

A Work Project, presented as part of the requirements for the Award of a Master's degree in Impact Entrepreneurship and Innovation from the Nova School of Business and Economics.

“Eco-Innovation within the surf industry”

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Our venture, "Circle," introduces an innovative surf product — a traction pad crafted from recycled rubber obtained from old tires, addressing the pressing issue of tire waste. This essay traces our project's beginnings and explores our future goals, providing an account of our entrepreneurial adventure. While navigating the difficulties of developing sustainable products and breaking into the surfing industry's market, we highlight our dedication to environmental responsibility.

Circle aspires to redefine the surfing landscape by offering eco-conscious solutions, leveraging recycled materials to create high-performance, sustainable products while fostering a positive impact on both the surfing community and the environment.

Innovation – Sustainability – Surf industry – Traction pad – Prototyping - Entrepreneurship

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Eco-Innovation within the surf industry

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Table of Contents

I.	<i>Introduction.....</i>	7
1.	The spark of inspiration	7
2.	Purpose and Scope	9
3.	Identifying the problem	11
a.	Causes.....	11
b.	Consequences.....	12
4.	Connecting with sustainability	14
II.	<i>Crafting the opportunity</i>	15
1.	From concept to eco-friendly surf pads	15
2.	Value proposition	15
III.	<i>The market.....</i>	17
1.	Identifying the market.....	17
a.	Primary research.....	18
b.	Secondary research	20
c.	Total Addressable Market.....	22
2.	Competition	23
3.	Go to market strategy and product market fit.....	26
IV.	<i>Prototyping process.....</i>	30
1.	Funding grant.....	30
2.	Application	30
3.	Grant's resources offerings.....	30
4.	Grant's participation requirements	31
5.	Funds.....	34
6.	Prototyping process	35
a.	Drawing prototypes.....	35
b.	Developing prototypes with OnShape	36
c.	Testing Materials and Creating mould	39
d.	Testing in the pad mold	42
7.	Product Validation.....	43
a.	B2C ANALYSIS.....	44
b.	B2B ANALYSIS	45
	FINAL TAKE-AWAYS	47
V.	<i>Business Model</i>	49
1.	Key partners	49
2.	Customer segmentation	51
3.	Revenue streams.....	52

4.	Cost structure	54
5.	Channel & Distribution	56
VI.	<i>Customer Acquisition & Marketing Plan</i>	58
1.	Identifying our target audience	58
2.	Crafting a compelling brand story	60
3.	Digital marketing strategies	61
a.	Social media marketing	61
b.	Content marketing	62
c.	Email marketing.....	63
d.	Offline marketing and community engagement.....	64
	Building brand loyalty and customer relationships.....	65
4.	Measuring and analysing marketing effectiveness	66
5.	Timeline and Milestones.....	67
VII.	<i>How will our customers acquire our product?</i>	69
1.	Customer's decision-making unit DMU	69
2.	The process of acquiring a paying customer	70
3.	Sales process to acquire a customer	72
VIII.	<i>Financial projection</i>	74
1.	Projected Revenues	74
2.	COGS Prediction	74
3.	SG&A	76
4.	Profitability Analysis	76
5.	Financial Risk Analysis	78
a.	Sensitivity analysis	78
b.	Break-even analysis for the first 5 years.....	78
6.	Funding requirements	78
IX.	<i>Navigating the Future: Company Acceleration</i>	80
1.	Accelerating growth and scale	80
2.	Strategic partnerships and alliances	84
a.	University Surf Club:.....	84
b.	Sea Shepherd, an NGO that matters:.....	85
3.	Mentorship and advisory support	86
a.	Hult Prize	86
b.	Ocean Solutions Accelerator	88
4.	Funding Plan with Timeline.....	89
X.	<i>Conclusion</i>	94
1.	A dream on the horizon	94

2. Key achievements and challenges.....	94
3. Lessons learned	95
<i>Appendixes:</i>	97

I. Introduction

1. The spark of inspiration

Every creative project begins with an inspiration. It all started with Victor, a fervent supporter of environmental preservation. One day, walking through the downtown streets, he was unable to ignore the concerning number of used tires that were strewn by the side of the road. Alice, Benjamin, and Livina then decided to research this issue further. Our preliminary inquiry uncovered a startling fact. The quantity of waste generated by tires that were thrown away was nothing short of staggering: nearly half of the 2.5 billion tires produced each year throughout the world end up in landfills, necessitating immediate action (*Saseanu, 2019*). This realization highlighted how important it is to provide a long-term solution. The idea came to us as our group's commitment to making a difference grew: making something practical and eco-friendly out of the rubber from old tires. Rubber is a polymeric material consisting of long chains of hydrocarbons. This material consists of elastomers, large chain-like molecules that can be stretched to great lengths and recover their original shape. It is characterized by elasticity, resilience and toughness (*Paolo Spinelli, 2022*). Reusing the tires to create surf pads would both solve this pressing environmental problem and extend their life cycle.

