pereira

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1. Introduction

Food is a basic necessity for everyone's lives. It gives us the energy and the nutrients to grow and develop, to be healthy, to move, think and learn. But are people aware of the food they eat? Although this concept has received a lot of attention and attempts have been made to educate consumers on food safety practices, there is still a gap between food knowledge and self-reported practices (Raab & Woodburn, 2007).

As a solution, "ORIGINS", a Portuguese-based company, was created to provide customers with information about the production of food presented in the supermarket through the use of a Mobile App. By scanning the products, users can get information about the chemicals and the practices used in the production from the first day until they reach the supermarket shelves. The goal is not to reduce the consumption of certain products or unravel the secrets behind the food industry, but to make consumers aware of what they are buying when choosing a particular product. This information about eating habits and its impact can already be easily accessible. However, there is still a lack of awareness of most buyers because there is no reliable and simple source. The Portuguese market is starting to show greater concern about this issue, and it is time to create a synergy for better consumption and behavior. Health issues and agriculture, ecology and food culture have been a central theme in the minds of the consumer (Holm & Kildevang, 1996), and "ORIGINS" wants to be part of it.

In this manner and developed within the scope of the New Business Opportunities Seminar, this thesis will present in more detail the business idea, "ORIGINS", which seeks to solve the information gap between consumers, retailers and suppliers. The goal is to define a business plan and a strategy to create a great value added compared to what the market currently offers. Thus, the first section of this dissertation will cover what academics have identified as drivers of value creation in a business plan and the importance of the underlying value proposition. The next chapter, the methodology, presents how the market data was collected. The third chapter, which is the main body of this thesis, will include the analysis of the data collected and the respective market hypothesis carried out to understand what the market needs and its most important characteristics. Conclusively, the latter part will cover the development of the business plan components, and final conclusions.

1.1 Problem Statement & Research Questions

Problem statement: The purpose with this dissertation is to structure a compelling business plan by identifying and analyzing how “ORIGINS” should connect supermarkets, consumers and food suppliers in a convincing way in order to provide the most reliable data on food production, quality, nutritional values and food safety on a mobile platform.

- What is the market analysis, i.e., who are the competitors and what competition is doing to provide more information about food matters?
- Who is willing to use the mobile application "ORIGINS" and what elements should be presented?
- What communication channels should be implemented at this early stage?
- Is it possible to guarantee profitability in the long term, given the size of the market?

1.2 Academic and Managerial Relevance

The concept of creating a business model and its importance to determine the product or service to pursue in order to grow the business and set a strategy is not new. For a long time, questions have been raised on which part should business ventures focus to create superior value to the end user, requiring an extensive market research to understand customers’ needs and ways to connect them with the product or service. These concerns were unleashed by several scholars once there is no single definition to define a business model (Shafer, Smith, & Linder, 2005). Hence, in this dissertation, managerial concepts will be analyzed to identify them, focusing more on the importance of the value proposition in a business development, such as “ORIGINS”.

2. Literature Review

Within this chapter it is analyzed which are the drivers of value creation considering the value proposition of a commercial enterprise. Although this concept is difficult to understand, some economic theories have been used by researches to define the key aspects that companies must take into account when scaling their business. Thus, this section begins with the definition of the concept of business model, secondly, the drivers of value creation will be numbered and last will be given the link with the value proposition.

2.1 The Business Model Concept

According to Johnson, Christensen & Kagermann (2008) a business model (BM) "consists of four interlocking elements, that taken together, create and deliver value". These include the value proposition, or the job to be done, profit formula (the margins and financial elements to achieve attractive return), key resources (such as people, cash, and technology), and key processes (to turn inputs into final products and services).

The applicability of BM is broad since it is used in many fields of research, from traditional strategy theory to the emergent body of the literature on companies whose transactions take place over the Internet (e-business). However, the BM concept is often used independently from theory, meaning that the components of the model and its inter-related links present incongruencies and idiosyncratic definitions that fit the interest of researchers (Amit & Zott, 2001), resulting in various interpretations and definitions. Nevertheless, this tool is still useful to explain the "reflection of the firm's realized strategy" (Casadesus-Masanell & Ricart, 2010), and common ground was found among scholars on the following topics:

- The business model is a popular tool as a new unit of analysis;
- It emphasizes a system-level to explain how firms do business;
- Describes the various conceptualizations of the activities carried out by the company;
- Explains how value is created, not just captured.

Some literature compares the concept of BM with strategic decisions, which vary over time due to several factors - such as the company's industry. However, BM is not a strategy, but a "tool to test and modify cause and effect relations for decisions made within the strategic

context" throughout time (Shafer et al., 2005). Figure 1 summarizes some of the most used definitions recommended for the business model and which articles adopted these definitions.

Selected Business Model Definitions

Author(s), Year	Definition	Papers Citing the Definition
Timmers, 1998	The business model is "an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues" (p. 2).	Hedman & Kalling, 2003
Amit & Zott, 2001; Zott & Amit, 2010	The business model depicts "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (2001: 511). Based on the fact that transactions connect activities, the authors further evolved this definition to conceptualize a firm's business model as "a system of interdependent activities that transcends the focal firm and spans its boundaries" (2010: 216).	Hedman & Kalling, 2003; Morris, Schindehutte, & Allen, 2005; Zott & Amit, 2007, 2008; Santos, Spector, & Van Der Heyden, 2009; Bock, Opsahl, & George, 2010
Chesbrough & Rosenbloom, 2002	The business model is "the heuristic logic that connects technical potential with the realization of economic value" (p. 529).	Chesbrough, Ahern, Finn, & Guerraz, 2006; Chesbrough, 2007a, 2007b; Teece, 2007, 2010
Magretta, 2002	Business models are "stories that explain how enterprises work. A good business model answers Peter Drucker's age old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?" (p. 4).	Seddon, Lewis, Freeman, & Shanks, 2004; Ojala & Tyrväinene, 2006; Demil & Lecocq, 2010
Morris et al., 2005	A business model is a "concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets" (p. 727). It has six fundamental components: Value proposition, customer, internal processes/competencies, external positioning, economic model, and personal/investor factors.	Calia, Guerrini, & Moura, 2007
Johnson, Christensen, & Kagermann, 2008	Business models "consist of four interlocking elements, that, taken together, create and deliver value" (p. 52). These are customer value proposition, profit formula, key resources, and key processes.	Johnson & Suskewicz, 2009
Casadesus-Masanell & Ricart, 2010	"A business model is . . . a *reflection* of the firm's *realized* strategy" (p. 195).	Hurt, 2008; Baden-Fuller & Morgan, 2010
Teece, 2010	"A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value" (p. 179).	Gambardella & McGahan, 2010

Figure 1: Business Model Definitions *Source: Journal of Management*

2.2 Value Creation

The idea that "value" is a term related only to the total value created by the company's transactions is not correct; rather, it is related to the inherited value of the customers or to any other participant in the transaction that appropriates it. Based on this assumption, the literature found defines three generic frameworks: the individual, the organizational and the network.

The individual level is linked to the initial condition of "who composes the organization", as managers and employees as central sources of value creation (Felin & Hesterly, 2007), the organizational view states that value is created when companies develop their core competitive advantages and introduce new products and services in the market (Lepak, Smith, & Taylor, 2007), and the network framework is related to the company's ability to create a synergy, by connecting customers, competitors, suppliers and any other actor in the value chain (Moliterno & Mahony, 2011). This suggests that firms do not conduct their business activities in a competitive vacuum, out of the market, they are always competing through their business models (Casadesus-Masanell & Ricart, 2010). Consequently, innovative and effective models must be developed to create superior value (Morris, Schindehutte, & Allen, 2005), and this is reached through the effective allocation of all resources at these three levels (Afuah & Tucci, 2003).

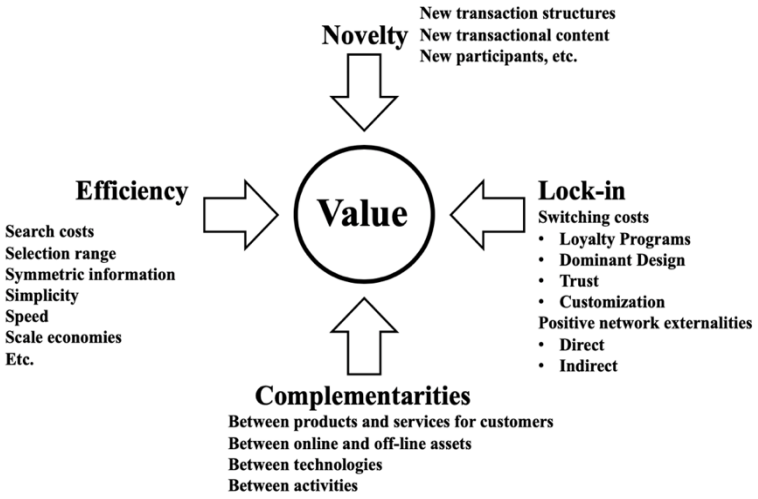

Figure 2: Sources of value creation in e-business
Source: Strategic Management Journal

Narrowing the scope of this research and considering the recent advances in technology such as the emergence of the internet and artificial intelligence, all industries have been changing rapidly, forcing companies to generate new ways of creating and delivering value, opening horizons for the design of new types of business models. This is proven by a study conducted by Zott and Amit (2007) on how 59 recent US and European listed e-business firms create value and how the design of their BM impacts their performance. Then, they tested their theories on how value is created by analyzing 190 business models of entrepreneurial

companies, and the results suggested that, the design of business models and the performance of companies can be analyzed considering the total value created from the design of the business model and the ability of the company to take advantage of this value. In the end, comparing the results with some early theoretical views, like the value chain framework, Schumpeter's theory, the Resource based-view, Strategic network theory and transaction cost economics, it was concluded that the potential value created by e-businesses depends on four factors that will be analyzed: Efficiency, Complementarities, Lock-in and Novelty.

2.2.1 Efficiency

The term "efficiency" refers to the ability of companies to perform work with the minimum amount of resources. Whenever a product or service is transferred from one stage to another, a set of new technologies and know-how are required to produce the final product or service, thus generating what is called as transaction cost (Williamson, 1979).

The capacity of a firm to improve its efficiency correlates with the ability to weigh the cost of exchanging resources with the market versus the bureaucratic costs incurred in carrying out the activity on its own, being consistent with the transaction cost theory. Therefore, the greater the efficiency of a company's transactions, the greater its growth and the value of reducing costs. E-business companies have several sources to generate greater efficiency. First, by improving the symmetries of information between buyers and sellers through "supply of up to date information" (Amit & Zott, 2009). When clients have easy access to information, there is little effort in search and bargaining costs (Lucking-reiley & Spulber, 2001) and opportunistic behavior (Williamson, 1975). Uniplaces is a case study, a star-up which offers potential students from around the world an online accommodation platform with information about the apartment or room they are looking for, ready to be booked with ease and security. The customer can then make informed decisions and it's a case of efficiency because there is a simplified and quick way to find what they need, avoiding the bargaining costs between the landlord and the customer.