So, the seeds of Circle, the eco-friendly business that craft surf pads made of rubber recycled from old tires' waste were planted, rooted in our shared passion for sustainability and commitment to innovation. The name "Circle" was chosen to emphasise the life cycle of the product, aligning with the spirit of the circular economy. It is also closely related to the tire's shape. This deliberate relationship highlights our commitment to reusing recycled materials and creating a visual connection. In addition to providing inspiration, we are filling a market void. The majority of surf pads available on the market are made of plastic, mostly EVA (Ethylene-Vinyl Acetate), a substance that is frequently found in classic surfboard traction

pads. Despite its good grip and lightweight, it is not the greatest choice for individuals who are concerned about the environment. In fact, the manufacture of EVA can produce hazardous pollutants, and recycling the substance is difficult (*Carrera, 2023*). Many eco-friendly brands frequently use cork (Jam Traction) or recycled EVA (FCS), but they lack the performance and flexibility that we found in rubber. Rubber is an unused resource in surf pads despite being a highly durable and effective material used extensively in shoe soles. Through the use of recycled rubber, we not only bring a superior product to the market but also promote the principles of circular economy by prolonging the life cycle of discarded tires. Even though there would be challenges along the way, this first inspiration would keep us committed to achieve our goals.

At the heart of our journey with Circle is our passion for surfing, a sport that creates a spiritual connection with nature and has shaped our lives and inspired us to start our own business. For us, surfing is more than simply a sport—it is a way of life (*Chouinard, 2005*). Benjamin and Victor, our first team members, are both experienced surfers whose lives have been inextricably linked to the waves for as long as they can remember. The oceans are our playground and a responsibility and, as surfers, we are acutely conscious of the possible damage our sport could cause to the environment. Our deep affinity with the natural world and our passion for surfing motivated us to act. We realized that instead of observing the environmental problems our seas confront, we had a role to play in safeguarding the ecosystem that has brought us so much joy.

Each member was motivated by a strong understanding of the serious issue of managing discarded tires and the urgent need for long-term solutions. Our shared desire for fostering a more environmentally conscious future served as the cornerstone for the Circle team. Our entrepreneurial journey is fuelled by the unique roles and talents of each team member, which

work in harmony to create a dynamic synergy. Together, the practical surf knowledge of Victor and Benjamin, the organisational savviness of Livina, and the analytical and marketing prowess of Alice create a team that is not just enthusiastic about our idea but also well-equipped to bring it to life (*For more information, please refer to Appendix A and B*). It was not by coincidence that our team came together; it was a conscious decision motivated by our shared ideals and a dedication to sustainability.

2. Purpose and Scope

The entrepreneurial journey involves more than just putting together a team and defining individual tasks; it also entails creating a shared vision that unites all efforts and directs the business towards success. Our purpose is two-fold. Firstly, we would want to outline the entrepreneurial journey that motivated us to start Circle, as well as the challenges we encountered and the knowledge we acquired along that journey. Secondly, our goal is to present the Circle business model in detail, covering everything from concept development to product validation and market impact. This thesis covers the operational components of our eco-friendly surf pad business idea in addition to our internal and external environmental motives. We analyze the environmental problems surrounding tire garbage, the surf industry, the opportunity in the market and our commitment to making a difference.

Circle's vision is based on the company's commitment to tackling the urgent problem of waste tire management through the creation of environmentally friendly surf pads from recycled rubber. Our shared passion for environmental sustainability informs every decision we make. At the heart of our shared vision is our commitment to providing surfers with high-quality, sustainable products while minimising environmental effect. We have established specific, quantifiable goals to turn our vision become reality. In fact, our objective is to establish

ourselves as a reputable and well-known eco-friendly brand in the surf business, distinguished by the excellence and sustainability of the material of our surf pads, providing a product that not only improves surfing but also helps to make the world greener and cleaner.

Circle is dedicated to crafting a product that significantly reduces carbon emissions compared to existing market offerings. The core of our business ethos is the concept of prolonging a product's life cycle, transforming it from being relegated to waste to being repurposed for alternate functionalities. Indeed, Circle's primary objective is precisely to reclaim product waste, particularly rubber sourced from discarded tires - a product challenging to dispose of conventionally. The 4R principle of the circular economy (reduce, reuse, recycle and recover), which include a set of strategies aimed at promoting sustainability and resource efficiency, has allowed us to explain the process we are going through (*Chrispim, 2023*). This framework represents an approach to manage resources and waste in a way that minimizes environmental impact and maximizes the value derived from materials. In fact, our business model involves reducing the consumption of resources and minimizing waste generation at the source, reusing materials by giving products a second life, and recycling products that have reached the end of their conventional life cycle, fostering a sustainable approach to resource utilization. Furthermore, a significant aspect of our business involves its localization within Portugal. Our strategic choice to collaborate with suppliers situated within the same country underscores our commitment to minimizing carbon emissions, not only in production but also throughout the entire supply chain. These attributes position Circle as a business attuned to contemporary challenges, striving to develop a product that addresses relevant environmental challenges.