2.2.2 Complementarities

The second driver of value creation, complementarities, refers to the value generated from the interdependencies between the activities of the business model. In other words, when customers have access to products and services that are complementary to one primary product of interest, value can be generated by, for example, by reducing research costs and improving decision making, being this in line with the resource-based theory (RBV) which states that combining unique resources and capabilities may lead to value creation (Amit & Schoemaker, 1993). As BrandenBurger and Nalebuff (1997) put, "a player is your complementor if customers value your product more when they have the other player's product than when they have your product alone", as a strategic network. This is an opportunity for upcoming products and services to companies that find gaps in the market. An example of this complementarity is ZARA, which provides customers with an online store and an after-sales service with their physical stores. Whenever a customer buys an item, there is the possibility of returning or exchanging it quickly in the physical store, not incurring extra costs and time if they are not satisfied. This complementary enhances consumers' willingness to order online. Therefore, companies can create superior value by analyzing complementarities between activities – such as supply chain integration – and complementarities created with the use of technology – such as linking the technology image of one business with the internet communication technology of another.

2.2.3 Lock-in

The term Lock-in means the ability companies have to prevent the migration of customers to competitors' offers. This value creation depends on the ability to increase customer motivation to engage in repeated transactions and the strategic alliances to maintain and improve their interrelationships. Lock-in increases customer willingness to pay and reduces the power competitors have over a company's offer.

Still on Zott and Amit's findings on value creation in e-business, it is concluded that there are a number of ways to increase customer retention: from loyalty programs, transaction safety and reliability to on highly trusted third parties to the development of proprietary design standards. Related with this last topic, the adoption of distinct processes, asset positions, and different stages of evolution guarantees competitive advantage to companies (Teece, 1986). For

example, Amazon.com enhanced its networked business by allowing customers to share their comments about books, enhancing the engagement and reliability of their purchases whenever a buyer wants to get more information.

2.2.4 Novelty

The last value creation generator that Amit and Zott have considered is “Novelty”, which is related to the ability of companies to introduce new products or services, new production, distribution or marketing methods, mainly through market innovation. By connecting unconnected parts, eliminating inefficiencies in the buying and selling processes, adopting innovative transaction methods, capturing hidden consumer needs, or creating entirely new markets, value is created.

The advantage that companies with e-business activities have compared to traditional business is related to their flexibility in the development of services without the need for a large allocation of capital over physical assets. Talkdesk, a Portuguese Unicorn cloud-based business, realized that call center space and support space were made from old technology - the same software and equipment - and were out of date for many years. The idea was to simplify and disrupt this industry by reducing the investment and the people needed to define that space by introducing a webpage where everyone would enter their username and password. By doing this procedure a call-center would be established anywhere.

2.3 Customer Value Proposition

Kotler et al., (2013) argue that companies must define a set of benefits or values they wish to deliver to satisfy the needs and desires of customers. This "bundle" integrates environmental, economic, and social values regardless of whether the company is for profitable or not (Emerson, 2003), and should be captivating enough to answer the consumer’s question: “Why should I buy your brand rather than a competitor is?”

There is no general consensus about what is and what makes a value proposition persuasive, since existing literature is fragmented and poorly defined (Ballantyneet al., 2011), but Payne, Frow and Eggert propose the following concept (2017): “A customer value proposition (CVP) is a strategic tool facilitating communication of an organization’s ability to share resources and

offer a superior value package to targeted customers." This capacity to share resources and offer superior value is related to the competitive advantage developed, that is, the superiority or inferiority of a company in relation to its competitors.

The Resource Based Theory (RBT) states that the company's competitive advantage and performance depend on its unique resources, and are divided in four (Kozlenkova, Samaha, & Palmatier, 2014): knowledge, innovation, relationships, and brands. The first two are considered the antecedents of CVP and the others moderate the impact on customer's attitudes and behaviors. Regarding the antecedents, the market knowledge is divided into customer knowledge and competitor knowledge (Vargo & Lusch, 2004), and innovation foster the act of finding problems and introducing solutions to make customers' life easier.

It seems also important to analyze the impact CVP has on both suppliers and customers. In the first place, value proposition shows why and how customers gain superior value from consuming a certain product or service, so they remind the organization that its objective is to satisfy customer needs more effectively and efficiently than its competitors (Morgan, 2012). On the customer's side, CVP has a positive impact on value perceptions and satisfaction once customers set expectations and clarify the superior benefits and costs of engaging with the firm and its offerings (Eggert & Ulaga, 2002).

To summarize, providing value seems critical to the success of a business in any stage. Value creation depends on internal and largely external factors, and for that it is necessary to decide on the measures to be taken and then implement them, communicating the results to drive the business focused on value creation.

3. Methodology

Different sources of data were used to assist in the development of the business plan for "ORIGINS". To answer the initial research questions, secondary data was collected in several articles by searching for two categories of keywords, one related to food knowledge and another related to consumer behavior. The findings were then analyzed to understand the overall developments in the food and retail industry nowadays, and the notions given by experts and researchers, such as Meike Janssen from the University of Kassal, Germany, on why do consumers care about good quality products (Janssen, 2018). Furthermore, the scope of the analysis was reduced to the Portuguese market in order to better comprehend the consumer behavior towards food. Thus, statistical data was gathered from the Statistics Portugal (INE) (2017) and the findings of the study "Consumo Consciente: Perceção do Consumidor Português" from GfK Metris, (PÚBLICO, 2014), was analyzed to know the degree of awareness that Portuguese have on food consumption. This secondary data seemed important to give an overview of what the market is currently doing on this subject, providing the basis for a macro and micro analysis, insights on the best approach to market entry and the strategy to be adopted to create more value comparing to its competitors.

To deepen the study, primary data was also collected by handing out a questionnaire to people on the street and also through social networks. Developed under the online platform Qualtrics (Appendix 1), the objective was to achieve representative sample of residents in Portugal. Subsequently, the results were analyzed and processed using the SPSS data analysis program, and a regression was performed to understand which variables influence the consumers likelihood to use a mobile application such as the one "ORIGINS" wants to offer.

4. Business Model

4.1 Value proposition

"ORIGINS" is a network that allows consumers to connect with supermarkets and food suppliers. To make them aware or change their minds for basic food, like meat, fruit and vegetables. Teach them something by sharing producer's information and linking their opinions and choices. The idea is based on issues of food transparency, and this will result in a better future for all.

4.2 "ORIGINS" Mobile App

As stated before, "ORIGINS" is a smart way to raise trust in the food consumed. With a click an individual can have all the information about supermarkets, suppliers, quality, nutrients and chemicals used. The mobile app will be built with a user-friendly interface, easy menus, and reliable information, and therefore, it will be important to define the "players" involved and the logistic process.

The 4 involved players are:

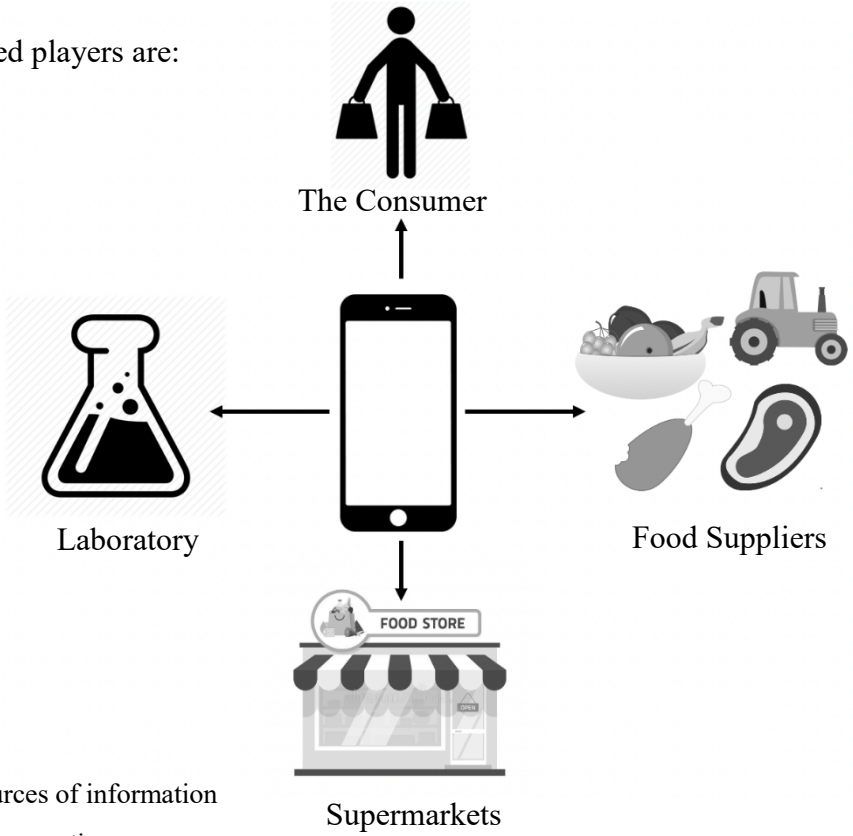

Figure 3 – Sources of information
Source: Self-assumptions

- **Consumers**: Nowadays information on consumers' experience with a product or service is easily accessible through opinions and reviews. This transparency allows greater awareness from future consumers because it is possible to compare options and set expectations before taking a decision. For example, an individual goes to Zomato to research the ratings of certain restaurants prior to the visit. Therefore, buyers' opinion will be essential to provide personal information about the experience in a supermarket with food.

- **Supermarkets**: The partnership with retailers seems essential to get access to a database of the main suppliers of meat, fruit and vegetables opening the possibility to involve them in order to share information and engage with "ORIGINS" network. Related to the technology that will be used, negotiations with supermarkets are fundamental to get authorization on QR codes distribution next to the respective products.

- **Laboratory Institutes**: All the information provided in the mobile app must be reliable and trustworthy. Since most of the information comes directly from food suppliers, it will be necessary to ratify the products with laboratory analysis. By doing this, all the risks and benefits are studied and certain assumptions on consumption and its impact can be provided to the app users.

- **Food Suppliers:** One of the main objectives of this app is to increase the link between consumers, retailers and food suppliers. This is only possible by partnering with these last entities in a collaborative agreement where information is shared. More than an app, "ORIGINS" also wants to certify products that is given to food suppliers when they respect certain regulations on transparency policies and food safety practices.

“ORIGINS” wants to provide more information regarding the following topics:

- Production Information;
- Origin;
- Traceability from the origin to the supermarket shelves;
- Quality measure;
- Chemicals used and its impact on health;
- Previous buyer feedback/reviews.

Which products “ORIGINS” wants to address?

Most products have labels that provide an important list of nutrients, allowing the consumer to make a conscious decision at the time of purchase. However, there are a group of products that provide no or little information to the end consumer, they are:

- Meat;
- Fruit;
- Vegetables.

These being the products that will be the focus of "ORIGINS" in a first stage.

The Logistic Process can be divided in 5 steps:

1. The buyer is aware about “ORIGINS” app;
2. The buyer downloads the App;
3. During shopping or at home, the customer scans the QR codes in the product;
4. A Dashboard is shown with detailed information on the product;
5. The customer provides opinions and reviews about quality of the product.

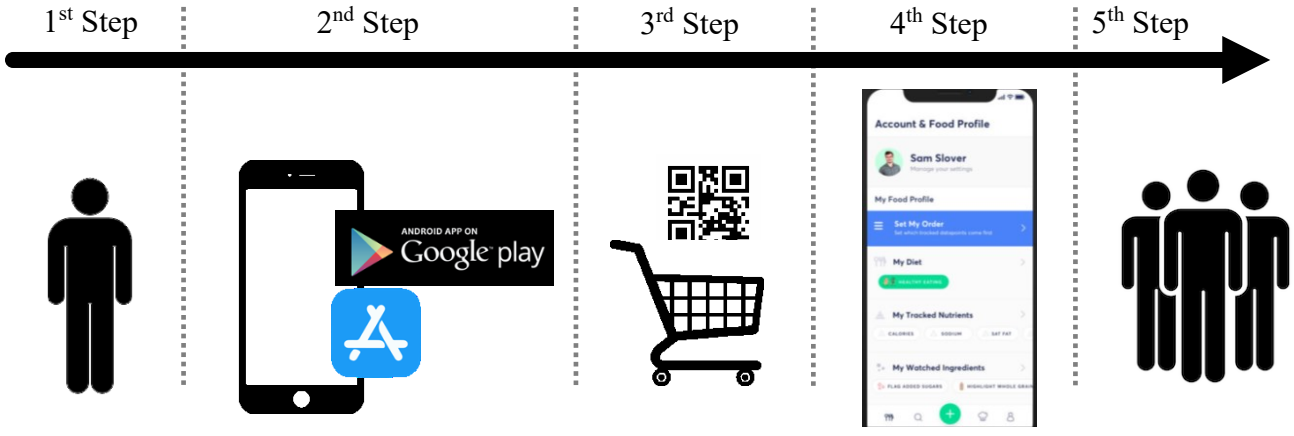

Figure 4 – Logistic Process

Source: Self-assumptions

4.3 SWOT Analysis

One of the most used tools to identify the factors in the internal and external environment that influence the operations performed by organizations is the SWOT analysis. In the literature review, it is stated that the ability to create more value than the competition is related to the ability to develop greater competitive advantage, and for this reason, this section addresses the strengths, weaknesses, opportunities and threats of "ORIGINS". From this, it will be possible to define the processes of strategic planning of the idea.

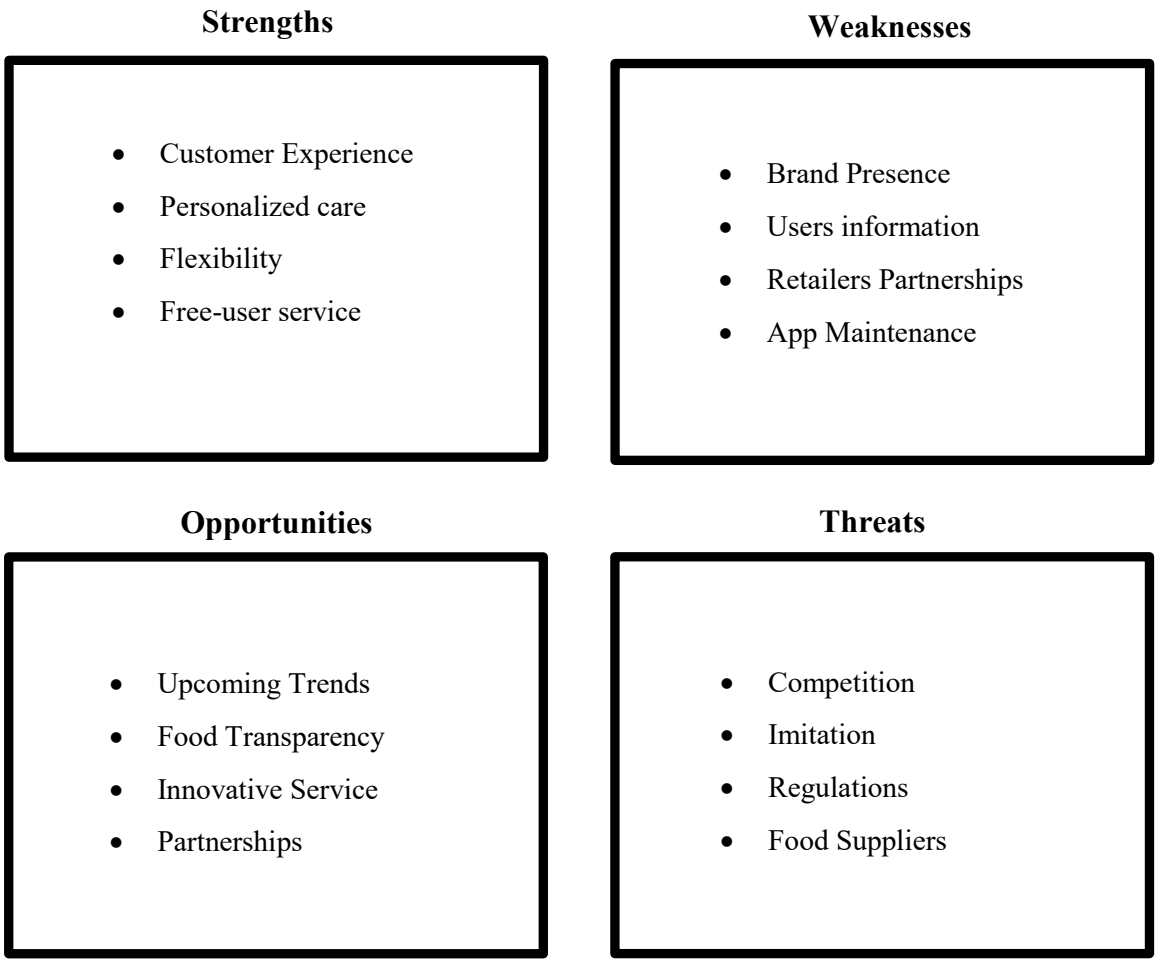

Figure 5 – SWOT Analysis

Source: Self-assumptions

4.3.1 Strengths

One of the main strengths presented in this service is related to the customer experience provided. The mobile application will allow consumers to scan the products and get information on several parameters, a special one includes the reviews given by the inputs of other consumers – something important as they have the opportunity to impact and see a difference in how supermarkets and suppliers operate.

It's known that the proper design of a user interface can make a significant difference in a consumers' experience. Therefore, the interface will be designed in way that is not overloaded with unnecessary information, avoiding tedious moments. Simple navigation will be crucial for users to enjoy exploration (Shaoolian, 2017), and each customer will have a customized area with the products already scanned and all revisions.

Other strength is related to the innovation that's happening in the retailing sector. Supermarkets are changing the way they connect with consumers, and one of the signs is the increasing demand for greater transparency of information on the origin and production of certain products. The idea presented in this project might be considered a novelty in the Portuguese market, once there is no independent entity trying to link supermarkets and consumers. In addition, the information that will be available to the consumer is important for their daily decisions, so the mobile application will be presented at no cost.

4.3.2 Weaknesses

One of the main difficulties that most companies experience when starting a business is their ability to increase their brand awareness between the different channels. In order to address this problem, "ORIGINS" pretends to identify the target market and all the features that will make the consumer engage more easily with the product. This will reduce time and costs to the company and increase efficiency in the long-term, since only the right consumer will receive the information and engage with the brand.

Another limitation found in this service is related to the use of the mobile application. When the consumer wants to know information about a particular food the research is done a limited number of times because after being clarified it will no longer need to access the same information. In this way, it is expected that there will be a decrease in the use of the service over time, unless it buys a product from a new supplier/brand. Thus, as stated in the literature

review, it's necessary to implement a lock-in strategy to make consumers return to the service. One of the main objectives of this idea is to narrow the connection between supermarkets, consumers and retailers; but it's easy to conclude that supermarkets will be the primary agents since they will provide the list of food suppliers and have influence to authorize the presence of QR codes next to the products. Supermarket chains have complex organizational structures, and moreover it's expected that in an initial phase it will be difficult to negotiate the conditions to create partnerships with supermarkets and their suppliers.

Finally, it is important to highlight the need for a high investment to create a mobile application with a user-friendly interface to engage consumers with the service. This investment will not only happen at the beginning of the company, but throughout its entire life cycle, as the number of users increases it will be necessary to maintain all operations.

4.3.3 Opportunities

According to the Food Marketing Institute (FMI), "grocery shoppers want more than just information; they desire transparency in engaging them, offering assurances of food safety, the pursuit of health and wellness, the appetite for discovery, and a closer connection to food" (2017). In other words, shoppers are looking for a culture of trust and transparency across organizations, and this problem presents retailers with the challenge of how to do it. Transparency is already a trend and consumers are demanding a system where they can be aware of what they consume regularly. Shoppers are discussing these issues on social media, and it was found that most of these conversations are about genetically modified organisms, animal welfare and fair food information, and moreover it seems consumers are showing concern about social and cultural factors that need to take into consideration.

Food transparency is going beyond the information given in the label, and this is already perceived as the next innovation in the retailing sector. As stated previously, consumers are demanding more information, and with the technology of today it's already easier to achieve it. In every market, retailers fight to gain more market share by building unique competitive advantages and most of them do this by listening to the customer and developing a deeper understanding of their needs and wants, which can provide insights for future innovation.
This idea intends to take advantage of the opportunity already in the market and to impact both the present and the future of the food industry. "ORIGINS" will use farmers, suppliers, and

retailers to create a safer and more transparency supply chain and this will require partnerships which will create greater competitive advantages for all.

4.3.4 Threats

The number of health mobile applications that consumers use on their phones is increasing, and this is a sign that competition is strong. Though most of these brands present similar offers, the consumer tends to use the one that stands out more. “ORIGINS” is considered a health / wellness application, and is competing with several other companies, nationally and internationally, struggling to gain more market share. For this reason, it is important to define the key competitive advantages to differentiate themselves from the others and establish a rigorous marketing plan to counteract the power that other companies have over the market.

Another negative feature in the mobile application industry is related to the easiness to replicate the success of another service or offering. Companies can slowly take the market share of “ORIGINS”, and therefore, to keep them away it’s important to build a brand in short period of time. Whether through advertisement or social media it’s important to create awareness from the market to establish a position. Partnerships also play an important role to prevent imitation and competition, because it will help boost awareness of the brand and blocks the possibility of relationships with these partners. But this fact brings other threat. The food industry is marked by several government regulations and critical public opinions, which will influence how “ORIGINS” is going to conduct business. It’s known that the goal of this idea is not to show the truth behind the food market, but to make the consumer aware about it. The consumer asks for more transparency and by partnering with both suppliers and supermarkets this will be possible. However, to get all the necessary information it will be necessary to study all supply chain, the journey products do from the farmer to the supermarket, which it’s considered difficult because several companies might not want to share their supply chain processes to the public.

4.4 Macro Analysis

In order to understand the food industry and establish an effective strategic plan it will be necessary to analyze the food market in Portugal which is the place where "ORIGINS" wants to launch its mobile application. By doing this, we intend to realize the traffic pattern information, demographic and lifestyle data, and also the position it will take compared to what other companies offer, focusing on the key resources to develop unique features that can bring greater competitive advantage.