Innovation is a key component of our shared goal. We think it is crucial to stay on the cutting edge of sustainability and technology. We are committed to continued research and

development, constantly looking for innovative methods to enhance our product and decrease its impact on the environment. Achieving our shared vision demands team alignment and every team member's input is valued and considered in the context of the group's overall goal thanks to our open and collaborative work environment. Circle's goals go beyond short-term success: in the surf industry, we want to leave a legacy of sustainability and environmental stewardship. Our long-term goal is to establish new benchmarks for environmentally aware surfing gear and encourage other companies to follow suit.

3. Identifying the problem

Waste reduction has emerged as one of the urgent global concerns requiring immediate attention in our effort to start a sustainable path (*Saseanu, 2019*). Particularly, the ever-growing mound of abandoned tires, which is becoming a significant source of pollution, is the focus of growing concern. Tires present complex problems with regard to the environment, economics, and technological advances due to their high flammability and composition (Mmereki et al., 2019). Surprisingly, Pieter Jan Kole's research from 2017 found that tires are among the most prevalent plastic pollutants on Earth, making up up to 10% of the micro plastics trash found in oceans worldwide (*Tik Root, 2019*). This estimate was even increased to a stunning 27% in later research by the International Union for Conservation of Nature (*Tik Root, 2019*).

a. Causes

We have learned that there is a complicated web of factors that contribute to the developing concern behind the tire waste issue. According to Seaseanu et al. (2019), one of the main causes contributing to the problem is the general lack of education and awareness surrounding responsible waste management. Many people and communities continue to practise negligent waste management since they are unaware of the negative environmental effects of

inappropriate tire disposal. As the world becomes more interconnected, more tires are produced and used, which generates more garbage (*Saseanu, 2019*). The global tire industry is estimated at 19.25 million tonnes of production in 2019 and is anticipated to grow at 3.4% compound annual growth to 22.75 million tonnes in 2024 (*Barnhart and Gibson, 2019*). The need for tires increases in direct proportion to the growth of the tire waste issue in the automobile industry. Moreover, both individuals and corporations may find the cost of proper tire disposal to be unaffordable. Tire recycling and proper tire disposal typically come with costs, which may make consumers choose inappropriate options (*Saseanu, 2019*). Additionally, there are frequently significant absences of strict repercussions for inappropriate tire disposal practises. Since there are no fines or punishments, using careless tire disposal practises have no real ramifications for people or enterprises (*Saseanu, 2019*). In some places, inadequate recycling infrastructure and waste management practises make the issue worse. These systems frequently have trouble handling the enormous amounts of discarded tires, which results in incorrect disposal and landfilling (*Mmereki et al., 2019*). This can make it difficult to dispose of tires responsibly. People or organisations may use incorrect disposal techniques when they have limited access to these facilities (*Mmereki et al., 2019*). According to Mmereki et al. (2019), the lack of recycling or repurposing incentives may deter people and businesses from taking part in sustainable tire disposal programmes. The market for tire-derived products, such as crumb rubber, has not always kept up with the supply of discarded tires. This mismatch may result in an overabundance of tires without a defined recycling destination (*Saseanu, 2019*).

b. Consequences

The effects of the tire waste issue are extensive, having an impact on various facets of our planet, including social, environmental, and health-related issues. Non-biodegradable tires that have been discarded cause dangerous chemical releases into the air, soil, and water, disrupting

ecosystems (*Ecogreen, 2021*). The equilibrium of our natural habitats may change as a result of the extensive effects that these substances may have on plant and animal life. The chemical emissions from tires directly endanger human health. Tires release pollutants when they break down, which can have an impact on the water we drink and the air we breathe. In areas close to tire disposal facilities, these pollutants have the potential to cause respiratory disorders as well as other health problems (*Ecogreen, 2021*). Our carbon footprint increases as a result of the methane gas emissions from discarded tires (*Ecogreen, 2021*). Methane is a strong greenhouse gas, and its release exacerbates environmental problems related to global warming. Tire fires, which are frequent as a result of tires' high flammability, may cause deforestation (*Ecogreen, 2021*). In addition to destroying trees, these fires also release acidic smoke that is hazardous to both people and the environment. Ecosystems may suffer additional harm from the oily waste left behind. Inappropriately disposed tires provide as a breeding ground for mosquitoes that transfer diseases including the West Nile Virus (*Ecogreen, 2021*). As a result, populations close to tire disposal sites face increased health concerns. Illegal dumping occurs when tires occupy important landfill space, especially in low-income communities (*Ecogreen, 2021*). This not only makes less land available for other uses, but it also causes property prices to decline, resulting in socio-economic inequities. Moreover, tire trash influences the oceans as much as on land. Incredibly, tire abrasion produces 500,000 tonnes of plastic debris per year just in Europe (*Sieber-Gasser & Sanchez, 2022*). These tiny plastic particles endanger human health and disturb marine ecosystems. Tire wear particles (TWP) have been found in even the most remote parts of the world's oceans, contributing significantly to the problem of microplastic pollution (*Sieber-Gasser & Sanchez, 2022*). TWPs are responsible for almost one-fourth of the microplastics in seas, endangering the conservation of land and marine ecosystems, clean water, and human health SDGs (*Sieber-Gasser & Sanchez, 2022*).