4.4.1 Industry Analysis

The last decade was marked by a recessive period of the Portuguese economy (with the period 2011-2013), and several events affected the availability of food, such as the limit of the milk quota regime, Russia's embargo on EU and the implementation of Animal Welfare Directive, which armed most national food producers. During the recession, the unemployment rate increased to 16,2%, resulting in greater inequalities of income distribution, being the risk of poverty of 18,7%, canceling the improvements prior to crisis. With the same trend, the inability to afford basic products and services such as food and heating affected 21,8% of private households. According to the Statistics of Portugal, in 2012 there was a cumulative reduction in the value of household food expenses with rising food and non-alcoholic beverages prices and of restaurants and hotels. This situation had an impact on food availability in that year, but also in the following five-year period, where average food availability was lower for most products than during crisis. Nevertheless, the consumer and industry confidence continued to increase throughout the years, and the 2017 year presented the highest values of the last decade, reflecting the expectations of employment and economic growth as a result of the greater investment and Portuguese notoriety in foreign markets.

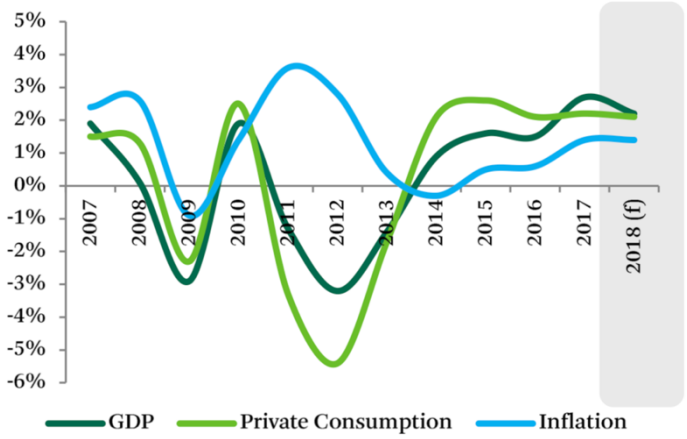

Figure 6: Portugal Market Outlook (2017)

Source: CBRE Research

These facts seem important once economic factors, including cost of living and income availability, are one of the drivers that most influences purchase decisions, besides education, skills, and social determinants with culture. In addition, data from the Statistics Portugal states that the Portuguese food balance had an apparent reduction in the consumption of meat, fish, cereals and fats, and the availability of vegetables, fruits, sugar and stimulants (coffee and chocolate) increased (Statistics Portugal, 2017). However, when comparing the distribution of quantities of food products consumed daily and the recommended Food Wheel, there is a slight distortion pattern from the recommended one, and this reflects the excessive consumption of meat and dairy products and the lack of fruits, vegetables and cereals intake in a sufficient level. This brings the question, how conscious are Portuguese about the food they buy and consume, and do they care about its impact in health. An important aspect to consider is Literacy, as it plays an important role in people's health (Gabinete de Estatística e Planeamento da Educação, 2009). A poor literacy rate of the population influences their health literacy. The average health literacy in Portugal is slightly lower than those in other European countries analyzed, with 11% of the population with "inadequate" and about 38% with a "problematic"; the proportion at "excellent" level (8.6%) was the lowest in all countries studied. In that study, more than 60% of respondents with low levels of education had "problematic" health literacy (Gomes et al., 2017). Other study on the same topic by GFK Metris, it was analyzed how conscious are Portuguese in their choices. The results showed that, related with food matters, 40% of people prefer to buy fresh Portuguese foods and not imported, due to its quality (71%) and freshness (30%), since it can help the Portuguese economy (43%). When questioned about production awareness on product origin and quality certifications, only 12% of the population is aware of this fact, and only 10% would pay a little more to have an organic product (Diário de Notícias, 2014). However, in recent years, food scandals have shaken consumer confidence, which has resulted in changes in expectations regarding product choices. "They want to know which ingredients are in the food products they purchase and from where those ingredients come" (Food Marketing Institute, 2018).

Many are the regulations that ensure the quality and reliability of products to consumers, like the certification ISO 22000, the HACCP certification, etc. One worth mentioning is the regulation (EU) No 1169/2011 of October 2011 of the European Parliament in which it was approved new food labelling rules making nutrition labelling compulsory in all European Union Member States, with several information such as the legal name, a list of all ingredients, in descending order of weight, the country of origin or of provenance, a nutrition statement, etc. "Nutrition information on food labels is regarded as a major means for encouraging consumers

to make healthier choices when shopping for food" (Goyal & Deshmukh, 2018). However, the consumer still doesn't know what they mean. It's still difficult to draw reliable assumptions to ensure food safety. The Portuguese Government has organized campaigns to raise awareness among consumers, but according to an analysis published by Deco Proteste (2016), the variety of nutrition label schemes in Portugal cause difficulties for consumers.

4.4.2 Food Labels in Portuguese Retail shops

The way product labels are presented in most Portuguese retailers have been evolved throughout time. Organizations and companies in the sector, including the Portuguese Agro-Food Industries Federation (FIPA) and retail brands, have been working together to decrease the difficulties in reading and taking decision from consumers, starting in 2006 when it was presented the blue symbols, as shown in figure 7. Still, another model of voluntary nutrition labelling was developed by the Food Standards Agency in the United Kingdom, the nutritional traffic light, with colors assigned to some nutrients. In Portugal, this nutrition labelling was introduced in 2009, but according to a European Union study (2013) on "functioning of voluntary food labelling schemes for consumers in the EU", Portugal was one of six countries with the most food labelling schemes, which may confuse consumers, who would prefer a single scheme.

InterMarché & E. Leclerc	Continente	Pingo Doce
		

Figure 7: Food Labels in Portuguese supermarkets

Source: World Health Organization - Europe

Thus, it is possible to conclude that the label systems used by supermarkets have evolved over time to help the consumer to know what they consume, although some inconsistencies are

present. On the other hand, there is a group of products for which the consumer still does not receive much information, such as meat, fruits and vegetables. The products for which "ORIGINS" intends to implement a label system.

Meat	Fruit	Vegetables
		

Figure 8 – Food Labels in Meat, fruits and vegetables *Source: Self-assumptions*

4.5 Competitor Analysis

An essential part of "ORIGINS" business plan is to identify and analyze what competitors are offering on food and health information. By collecting this information, it will be possible to improve key aspects in the service proposed and attract a specific market. The competitors were divided in 3 main groups: Retailers App; Health App and Food Tracking App. It is important to note that most of the competitors presented are worldwide known and have little or no participation in the Portuguese market. The applications offer similar features and differ in certain aspects that will be discussed below.

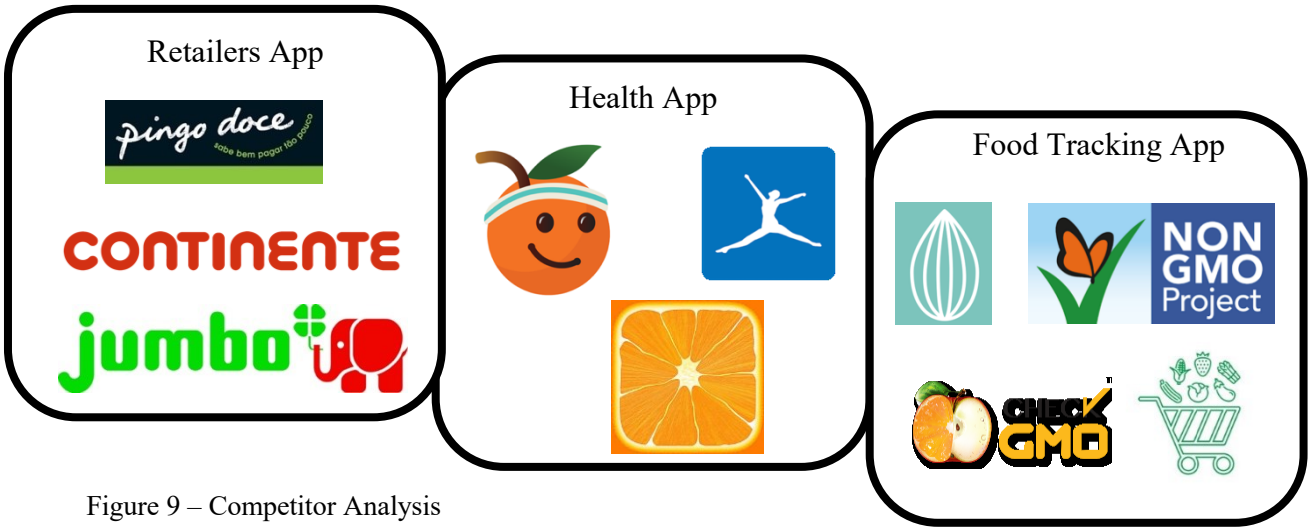

Figure 9 – Competitor Analysis

Source: Self-assumptions

4.5.1 Retailers App

In Portugal, the online shopping market has grown over the last decade, and most brick-and-mortar companies have adopted an omnichannel approach, extending their channels to internet and mobile applications sale. This last offer is regarded as competition to ORIGINS due to the constant improvement and offer of information on the products, their characteristics and benefits.

Three companies are leading this concept: First, Continente Online, the online channel of the Sonae Group, considered the Portuguese leader in food retail, was initially launched in 2011 and since then have helped the group to gain customer recognition and greater competitive advantage in the market. Nowadays, it presents a mobile application (app Continente) for customers browse the shelves in each supermarket area with a virtual cart, get more information about each product and get access to promotions and discounts. The group owns several brands, such as Worten, one of the best known, and it is worth mentioning that Sonae's retail sales have already exceeded 100 million euros. Second, Pingo Doce, which is also one of the largest supermarket operators in Portugal with more than 400 stores spread around 293 cities, belongs to the Group Jerónimo Martins and Ahold Delhaize. This retailer presents the mobile application Pingo Doce App. Like Continente is offer, this channel allows customers to make online purchases by accessing the product brochure, special discounts and coupons. Lastly, Jumbo is a Portuguese hypermarket brand, owned since 1996 by the French group Auchan. The group owns not only Jumbo but also “Pão de Açucar” supermarkets. Both brands are in the process of being designated under a unique name, Auchan, which already started in the second half of 2018 and goes until the first half of 2019. The brands are spread throughout the country, being important to highlight that under Jumbo brand there are 34 hypermarket stores, and 3 “Pão de Açucar” supermarkets. Regarding the Jumbo mobile app, it has the same features as most retailer mobile applications but is looking for a significant improvement in the presentation of more information about food, their benefit and origin.

Therefore, these mobile applications offered by retailers are essentially made to facilitate the buying process between the consumer and the supermarket but are expanding their strategy to more transparency on the products they offer.

4.5.2 Health Apps

Mobile health applications are also considered competitors as some of which provide guidance in terms of nutrition and benefits of eating certain food, and are becoming widely popular, with usage growing by 330% in the last three years (Kesiraju & Vogels, 2017). On this matter, three competitors can be analyzed: Fooducate - Healthy Weight Loss and Calorie Counter, tracks what a person eats, and the physical activities performed in order to see the progress and achieve weight goals. This food calculator presents the calories, fat, carbs, protein and other elements for over 250,000 products (food and drinks), and generate a letter grade (A, B, C, or D), for each product scanned, along with a brief explanation. It presents millions of users in the US, the only market where they are present, and won several awards, such as the best health app and US Surgeon General Health App Challenge, increasing its reputation in the market and potential to cross borders and run worldwide. Similarly, Nutrients – Nutrition Facts is a health mobile app which supports the consumer to discover nutrition facts on food, such as the vitamins, mineral, amino acids, fats, sugars, and more. With a simple interface and a database of nearly 200,000 products, users can have access to all information without internet connection, which is an advantage compared with other offerings. On the other hand, MyFitnessPal is a worldwide calorie counter app that helps users to lose weight and get healthier by providing information on food and physical exercise considering the calories and nutrients eaten during every moment of a user's journey. The company operates as a subsidiary of Under Armour Inc., world known footwear, sports and casual apparel manufacturer, and it's considered the number one diet app by consumers reports on mobile app stores, iTunes and Google Play.

4.5.3 Food Tracking App

This group of food tracking apps includes the brands that aim to investigate and report the risks that certain ingredients presented in the products have on health and environment, and present characteristics similar to the ones "ORIGINS" wants to present. Most of these companies operate under regulations and partnerships with public authorities which ensure reliable sources of information and comprise the following: Non-GMO Project Shopping Guide, an app designed to support consumers on get acquainted about what is in food and also on when to avoid Genetic Modified Organisms (GMO). It's relevant to state that, all information is ruled by the Non-GMO Project's Product Verification Program, the only third-

party program in North America, which gives a certification based on transparent and rigorous standards. Similarly, Check GMO is a simple tool whereas a shopper scans a product displayed in the supermarket and by pressing a button it's shown if that product has GMOs in it or not. And with an even more focused offering, Dirty Dozen provides a free, simple application with two lists of fruits and vegetables with more and less pesticide residues. The first list, "Dirty Dozen," is made up of 12 products with the highest amount of pesticides, and "Clean 15" consists of 15 foods with the lowest levels of pesticides, including non-organic ones. Moreover, this app helps the consumer make purchasing decisions on the budget and to understand whether it is worth buying organic or not. Lastly, Almond.org is a social enterprise that provides certification for brands that demonstrate their commitment to transparency and sustainability, whether related to the environment or consumer health. One of their products is the mobile app, which is not presented in all mobile stores, and is the mean by which consumers scan labels already in the product and get the traceability or production history of a product, allowing consumers to get a greater transparency of information.

4.6 Survey Analysis

Following the macro analysis, this part of the research focuses on understanding the behavior of a sample population in relation to food when buying at the supermarket, how they are aware of their food choices and how they would be willing to use a service like "ORIGINS". With this information it was possible to identify some of the practical needs of the market and define the business opportunities for this idea. The online survey was compounded by 27 questions divided into 3 groups. The first group starts with a brief introduction of what the study is and a set of generic questions about respondents' demographic data. The second group comprise questions regarding the criteria used from individuals to choose a certain supermarket or grocery store. Lastly, the third group focus on understanding if individuals care about food and its impact on health, and what it needs to change nowadays in order to make them more conscious The vast majority of the information was collected through social network (Facebook and WhatsApp), but also through interviews directly made to people who were in different supermarkets (ex: Celeiro, Continente, Pingo Doce), because it was important to get reliable and bias free information from respondents.

4.6.1 Group I - Descriptive Data

The following analysis will present the results of a sample of 200 responses, being 90 men (45%) and 110 women (55%), all Portuguese residents.

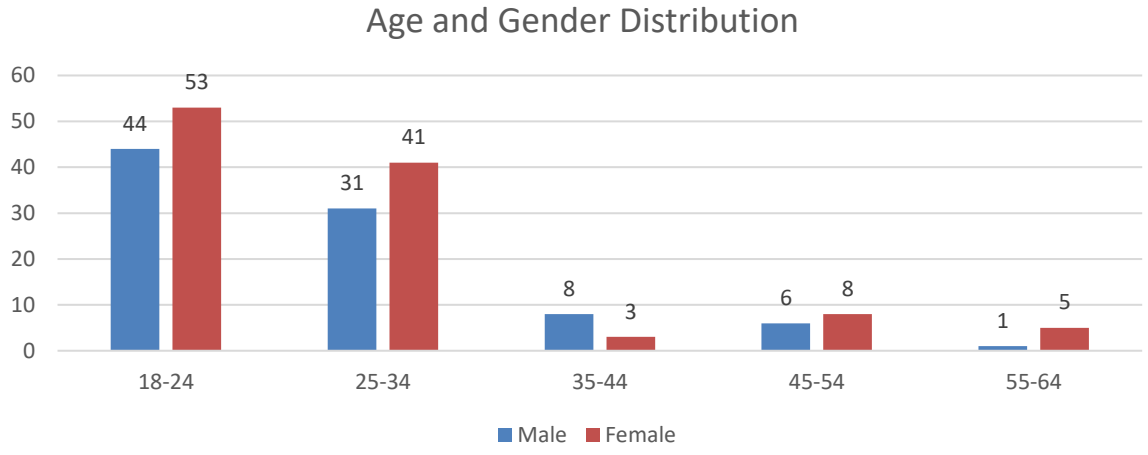

Figure 10: Age and Gender distribution

Source: Survey Results

As already mentioned in this study, the vast majority of mobile application users are made up of younger generations (ages 19-34). Thus, in order to have a closer relationship with future users of the "ORIGINS" service, the research was distributed to people of any age, although there were a greater number of responses by individuals of younger age groups: 49% of the responses came from individuals over 18 and under 24 years of age, 34% of respondents from 25 to 34 years of age, 9% of people over 35 and under 44 years, 7% of people over 45 and under 54 years of age and 1% of persons over 55 and under 64 years of age. Other relevant information states that 77 of the respondents (38,5%) are currently studying, 111 are currently working (55,5%), 3 of the respondents are retired (1,5%) and 9 of the respondents are unemployed (4,5%). The average monthly food expenditure reached 246.72 euros.

4.6.2 Group II – Supermarket information

Gender	*Information availability*	*Reading Labels difficulty*
Male	3,9	5,3
Female	4,2	5,2
Total Average	4,1	5,2

Figure 11: Information displayed in the products

Source: Survey Results

When asked to evaluate whether the information presented in the supermarkets is sufficient, it was possible to observe the total average of 4.1 on a scale of 1 to 10 (where 1 is "totally disagree" and 10 "totally agree"). On the other hand, when asked about "Reading Labels Difficulty", the results are a total average of 5.2 within the same scale. Hence, it can be assumed that the information provided in the supermarkets is fair and most consumers can understand product labels, though the results show that that is not sufficient to ensure they are doing a safe, good, and beneficial decision. Information such as quality, origins, chemicals used, and others are not yet well provided.

4.6.3 Consumer Awareness

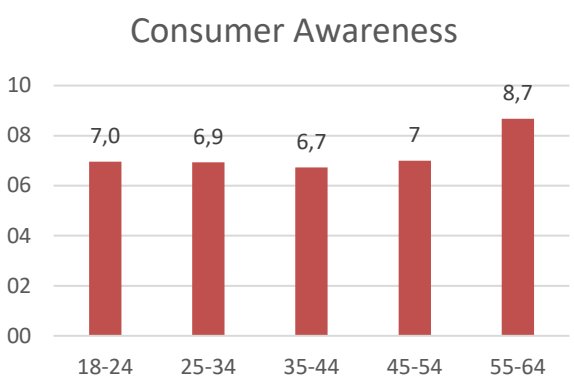

Figure 12: Average conscious towards food

Source: Survey Results

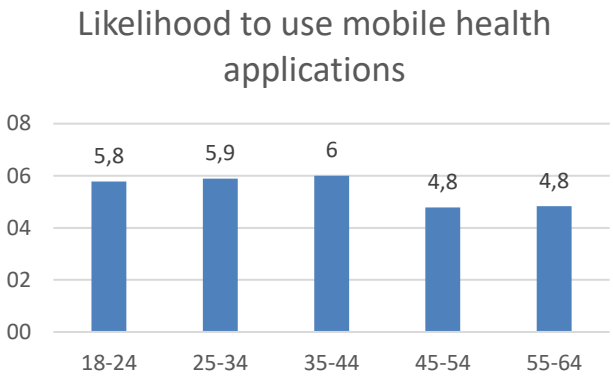

Figure 13: Likelihood to use of mobile health app

Source: Survey Results

By analyzing figure 12, it seems there is a generalized awareness of the different age groups on food consumption and its impact on health, and due to health problems awareness will tend to increase over time. Related to figure 13, the average likelihood of interest to use a mobile application, such as "ORIGINS", is 6, which can be considered a favorable result from the population. Moreover, considering the numbers presented it seems buyers are aware about their food choices, and when asked which of the elements they should have more access to facilitate their purchasing process, the following results were given with a scale of 1 to 10 (where 1 is "not relevant" and 10 "very relevant"): Quality 8.43; Information about the benefits and problems of products 7.91; Nutritional value 7.23; Information about the origin and production 7.74; and food safety practices 7.35. These kinds of information can only be exposed if supermarkets and suppliers narrow their relationship, and when asked whether it would be beneficial to the consumer if this connection was intensified, the average result was 7.0, with the same scale, which is favorable response.

4.6.4 Willingness to Pay

	# Number	*One-time Payment*	*Monthly Payment*
Yes	18	4,8 €	2,9 €
Maybe	92	2,3 €	1,3 €
No	90	4,1 €	1,4 €
Total Average		3,3 €	1,5 €

Figure 14: Willingness to Pay *Source: Survey Results*

Although "ORIGINS" is a free app, it would be important to look at the willingness consumers would have to pay for a health app. Thus, the respondents had the choice of three options: “Yes”, “No”, and “Maybe”. Then, two modalities would be presented where they would choose the ideal price regardless of their previous choice. To obtain a conservative interpretation, the answers “No” and “Maybe” will not be considered since it is difficult to assume that these last ones would actually be willing to pay, and several other factors would need to be considered. Therefore, 4.8 euros is the result for one-shot payment, and 2.9 euros to the monthly payment.

4.6.5 Regression Models

To better understand the relationship between two or more variables of interest in the sample respondent population, additional studies were conducted to find a model that best suits data and then interpret its results. There are several types of regression models that can be used, and since the dependent variable ("Probability of using a mobile food application" with a "Yes" and "No" scale) corresponds to a categorical value, an analysis of logistic regression was performed. Thus, part of the process involved checking which independent variables (such as Gender, Age, Occupation, Conscious Consumption, Healthy Consumption Level, Level of satisfaction with information available in the supermarket, Difficulty in reading food labels) can actually be used in this regression and which help to predict the dependent variable. Many tables are generated using this analysis and for that reason it will only be shown three main tables to understand the results.