4. Connecting with sustainability

Sustainability as a concept is closely linked to the Circle journey. We believe that in order to make a meaningful and enduring impact, any business - especially one that was founded out of environmental concern—must follow the principles of sustainability. Sustainability, in our opinion, starts with the environment. By turning tires into practical surf pads, we are promoting the circular economy, which reduces the demand on natural resources by repurposing materials rather than wasting them.

Our commitment to sustainability extends beyond the creation of eco-friendly surf pads. We are dedicated to ensuring the sustainable operation of every facet of our business. We are dedicated to lessening our environmental effect and promoting environmentally conscious company practices, such as energy-efficient production methods and ethical material procurement. Our mission is centered on raising awareness of environmental issues and encouraging positive change. We believe that by sharing our mission and our experiences with others, we could inspire them to reflect on their own actions and make more sustainable decisions. Together, we can make a greater impact and accelerate progress.

II. Crafting the opportunity

1. From concept to eco-friendly surf pads

Although developed countries have made progress in this area by implementing more efficient innovative recovery and recycling methods and strict regulations regarding the management of used tires, waste tires' management has not received enough attention in many developing countries, and the processing, treatment, and disposal of waste tires are still in their infancy. There is therefore room for improvement in this area. We made the decision to start Circle to lessen the negative effects that used tires have on people's health, the environment, and socioeconomic issues.

Circle is an eco-friendly brand creating surf pads, also known as traction pads, using the rubber from these old and not managed tires thrown away. A traction pad is a piece of foam attached to the tail of a surfboard to prevent the back foot from slipping off. The traction pad's primary purpose is to increase the rear foot of the surfer's grip and to reduce wax usage. Learning how to position their back foot correctly on the board can be an excellent alternative for beginning surfers. Moreover, the surf pad is self-adhesive, adheres to the surfboard, and cannot be removed after application (*For more information, see Appendix C*). Therefore, Circle's goal is to increase customer satisfaction with sustainability and brand image while giving used tires a second chance by transforming them into surf pads.

2. Value proposition

As we embarked on our journey to create Circle, we conducted thorough investigations into the market landscape and identified existing commendable alternatives. However, the gap waiting to be filled is significant since surf pads made of rubber, one of the most performant materials when it comes to flexibility and robustness are not existing yet. By supporting a

sustainable material and prolonging the tire life cycle, this strategic choice strengthens the value proposition and supports the circular economy. It presents a strong, high-performing material that draws inspiration from the longevity of rubber, which is used in many different applications, including shoe soles.

This unique technique serves as the foundation for our value offering. Circle stands as the pioneering brand in the eco-friendly surf pad industry, not solely because we were the first to adopt this ground-breaking idea, but also because we are dedicated to having a significant positive environmental impact. Our goal is to address the urgent issues surrounding the disposal of used tires, which goes beyond simply differentiating our products. We are aggressively lowering the health, environmental, and socioeconomic problems related to tire trash by reusing these waste products. Customers who are concerned about the environment are seeking goods that share their beliefs and are drawn to our strategy. We are not just offering surf pads; we are providing a solution to a global problem.

The core principles of Circle are innovation, sustainability, and positive environmental impact. This is demonstrated in our value proposition. It propels us to the top of the market, distinguishes us as forerunners in the eco-friendly surf pad sector, and positions us to have a significant impact on the world.

III. The market

1. Identifying the market

The initial stage in launching our business involves identifying the industries that align with our unique concept. As a new venture dedicated to crafting eco-friendly surf pads from recycled, low-impact materials that boast a minimal carbon footprint, our primary target market is the surf industry. To gather information and data on the estimated worth of the worldwide surfing business, we have started conducting our research exploring the global surf industry.