In this study, it was assumed that the probability of using a food mobile app (dependent variable) is predicted based on variables: “Gender”, “Search benefits” (how willing the consumer is to search information about food), “food information impact” (the level food information impacts consumer actions), “Quality supermarket” (quality weight to choose the supermarket), “conscious consumer”, “changing behavior” (probability of changing habits), and “balanced meals consumer”. But it is important to answer the question of whether or not there is a significant relationship between these independent variables and the decision about to use a food mobile app, for that reason a Pearson Chi Square Table Analysis will be used.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3,045 [a]	1	,081		
Continuity Correction [b]	2,538	1	,111		
Likelihood Ratio	3,038	1	,081		
Fisher's Exact Test				,096	,056
Linear-by-Linear Association	3,029	1	,082		
N of Valid Cases	200				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 29,25.

b. Computed only for a 2x2 table

Figure 15: Chi Square Tests *Source: SPSS Output*

After analyzing all variables, the table above shows the “goodness of fit” between "Gender" and "Use of mobile food applications". When looking at Pearson's Chi-square line, the test statistics is 3.045, no cell had an expected count less than 5 (so that assumption was satisfied), and the corresponding *p-value* is 0.081. Therefore, since the *p-value* is greater than the significance level (α= 0.05), we do not reject the null hypothesis, in other words, there is insufficient evidence to suggest an association between gender (male and female) and the use of mobile food applications. This may be linked to the small population collected from the survey (n=200) and as a result, the variable “Gender” will not be included in a more in-depth analysis.

- $Likelihood\ use\ food\ app = \beta_0 + \beta_1\ Search\ Benefits + \beta_2 Impact\ more\ info +$

$$\beta_3\ Quality\ supermarket + \beta_4 Conscious\ Consumer + \beta_5\ Changing\ behavior + \beta_6\ Balanced\ meals$$

Assuming that the collected data have already fulfilled all the necessary assumptions to carry out binomial logistic regression, the results are as follows:

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	209,596[a]	,192	,268

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

Figure 16: Model Summary *Source: SPSS Output*

The "Model Summary" above shows how much variation in the dependent variable can be predicted by the model. Since the Cox & Snell R Square and Nagelkerke R Square values are the equivalent measures of R Squared in multiple regression, the explained variation in the dependent variable ranges from 19.2% to 26.8%. Thus, focusing on the last value (Nagelkerke R^2), the independent variables described in the model explain 26.8% of the variation in the "probability to use a food app".

Classification Table [a]

Observed			Predicted		
			App use		Percentage Correct
			No	Yes	
Step 1	App use	No	27	38	41,5
		Yes	14	121	89,6
	Overall Percentage				74,0

a. The cut value is ,500

Figure 17: Classification Table *Source: SPSS Output*

It is known that binomial logistic regression estimates the probability of an event occurring (in this case, the probability to use a food app). The "Classification Table" above shows that is possible to correctly classify 121/159 = 89.6% of the subjects where the predicted event (decision "Yes" to use a food app) was observed. This is considered the sensitivity of prediction, P ("Yes" | event did occur). On the other hand, in 27/65 = 41.5% of the subjects the predicted event was not observed. This is considered the specificity of prediction, P ("Yes" | event did not occur). Overall, the success rate accounted 74%, a better result compared with the intercept model.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Search Benefits	,261	,073	12,723	1	,000	1,298	1,125	1,499
	Food Information impact	,232	,086	7,319	1	,007	1,261	1,066	1,492
	Quality Supermarkets	,170	,086	3,907	1	,048	1,185	1,001	1,403
	Conscious Consumer	-,197	,113	3,057	1	,080	,821	,658	1,024
	Changing Behavior	-,605	,304	3,955	1	,047	,546	,301	,991
	Balanced meals consumer	,102	,096	1,148	1	,284	1,108	,919	1,336
	Constant	-1,676	1,180	2,019	1	,155	,187		

a. Variable(s) entered on step 1: Search Benefits, Food Information Impact, Quality Supermarkets, Conscious Consumer, Changing Behavior, Balanced meals consumer.

Figure 18: Variables in the Equation

Source: SPSS Output

Lastly, it's important to analyze the statistical significance of the test, the "Sig" column. From these results it is possible to determine that "Search Benefits" (p=.0001), "food information impact" (p=.007), "Quality supermarket" (p=.048), "changing behavior" (p=.047) added significantly to the prediction - even though the last two values are near the limit of 5% significance level - but "conscious consumer" (p=.080) and "balanced meals consumer" (p=.284) did not add significantly to the analysis. When interpreting the difference, it is necessary to look at Exp (β) column which denotes the odd ratio for difference variables. For example, the probability of using a food app ("yes") is 56% ($Y = \frac{1,298}{1+1,298}$) greater as long as the consumer searches the benefits of certain food online. Nevertheless, from this statistical analysis, it is possible to conclude that the variables chosen to predict the probability of using a mobile food application are not sufficient explanatory, since the equivalent R2 squares explains little of the variability of the response around the mean. Other explanation may be related to the lack of more predicted variables (the number is insufficient) and the variability of data reduce the statistical power.

4.7 Micro Analysis

This part will provide the forces that influence the future performance and day-to-day operations of "ORIGINS", but only in the short-term. These are in direct contact with the business and can affect activities as early as in the first day. Therefore, three areas will be analyzed: Marketing and Communication, the Company's service and Finance. Understanding these factors will help in planning and preparation as well as developing a long-term sustainable strategy.

4.7.1 Target Market

Creating preference is considered a long-term goal and it will help position the company in the minds of the target customer. Thus, it seems important to analyze the steps to accomplish this by answering the question: who and where is my target market?

"ORIGINS" goal is to offer more information about food to the consumer through a mobile platform to be easily accessible anytime. The consumer has the right to expect that the food they purchase and consume is safe and high quality, but not every consumer is aware about it. The service will target those who seek more food transparency. In other words, the shopper who wants to improve its food choices by considering a set of information: like food origin, chemicals used, quality, and its impact on health. There is increasing search on-line for certain ingredients information by consumers in order to avoid those that might be harmful. This behavior is expected mostly from older individuals (The Hartman Group, 2017), but there is an increasing awareness about food intolerances, food allergies and global scandals – such as the meat suppliers scandal in Europe, where horse DNA was found in products labeled as beef and in China which reported an excessive use of growth hormones in chicken – resulting in a generalized awareness from all ages, including the millennial generation (those born between 1979 and 1994) – fact supported by the survey, where awareness is high in all age groups. This last group will be important to "ORIGINS" for two reasons: first, they are considered the tech-additive generation, the ones most comfortable using their devices and mobile applications, which only engage with brands which are close to them on social media. As Forbes stated, "62% of millennials say that if a brand engages with them on social networks, they are more likely to become a loyal customer. They expect brands to not only be on social networks, but to engage them." (2015); and second, they care deeply about social causes and show sincere

support for them, moreover they aspire to brands which reflect attitude, a profound reason for being, a positive change which they want to see in the world.

4.7.2 Market Size Estimates

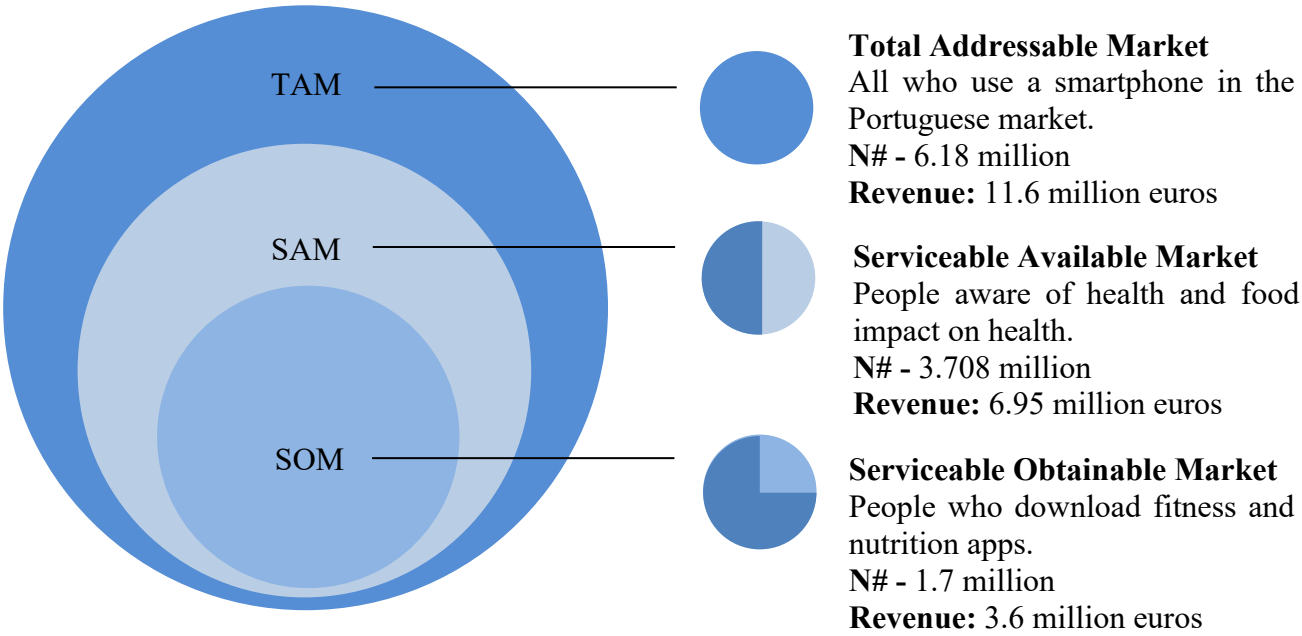

Figure 19: Market Dimension

Source: Marktest and Statista

Assuming that the people who download applications have a smartphone it was found that the total market available in Portugal is of 6,18 million users (Marktest, 2018). Now, taking a bottom-up strategy to calculate how much revenue is generated in each market size estimation, the average revenue per user (ARPU) in the market for fitness and nutrition applications in 2018 was 1.91 euros per customer (Statista, 2019a).

4.7.3 Marketing and Communication Plan

The target market is already defined, the next critical step is to create a marketing strategy to determine the details of the service promotion in order to deliver an effective message to that audience. When conducting a market analysis of what mobile application companies are doing to promote their services, especially competitors, it was possible to conclude that, according to the activity that "ORIGINS" wants to present, the best promotional channels are: Outdoor advertising; Social Networks; QR codes present in the supermarket; and Apps ambassadors.

Promotion Channel	Benchmark	Good way to	Pros	Cons
Outdoor Publicity: ▪ Billboard advertising ▪ Mobile advertising ▪ Point of Sales Display	▪ UBER; ▪ MB WAY; ▪ Continente App.	Reach hundreds or thousands of people that visit the supermarket and small grocery stores.	Reaches a big audience and creates an immediate reaction towards the service.	It's difficult to effectively reach a niche audience and measure the results. It's costly because of competition.
Social Networks ▪ Discussion ▪ Forums ▪ Blogs ▪ YouTube ▪ Facebook	▪ Ecooltra; ▪ The Fork; ▪ WAZE.	Engage in discussions, create dialogue with individuals, and share viewpoints.	It's low cost, and it reaches a large/ specific audience in a short period of time. It creates greater brand loyalty and engagement with individuals.	It can negatively impact the business because of loss of control in the message to be delivered. This message must be engaging and that it's time consuming to the company.
QR Codes ▪ Displayed QR codes in-store	▪ Almond. org	Engage the consumer with the service. It will create curiosity and foster experience.	Convenience in the process of directing the consumer to the food information. It costs nothing to produce QR codes, and all the actions are easily tracked with analytics.	It must be scanned with the phone and can only be used with internet connection. Consumers must download the mobile app.
Apps ambassadors ▪ Opinion leaders; ▪ Bloggers; ▪ Youtubers; ▪ Partnership with retailers and food suppliers;	▪ Uber; ▪ Zomato; ▪ Runtastic	Build brand image and reputation. Create greater awareness and reaching a skeptical audience.	Greater involvement with the service which is leveraged by the trust consumers place in the ambassadors.	The audience is more sensitive to changes, and it's difficult to control what the ambassador does.