According to the Statista Research Department (2022), the size of the worldwide surfing market in 2022 was 4 billion U.S. dollars. By 2027, this amount has been expected to increase by 4.8 billion U.S. dollars, or 4% on a compound annual growth rate (CAGR) basis. Therefore, the forecast offers valuable insights into the financial prospects of the worldwide surfing sector, predicting a profitable future for the industry and highlighting the potential for growth in the coming years. Surfing, once seen as a niche 'cool' sport practiced by long-haired hippies on the iconic waves of Malibu Beach in California or the shores of Hawaii, has undergone a significant transformation. The statistics indicate a surge in interest in surfing, fueled by factors like increased media coverage and greater global recognition. Moreover, the sport's growing accessibility, driven by the tourism industry, has opened it up to a wider, more diverse audience. This evolution of surfing from a counterculture pastime to a mainstream sport underscores the enormous potential for Circle to capitalize on this expanding market.

Surfing is a global cultural phenomenon, with a presence in numerous regions across the world. It has deep-rooted traditions in iconic surfing hubs like California, Australia, Hawaii and Indonesia. However, with more than 47% of global sales in 2020, North America had the greatest revenue share (*Grand View Research, 2022, Surfing Equipment Market Size Report, 2021-2028*).

This sport, this hobby or even this lifestyle is currently expanding into new and diverse markets, effectively reaching out to fresh audiences, particularly in regions like South America, Asia, and parts of Europe. France and Portugal emerge as noteworthy examples of surfing's rapid growth within the continent. A 2020 survey estimated that France, recognized as one of the world's premier surfing destinations, boasted approximately 650,000 surfers (*Grand View Research, 2022*). This data underscores the anticipated significant growth of the sport in Europe in the coming years. Portugal has experienced a dramatic increase in popularity as a coveted surfing destination, thanks to its renowned spots like Ericeira and Peniche. The village of Nazaré has captured immense attention from the global surf community for its record-breaking waves, positioning it as a top destination for thrill-seeking surfers around the world.

In conclusion, the global surf industry is a dynamic, vibrant, and diverse market brimming with opportunities for growth and development. Moreover, the industry is witnessing a pronounced shift towards sustainability and eco-friendly consumption, reflecting a broader commitment to environmentally responsible practices and ensuring access to the sport for a wider range of enthusiasts (*Grand View Research, 2022*).-This combination of characteristics makes the surf business a dynamic and ever-evolving field that continues to enchant both players and investors, offering an exciting future driven by waves, innovation, and environmental conscience.

a. Primary research

While we have indeed identified numerous competitors in the market, the pressing nature of the demand for our environmentally conscious surf pads remains a central focus. This urgency is partly attributed to the fact that existing competitors either fail to deliver high-performing surf pads with a reduced environmental impact, or if they do, they often come at a premium

cost and utilize alternative materials like vegan-friendly and eco-conscious cork (Jam Traction), which may compromise performance in the water. As Veit Schumacher noted in his 2020 article, customers are increasingly willing to invest more in products crafted with responsibility and environmental considerations in mind. This emerging market indicates a real potential for customers to transition from their current big brand to our product.

We conducted an extensive study as a cornerstone of our project development to assess the level of interest and the willingness of potential clients to invest in our product. In our survey, 44% of participants said they were highly seeking for eco-friendly products during their buying choice, highlighting this rise in environmental awareness. The survey's outcome overwhelmingly favored our endeavor (*Refer to Appendix D: B2C Survey*). To maximize our response rate and, consequently, gather more extensive data on our potential future clients, we distributed the survey to surfers across diverse countries. Our B2C study unveiled that the majority of respondents, spanning ages 21 to 25, engage in surfing roughly once a month and typically replace their traction surf pads annually. Despite 83% of participants being uninformed about the environmental implications of improper tire disposal, a notable 86% exhibited a keen interest in purchasing our surf pads. This substantial interest can be attributed to the fact that 80% of respondents expressed a high level of concern for sustainability and environmental issues.

We have received overwhelmingly positive feedback about our future customers' willingness to pay. A remarkable 87% are ready to pay more for our product than they would for a traditional surf pad. Given our strategy to enter the market with prices below the average, it was encouraging to discover through our survey that many customers are willing to spend €40-50€ for a product that meets modern sustainability standards. This insight supports our initial

focus on market penetration, with the potential to generate significant margins. Importantly, our commitment to addressing environmental issues and reducing environmental impact significantly influences customers' readiness to pay a premium.

b. Secondary research

Portugal's economic landscape has been a hot topic in Europe recently. The country's innovation and entrepreneurial spirit, fueled by challenging economic times, have shown remarkable resilience and are likely to continue (*Grand View Research, 2022*). Surfing has been a key player in this transformation, evolving dramatically in recent years. The rise in national surfers, surf competitions, and renowned surf locations has been striking. Portugal is now a global hotspot for surfing, drawing record numbers of tourists and media coverage. This surge in popularity has boosted local businesses and created more job opportunities. Currently, the direct economic impact of surfing on the country is estimated to exceed €400 million annually (*Moore, 2022*). Our discussions with key industry figures provided insights into the impact of the sport's growth on the economy, job market, and tourism. We also delved into the prevailing trends in the retail sector. Through those research and different surveys, it became evident that there is substantial market potential for Circle. As a Portuguese based brand, with our market penetration's strategy, we are well-positioned to capitalize on the current favorable economic conditions and make a successful enter into the market.

In order to identify the size of this interesting market in which we will implement our new product, we have decided to use the bottom-up approach. (*SurfTotal 2008, Alfarroba 2008, FPS 2008*). In Portugal, updated research and surveys since 2008 indicate a consistent growth in the surfing population. Surfing, which has been part of the Portuguese sports scene for over 40 years, shows an upward trend in participation. Currently, it is estimated that between 62,500

to 87,500 individuals surf regularly in the country, at least once a week, reflecting a significant increase from previous figures. This growth rate has been estimated at approximately 21.25% to 27.5% annually (*Bicudo and Horta, 2009*).

The breakdown of these surfers, categorized by their skill levels, reveals a diverse surfing community. It is noteworthy that a substantial portion of the Portuguese youth, particularly those aged between 15 and 35, have tried surfing at least once. However, regular surfing activity, defined as surfing weekly, is engaged in by roughly 3.75% of the young population. Furthermore, members of the Portuguese Federation of Surfers constitute about 1.25% of the total 553,750 athletes registered across various sports federations in Portugal. This data underlines the growing popularity of surfing as both a recreational and competitive sport in the nation (*Federação Portuguesa de Surf, 2022*).

Since one of our primary source of income would be via the internet, we are aware that people's busy lives are leading to more people participating in extracurricular sports and making more purchases online. Revenue for the Sports Equipment market is anticipated to expand steadily from around US\$150 billion in 2022 to reach US\$216 billion in 2028. Moreover, according to the Statista research department (2023), the global e-commerce revenue of the sports and outdoor industry is forecast to increase gradually until 2027, peaking at roughly 119.10 billion U.S. dollars. These findings suggest a vibrant and attractive business environment for companies involved in the sports equipment industry. There is considerable potential for development and innovation due to the rise in the demand for sports-related items and the transition to online purchasing. The business is likely to experience ongoing growth as consumers continue to embrace active lives and sports. Hence, for companies hoping to profit from the booming sports equipment sector, this offers a positive outlook.

c. Total Addressable Market

Any business that intends to succeed must first fully comprehend its Total Addressable Market. It is imperative to gain insight into and make informed assumptions regarding the scale of the entire audience that holds an interest in our product. Initially, we have prioritized understanding our core audience, educated surfers. This deliberate focus aligns with our targeted approach for the initial phase. However, in our pursuit of scaling our enterprise, we have planned not only to extend our reach beyond Portugal but to encompass other European nations with our online future selling stream.

According to data from SurfTotal, Alfarroba, and FPS (2008), Portugal's surf industry features over 100 surf schools and 200 surf shops, each with annual revenues ranging from €200 thousand to €500 thousand. The industry is further bolstered by 10 surf magazines and 20 surfboard manufacturing facilities. With each dedicated surfer spending about €2,000 to €3,000 yearly on gear and travel, the industry's total cash flow in Portugal is estimated at €150 million to €200 million, highlighting its significant economic presence. Furthermore, there are approximately 300,000 to 500,000 individuals surfing at least once a year in Portugal. This vast number of enthusiasts expands our Total Addressable Market (TAM) beyond local borders, especially with our focus on online market optimization through SEO, Google ads, and targeted social media advertising. This approach opens up possibilities for reaching customers even in distant regions like Eastern Europe.

However, in defining the market scope, Circle's immediate strategy zeroes in on key Portuguese regions renowned for their surf communities - Lisbon, Carcavelos, Costa de Caparica, Peniche, and Ericeira. These regions collectively harbor a substantial population, predominantly consisting of active surfers or individuals displaying an affinity for surfing culture and its

lifestyle. Our estimation of the potential customer base is rooted in meticulous market research and comprehensive demographic analysis. We anticipate a considerable segment of this population to align with our target market, derived from an assessment of surfing prevalence in these areas, the community's involvement in outdoor and water sports, and the increasing trend of environmentally conscious consumer behaviors.

This targeted approach enables us to focus our marketing and sales efforts more effectively, ensuring that we reach the most likely buyers of our eco-friendly surf products. With a concentrated effort in these surf-rich regions, we aim to establish a strong brand presence and customer base, which can be leveraged for future expansion both nationally and internationally. This strategic market entry is designed not only to optimize our immediate sales potential but also to lay a solid foundation for sustainable growth and scalability of Circle.

2. Competition

Our research into the surfing equipment market, particularly surf traction pads, reveals a highly competitive industry dominated by major companies. The Surfing Equipment Market Analysis and Segment Forecast to 2030 report highlights key players like Billabong, Quiksilver, JS Industries, Firewire, Rip Curl, Rusty Surfboards, Creative Leisure, FCS, Channel Island, Dakine, and Roxy. These brands collectively hold about 80% of the surf pad market share (*Grand View Research, 2022*). This dominance is attributed to their expansive global distribution networks and established customer bases, signifying a formidable challenge for new entrants aiming to penetrate this competitive space. Understanding and navigating this landscape will be imperative for our emerging brand to carve a niche and differentiate ourselves within this highly competitive market.