Figure 20 – Promotion channels *Source: Self-assumptions*

4.8 Financial Projection

Creating financial projections is an important part of the "ORIGINS" business plan. This will allow planning and budgeting of the new business to determine if it is feasible. All the information provided will be based on assumptions, things considered true or predictors of what will happen in a particular subject, such as the growth in the market share of the company. Therefore, this section will include a forecast of sales and expenses, a cash flow statement, and a sensitivity analysis over five years to project a more optimistic and negative scenario.

4.8.1 Sales Forecast

Sales forecast is the process for estimating future revenues. By doing this accurately, it will be possible to make informed decisions and predict "ORIGINS" short-term and long-term performance.

Sales Forecast	Year 1	Year 2	Year 3	Year 4	Year 5
Sales: In-App Ads	€76 500,00	€110 925,00	€160 841,25	€233 219,70	€338 168,56
Sales: Sponsorship	€6 000,00	€15 000,00	€30 000,00	€60 000,00	€120 000,00
Total Revenue	**€82 500,00**	**€125 925,00**	**€190 841,25**	**€293 219,70**	**€458 168,56**
Total Cost	**€102 560,00**	**€132 820,00**	**€171 840,00**	**€214 560,00**	**€229 920,00**
Gross Profit %	-24,32%	-5,48%	9,96%	26,83%	49,82%
Gross Profit	-€20 060,00	-€6 895,00	€19 001,25	€78 659,70	€228 248,56

Figure 21 – Sales Forecast *Source: Self-assumptions*

As mentioned already, "ORIGINS" strategy decision to increase followers will be offering the mobile app free of charges, and as such, after analyzing the revenue streams of various companies in the same industry, it was assumed that the best sources are the following:

- **In-app advertising:** It includes ads from retailers and food producers that are advertised in the app, and every time a user interacts with those ads, revenue is generated.
- **Sponsorship:** Partnerships with key entities, like health authorities, will be vital to promote products or any special offer. The information displayed will be launched on behalf of the partners, and moreover a monthly sponsorship fee will be charged.

Taking these sources of revenues into account, the value of total sales value over the next 5 years will tend to rise an average of 50% per year as more people start engaging with the company. It is known that, the total smartphone market in Portugal market comprises 6.18 million users and 3,7 million are actually sensitive about food impact on health (Kantar, 2019) – the addressable market share "ORIGINS" wants to capture. In this optimistic scenario, the company in the first year reaches almost 13% market share (510,000 downloads), and 60% in the last year (in proportion with the industry growth). In-App Ad sales were predicted considering that the cost charged per view is 0.15 cents and each user will click once on the app. Sponsorship amounts should double each year as more organizations get involved with the activity, and the monthly sponsorship fee will cost 250 euros. "ORIGINS" activity is complex, and it will require a great amount of investment in the beginning. As the service improves, the gross margin is expected to be set at almost 50%, an optimal value for a company in this sector, since the average gross margin ranges between 35% -55%. The costs are based on the variable costs (Staff Wages, Administrative services, Infrastructure services, IT support services, Marketing costs, Maintenance Costs) presented in the following part.

4.8.2 Expenses Forecast

This section presents the operating expenses of the company over the years that are indispensable for the financial projection of the "ORIGINS" business plan. Most expenses are based on management's estimates and assumptions about what ventures are doing in the same industry and include, for example, advertising costs, support services, and maintenance costs.

	Coworking space	Brand Registration	Marketing tools	App Developers	Laboratory R&D	IT Support (Servers)	TOTAL
Year 0	€ 3 000,00	€ 2 500,00	€ 25 500,00	€ 30 000,00	€ 20 000,00	€ 13 000,00	€ 94 000,00

Figure 22 – Initial Investment *Source: Self-assumptions*

Expenses	Year 1	Year 2	Year 3	Year 4	Year 5
Rent	€ 3 000,00	€ 3 000,00	€ 6 000,00	€ 6 000,00	€ 9 000,00
Staff Wages	€ 27 720,00	€ 41 580,00	€ 55 440,00	€ 83 160,00	€ 83 160,00
Adminstrative services	€ 10 000,00	€ 10 000,00	€ 13 000,00	€ 15 000,00	€ 15 000,00
Infrastructure services	€ 22 700,00	€ 22 700,00	€ 30 000,00	€ 33 000,00	€ 36 300,00
IT support services	€ 13 000,00	€ 13 000,00	€ 15 000,00	€ 15 000,00	€ 17 000,00
Marketing costs	€ 15 000,00	€ 25 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Repairs & Maintenance Costs	€ 9 140,00	€ 9 140,00	€ 11 600,00	€ 12 600,00	€ 13 660,00
Other Costs	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00
Loan Repayment	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Loan Interest	€ 15 000,00	€ 13 500,00	€ 12 150,00	€ 10 935,00	€ 9 841,50
Total	**€ 148 060,00**	**€ 170 420,00**	**€ 205 690,00**	**€ 238 195,00**	**€ 246 461,50**

Figure 23 – Expenses Forecast *Source: Self-assumptions*

The estimated cost of starting the business is 94,000 euros. This value considers the procedures required to register the "ORIGINS" brand, hire initial application developers and invest in mass marketing in Portugal. After this initial investment, expenses are expected to increase over the years due to the company's growth in the market. Assuming that the number of users will increase, the complexity of operations will be supported by increased investment in recruiting, office space and technology to improve the service provided. To set a mobile app it is necessary to incur in certain costs, which include:

- **Administrative services:** comprise setting a dashboard to control and avoid calling programmers every time it is necessary to get access to data or update contents.
- **Infrastructure services:** this is related to where the application is hosted, where the data is stored and how the data is organized and delivered.
- **IT support services:** it is involved in app architecture, and any other technical support in the development and launch.

Most of the initial investment is in human capital and intangible assets in order to set the mobile application and protect all information. Maintenance costs are 20% of the total development budget and are expected to be high because each application has bugs that need repair. Consequently, due to the high cost at the start of the activity, support is expected for a loan of EUR 150 000, repaid in five years with a nominal interest rate of 10%.

4.8.3 Cash Flow Statement

Cash Flow Statement						
Cash Receipts	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Service Sales	-	€ 82 500,00	€ 125 925,00	€ 190 841,25	€ 293 219,70	€ 458 168,56
Loans	€ 150 000,00	-	-	-	-	-
Investors	€ 110 000,00	-	-	-	-	-
Total Cash Receipts	€ 260 000,00	€ 82 500,00	€ 125 925,00	€ 190 841,25	€ 293 219,70	€ 458 168,56
Cash Disbursements	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
CAPEX	€ 94 000,00	-	-	-	-	-
Advertising	-	€ 20 000,00	€ 25 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Adminstrative services	-	€ 10 000,00	€ 15 000,00	€ 20 000,00	€ 25 000,00	€ 30 000,00
Infrastructure services	-	€ 22 700,00	€ 22 700,00	€ 30 000,00	€ 33 000,00	€ 36 300,00
IT support services	-	€ 13 000,00	€ 17 500,00	€ 22 000,00	€ 26 500,00	€ 31 000,00
Repairs & Maintenance Costs	-	€ 9 140,00	€ 11 040,00	€ 14 400,00	€ 16 900,00	€ 19 460,00
Wages/ Salaries	-	€ 27 720,00	€ 41 580,00	€ 55 440,00	€ 83 160,00	€ 83 160,00
Rent	-	€ 3 000,00	€ 3 000,00	€ 6 000,00	€ 6 000,00	€ 9 000,00
loan interest expense	-	€ 15 000,00	€ 13 500,00	€ 12 150,00	€ 10 935,00	€ 9 841,50
loan principal expense	-	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Other costs	-	€ 2 500,00	€ 2 500,00	€ 2 500,00	€2 500,00	€ 2 500,00
Total Cash Disbursements	€ 94 000,00	€ 153 060,00	€ 181 820,00	€ 222 490,00	€ 263 995,00	€ 281 261,50
Net Cash Flow	€ 166 000,00	-€ 70 560,00	-€ 55 895,00	-€ 31 648,75	€ 29 224,70	€ 176 907,06
Cumulative Cash Flow		€ 95 440,00	€ 39 545,00	€ 7 896,25	€ 37 120,95	€ 214 028,01

Figure 24 – Cash Flow Statement *Source: Self-assumptions*

Other aspect which is important to understand is the cash flow statement, which explains how cash is coming into the business and how it is going out of it. As a new startup, the company will require a greater amount of debt and investment to cover all costs incurred to set the "ORIGINS" mobile app. As mentioned previously the activity will be backed by a bank loan and a business angel investment in a total amount of 260 000€.

4.8.4 Sensitivity Analysis

	Optimistic Case					Pessimistic Case				
Revenues	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
In-App Ads	€ 76 500,00	€ 110 925,00	€ 160 841,25	€ 233 219,70	€ 338 168,56	€ 55 500,00	€ 80 475,00	€ 116 688,75	€ 169 198,69	€ 245 338,10
Sponsorship	€ 6 000,00	€ 15 000,00	€ 30 000,00	€ 60 000,00	€ 120 000,00	€ 6 000,00	€ 15 000,00	€ 30 000,00	€ 60 000,00	€ 120 000,00
Total Revenue	**€ 82 500,00**	**€ 125 925,00**	**€ 190 841,25**	**€ 293 219,70**	**€ 458 168,56**	**€ 61 500,00**	**€ 95 475,00**	**€ 146 688,75**	**€ 229 198,69**	**€ 365 338,10**
Expenses	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Rent	€ 3 000,00	€ 3 000,00	€ 6 000,00	€ 6 000,00	€ 9 000,00	€ 3 000,00	€ 3 000,00	€ 6 000,00	€ 6 000,00	€ 9 000,00
Staff Wages	€ 27 720,00	€ 41 580,00	€ 55 440,00	€ 83 160,00	€ 83 160,00	€ 27 720,00	€ 41 580,00	€ 55 440,00	€ 83 160,00	€ 83 160,00
Adminstrative services	€ 10 000,00	€ 15 000,00	€ 20 000,00	€ 25 000,00	€ 30 000,00	€ 10 000,00	€ 15 000,00	€ 20 000,00	€ 25 000,00	€ 30 000,00
Infrastructure services	€ 22 700,00	€ 22 700,00	€ 30 000,00	€ 33 000,00	€ 36 300,00	€ 22 700,00	€ 22 700,00	€ 30 000,00	€ 33 000,00	€ 36 300,00
IT support services	€ 13 000,00	€ 17 500,00	€ 22 000,00	€ 26 500,00	€ 31 000,00	€ 13 000,00	€ 17 500,00	€ 22 000,00	€ 26 500,00	€ 31 000,00
Marketing costs	€ 20 000,00	€ 25 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 20 000,00	€ 25 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Repairs & Maintenance Costs	€ 9 140,00	€ 11 040,00	€ 14 400,00	€ 16 900,00	€ 19 460,00	€ 9 140,00	€ 11 040,00	€ 14 400,00	€ 16 900,00	€ 19 460,00
Other Costs	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00	€ 2 500,00
Loan Repayment	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00	€ 30 000,00
Loan Interest	€ 15 000,00	€ 13 500,00	€ 12 150,00	€ 10 935,00	€ 9 841,50	€ 15 000,00	€ 13 500,00	€ 12 150,00	€ 10 935,00	€ 9 841,50
Total Expenses	**€ 153 060,00**	**€ 181 820,00**	**€ 222 490,00**	**€ 263 995,00**	**€ 281 261,50**	**€ 153 060,00**	**€ 181 820,00**	**€ 222 490,00**	**€ 263 995,00**	**€ 281 261,50**
EBITDA	-€ 70 560,00	-€ 55 895,00	-€ 31 648,75	€ 29 224,70	€ 176 907,06	-€ 91 560,00	-€ 86 345,00	-€ 75 801,25	-€ 34 796,31	€ 84 076,60
Cash in Bank		-€ 126 455,00	-€ 158 103,75	-€ 128 879,05	€ 48 028,01		-€ 177 905,00	-€ 253 706,25	-€ 288 502,56	-€ 204 425,97