We decided to start the analysis with Quiksilver, a renowned surf brand known for its wide range of surf-related products catering to all skill levels. Quiksilver's surf pads, priced between €39 and €57, are designed to provide reliable traction and grip, available in various shapes, sizes, and patterns to suit different surfboard designs and user preferences. While the brand is recognized for quality, its products, composed of 85% EVA, 13% 3M Glue, and 2% PVC, lack environmentally friendly alternatives (*Quiksilver*). This positions Quiksilver less favorably in terms of environmental impact, despite aligning with the market's average price for surf pads.

Nonetheless, numerous companies in the market are steering towards a different trajectory, aligning their offerings more closely with market demands. These companies not only provide standard product lines but also introduce environmentally friendly solutions. They offer an alternative product range crafted from materials that boast a reduced carbon footprint. To illustrate this point, we conducted in-depth research on two other prominent global brands in the surf industry, Creatures of Leisure and FCS.

Creatures of Leisure, a prominent name in the surfing industry, is known for its premium surf accessories and equipment, especially traction pads. Recognized for innovative and high-quality products, the company has established a global market presence. Recently, they've shifted towards more sustainable practices, incorporating eco-friendly materials in their production processes. This move aligns with the growing trend of environmental responsibility, catering to surfers who are conscious about their ecological footprint. Their product range, designed to fit various surfboard shapes and preferences, includes a variety of traction pads in different sizes and designs. Price-wise, Creatures of Leisure's pads range from \$42 to \$89, with their best-selling 3-Piece Pad standing out for its eco-friendly features. This pad is notable for its biodegradability and recyclability, featuring a 7mm Teardrop Wide Arch Bar, a 30mm

Alpine Kick, and 3M Adhesive, measuring 300mm in both length and width. In line with their commitment to the environment, some of their pads are made with reduced industrial waste, recyclable packaging, and EcoPure materials, furthering their dedication to sustainability.

In our analysis of FCS, a leading name in surf accessories, we noted its range of surf pads made predominantly from EVA foam, known for durability and comfort. These pads come in various styles to suit different surfboards and preferences and are popular for their quality and reliability among both professional and casual surfers. FCS's prices for surf pads range from €40 to €52, with most being 3-piece EVA models.

Significantly, FCS has introduced an eco-friendly line using sugarcane-based bio-foam, priced at €40. This new line maintains the essential features of their 3-piece grip but with a focus on sustainability. While this eco-line positions FCS competitively in terms of price, there are considerations about the performance and longevity of bio-foam compared to traditional materials. The strength and durability over time of these eco-friendly pads might differ from their conventional counterparts.

The current market landscape clearly indicates that eco-friendliness is no longer a luxury but a necessity. Companies that fail to incorporate sustainable products into their offerings risk falling behind in an increasingly environmentally conscious market. By adopting a gradual yet strategic approach, leveraging the insights and support from our key partners, and valuing the invaluable feedback gathered over recent months, Circle is well-positioned to carve out a niche in this competitive sector. Our commitment to sustainability, combined with a keen understanding of market dynamics, sets us on a promising path to capture and grow our share in the surf industry.

3. Go to market strategy and product market fit

Building on the B2B segment focus, we have decided a direct and personal approach to engage with surf schools in the Carcavelos, Cascais, and Costa Caparica regions. Recognizing the potential of these dozens of surf schools, which have been increasing in number since 2020, we see a valuable opportunity to establish strong local partnerships. Our strategy involves personally visiting these schools to initiate first contact, thereby forging a connection that transcends mere business transactions. Our proposition includes offering several of our surf pads directly to these schools, integrating them into their existing surfboard fleets. This not only serves as an effective way to showcase the quality and appeal of our products but also helps to build local brand awareness organically. By having our surf pads used in real-world conditions, we provide both the schools and their students with tangible proof of our product's value.

This initiative can be seen as a pilot program, a model that can be replicated in other regions and surf markets globally. By demonstrating success in these key areas, we can establish a proven track record, making our proposition more attractive to surf schools in other Portugal surf areas.

The B2B segment includes surf shops as well that cater to surfers of all abilities. Surf shops represent a highly relevant target market, as the best places to buy gear related to surf may be found at surf stores, which draw a variety of surfers, from amateurs to experts, and frequently stock a wide range of goods. Targeting surf shops is an effective way to break into the industry, utilizing their influence and already existing clientele to bring our goods to the attention of more end consumers.