Figure 25 – Sensitivity Analysis *Source: Self-assumptions*

To examine how different values of a set of independent variables affect a specific dependent variable, a sensitivity analysis was performed under a new case scenario called "pessimistic case" (figure 25). In it, it was possible to comprehend how sensitive EBITDA (earnings before interest, taxes, depreciation and amortization) is, assuming a scenario where the value of sales would change. Consequently, it was assumed that instead of 13% of market share in the start-up year, as shown in the "optimistic case", year 1 would reach only 10% market share due to business inefficiencies, which resulted in a drop ad-sales as fewer users click on the ads. Regardless of this decrease, the number of sponsors remained stable, as 10% market share value stills reasonable. Overall, this change would generate revenue of € 61,500 in year 1. Considering the same percentages of growth of sales of the "optimistic scenario" in the "pessimistic scenario", the fifth year would generate € 365.338,10. When it comes to expenses, although a cut in variable costs would be beneficial to ease the financial struggle in the first

three years, the values will remain the same once it is necessary to launch the mobile application.

Finally, to determine if this idea is viable, a simple break-even analysis was performed. In it, the goal was to determine when all the expenses incurred are covered by the revenues and the business should be profitable. Moreover, in the "optimistic case", the break-even point is reached in year 5 and, in the "pessimistic case", would probably happen after that year. It is important to note that this is not a bad time length, as mobile companies take from 2 to 4 years to reach the break-even, and some never reach it because of the incurred costs. In general, "ORIGINS" business will require financing for the first 36 months of operations in the amount of € 260,000. The funding will cover operating expenses and app development during this period and includes a bank loan and private equity from an investor.

5. Conclusion

5.1 Business Plan Conclusion

This study sought to analyze the viability of the "ORIGINS" business plan considering the elements studied to answer the initial research questions. From the beginning, it is known that value is created when a company presents four key drivers in the business proposal. And after evaluating the population of the sample obtained from the research and other information, such as a concurrent analysis and macro environment, it was possible to create an idea that differs from what the market offers (novelty), benefiting what customers are currently doing (complementarity). Hence, "ORIGINS" will tighten the link between consumers, supermarkets and suppliers, improving buyers' purchasing decisions by providing more information on certain foods, more specifically meat, fruits and vegetables, which have little or no nutritional information, such as food labels. This fact is proven by the survey done in the market where the question "the information presented in the supermarkets is enough for my purchase decisions" received a negative score, 4.1 on a scale of 1 to 10. With that figure, it is assumed that people want more information. Simple information that helps them. For this reason, “ORIGINS” mobile application provides a descriptive analysis on the following elements which will enhance food transparency: production facts, origin, chemicals used, quality measure and traceability. On the other hand, when analyzing for whom this idea is the most adequate, it is difficult to conclude that it is only for the millennials, because all the age groups present a greater awareness and demand for it, as shown in both survey and market analysis. As a result, the chosen channels of promotion will target all those who buy groceries in the supermarket and are concerned about their health impact, not just those who use mobile nutrition apps. But is the Portuguese market the best to start "ORIGINS"? Although other markets have not been analyzed, it is still a difficult question to answer, as the country is not the largest market for both smartphone users, 6 million users against, for example, 29.2 million users in Spain or 257.4 million users in the US (Statista, 2019b), and is also not the most competitive when it comes to mobile application growth. However, it is noticeable that the addressable usable market has 3.7 million individuals, a reasonable number to capture, which helped drive the financial projections over the next 5 years. In addition, the particularities of this business and the financial viability allow to conclude that there will be legitimate help from potential investors for this idea to happen.

5.2 Limitations

In the elaboration of this study some limitations were evidenced. Firstly, the analysis of the survey on the behavior of consumers when shopping at the supermarket was limited to a very small number of responses, which does not confer a representative population of the Portuguese market. For example, when trying to analyze if the millennials would be the target to focus on "ORIGINS", the output did not show significant differences of a group of ages, in other words, it was not possible to find a pattern to make assumptions. This fact also compromised the regression model which didn't allow to predict the probability consumers have to use a food mobile app. Besides this, the sample was not collected completely at random once it was distributed mainly on social media, which might influence the results. In an attempt to solve this restraint, a greater effort was made to find studies conducted in the Portuguese market, which are not many in the mobile app industry and consumption behavior towards food.

Other limitation found is related to the financial projections which are based on assumptions and not on actual data. Along with this, due to the lack of data from the Portuguese market, some assumptions were made using studies conducted in other European countries and in the US, in topics such as sales growth in mobile app companies and the average payback time.

To conclude, with a more personal perspective, the fact that this dissertation pretends to study "ORIGINS" business plan makes it more practical and less theoretical. For this reason, oftentimes throughout this thesis a more "informal" position was taken, being the result of the difficultness to find reliable information to make assumptions. But as a good entrepreneur sometimes it is important to risk the usual to get extraordinary results.

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Appendix

(Survey – English Translation)

Hello,
First of all, I would like to thank you for your participation in this survey. My name is Ricardo Pereira and I'm currently writing my master's thesis at Catholic-Lisbon School on New Business Opportunities. As such, I need your help to get information about your consumption behaviour when buying food at the supermarket. This survey will take approximately 2-3 minutes to complete, and it is important to note that your contribution is totally anonymous and confidential.

To make the research more interactive, we have a social objective: for every 25 answers, 10 euros will be donated to Serve the City Lisbon - an organization whose goal is to help people who are socially excluded, such as homeless, immigrants or refugees, etc.

Thanks for your help!

→

Demographic data

Gender:

Male

Female

Age:

- Less than 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- More than 64

I am residing in Portugal at the moment:

- Yes
- No

Occupation

- Student
- Employed
- Reformado
- Unemployed

→

Inside your household, who is responsible for food shopping?

- Me
- Partner
- Parents
- Shared Responsibility

Do you prefer in-store shopping or online shopping when buying groceries?

- Physical Store
- Online Store

How often do you visit the following spaces?

	Never	Mostly	1-2 times per week	3-5 times per week	Every day
Hypermarket	○	○	○	○	○
Supermarket	○	○	○	○	○
Local Market	○	○	○	○	○
Butcher & Fish Store	○	○	○	○	○
Fruit Shop	○	○	○	○	○

Which supermarket you visit the most?

- ALDI
- Continente
- Pingo Doce
- Intermarché
- Minipreço
- LIDL
- Super Cor - El Corte Ingles
- Other

Which of the following criteria are the most relevant to the choice of the supermarket you visit?

Not Relevant 0 — 5 — Extremely Relevant 10

Convenience

Reputation

Quality of Products

Discounts

Loyalty Programs

Variety of Products

Do you change where you shop often? (eg LIDL for the Continent)

Yes

No

What is the average monthly amount you spend on grocery shopping? (approximate value)

€

0 100 200 300 400 500 600 700 800 900 1000

Average monthly expenditure in Euros

How often do you buy the following items:

	Never	Rarely	Sometimes	Very Often
Snacks	○	○	○	○
Fruits & Vegetables	○	○	○	○
Red meat	○	○	○	○
White meat	○	○	○	○
Fish	○	○	○	○
Processed Food	○	○	○	○
Sodas	○	○	○	○
Alcoholic beverages	○	○	○	○

Are you receptive to trying new products?

Yes

No

I have a habit of consuming products from organic stores? (eg, Celeiro)

Yes

No

The following points correspond to problems that can be found when choosing products in the supermarket. Which ones you find most difficult?

Totally Disagree 0 — 5 — Totally Agree 10

Get Product information

Know the quality of products

Read and understand Food Labels

Find reliable information about the benefits and problems of certain products

Find the best price

Too much product variety leads to confusion

Do you worry about the products you consume and the impact it has on your health?

Totally Disagree 0 1 2 3 4 5 6 7 8 9 10 Totally Agree

Which of the following elements should consumers have greater access to facilitate the choice and purchase of food? (e.g choosing basic products such as meat, fish or vegetables).

Totally Disagree 0 5 10 Totally Agree

Quality

Information on the benefits and problems of eating a certain food

Nutritional Value

Information about origin and production of food

Measures to be taken for food safety (e.g. how to preserve food)

Would it be beneficial to you if this information were more easily provided?

Yes

No

How difficult is it to read and understand food labels? (Calories, sugars, sweeteners, properties and health impact)

Extremely Easy 0 1 2 3 4 5 6 7 8 9 10 Extremely Difficult

What is the probability of researching the benefits and problems of consuming a particular product?

Extremely unlikely 0 1 2 3 4 5 6 7 8 9 10 Extremely Likely

Would you use an app on smartphone that provides information on food quality and origin, food safety, label information, etc.?

Yes

No

How likely would you be to use this app?

Extremely unlikely — Extremely Likely

0 1 2 3 4 5 6 7 8 9 10

Would you be willing to pay to have access to more information about the food you eat at the supermarket? (Quality of products, origin, chemicals and processes used, etc.).

Yes

No

Would your eating habits change if nutritional information on food and its impact on health were more readily available to you?

Yes

Maybe

No

Read and rate the following sentences:

Totally Disagree — Totally Agre

0 1 2 3 4 5 6 7 8 9 10

I consider my meals balanced (vegetables / fruits / meat / fish).

The products that I consume are of quality and are healthy.

I consider myself a conscious consumer with regard to the food I eat and its impact on health.

I believe that having access to more information about food and its labels would help me make more conscious choices.

Access to more detailed information about food would have a significant impact on my consumption.

I believe that quality products tend to be more expensive.

It would be beneficial to me if the connection between suppliers and supermarkets (retailers) was further intensified.

The information provided in supermarkets is enough for the choices I make.