Expanding on our B2B strategy with surf shops, Circle's initial focus on the Lisbon area and its surrounding coastline is a strategic move designed to establish a strong local presence. With nearly 100 surf shops dotting this region, each offering a diverse range of surf-related products, we recognize the immense potential for fruitful collaborations. Notably, several of these shops are connected to major brands, like the Billabong shop in Ericeira, which signifies the area's importance in the surf retail landscape.

Our approach to engaging these surf shops is personal and hands-on. We plan to visit as many shops as possible, leveraging any existing representation in local surf schools or other retail outlets to build credibility and trust. By presenting our product in person, we aim to foster meaningful connections with shop owners and staff, sharing our vision of sustainability and quality.

Understanding the risks surf shops face when introducing new products, our strategy includes offering them samples of our surf pads. This allows shop owners and customers to experience the quality and appeal of our products firsthand, increasing the likelihood of a successful partnership. To further align our interests with those of the surf shops, we propose an initial pricing strategy that undercuts the market average. This not only shares the risk with our retail partners but also serves as an incentive for them to give our products prominence.

As a further step to solidify these partnerships and encourage sales, we have devised a unique promotional campaign. The idea is to create a friendly competition among our retail partners, rewarding the shop that sells the most Circle surf pads with a €500 prize. This initiative is designed to motivate the shops to actively promote our products, creating a win-win situation where their sales success directly contributes to our brand visibility and market penetration.

By prioritizing this local B2B approach, we aim to build a robust network that can serve as the foundation for future expansion. Our strategy is not just about making sales; it is about cultivating relationships and establishing Circle as a reliable, sought-after brand in the surf community. Once we achieve a strong foothold locally, we believe this model can be replicated in other markets, to potentially enlarge this model later in other Portugal surf areas.

Hence, collaborative access to local businesses presents a significant advantage, not only in expanding our reach but also in shaping and fortifying our brand image. The prospect of being represented in well-established local businesses carries immense potential for building a positive reputation and instilling trust among potential customers. By aligning ourselves with reputable enterprises, we not only enhance our visibility but also leverage the credibility and trust that these local businesses have already cultivated within their communities. This strategic collaboration becomes a valuable steppingstone in our journey to penetrate the market, fostering a positive brand image and engendering confidence among our target audience.

On the other hand, surfers represent the business-to-consumers target market (B2C). In this regard, further segmentations must be implemented as within this dynamic segment, we discern three distinct categories. First, the athletes or professional surfers who compete at the highest levels. Then, the free surfers who, while not engaged in competitive circuits, are significant influencers and often represent brands through their surfing endeavors. Lastly, regular surfers - individuals who engage in surfing activities with varying frequencies, ranging from occasional enthusiasts to those who practice the sport regularly, albeit without deriving their livelihood from it. This multi-tiered approach allows us to tailor our product offerings and engagement strategies to the diverse needs and aspirations of each subcategory within the broader surfer community. By recognizing and catering to the unique requirements of each

subcategory, we aim to create a comprehensive impact in the surfing ecosystem, establishing meaningful connections with surfers across different levels of expertise and commitment.

IV. Prototyping process

1. Funding grant

Around the mid-end of September, Circle's team came across an exciting opportunity through the daily communication channels at Nova SBE. It was an offer from the DESIS Lab at Nova SBE Haddad Entrepreneurship Institute – a prototyping fund. This program provides student teams with funding of up to €600 to create hardware or software prototypes. Additionally, it connects them with essential resources, tools, and mentors to help bring their innovative ideas to fruition. Consequently, we swiftly seized this opportunity and submitted our project proposal.

2. Application

For Circle, navigating the complexity of the grant application for prototyping was a major accomplishment. Throughout the process, we had to provide answers to a wide range of inquiries concerning our project, its present state, and its intended course. We described our vision, including the form, purpose, and expected success metrics of the prototype. Full of passion and commitment, our answers were sent in, and we then wished for the best (*For more information, see Appendix F: Grant Application Form*). Thankfully, we were selected a week after applying. The adventure and collaboration with Nova SBE Haddad Entrepreneurship Institute's DESIS Lab then started.

3. Grant's resources offerings

The funding provides access to several prototyping and start up resources, including the Nova SBE Digital Experience lab (D134), an area to study digital transformation and explore the potential of contemporary technology. We can also get assistance from DESIS Lab's mentors with design research, problem description, scoping, and prototyping possibilities. They

participate in our projects and are incredibly helpful. Additionally, DESIS Lab collaborates with FabLab, a community-accessible facility with industrial equipment like computers, CAV and CAM software-supported small and large milling machines, laser cutting and vinyl cutting machines, a 3D printer, an electronics bench, and other accessible and secure tools. Referencing us, our mentor approached them with a request for assistance and support. They consented to meet us and provide assistance. In the following sections of the report, more information will be provided regarding our partnership with FabLab.

4. Grant's participation requirements

Two workshops are required for us to attend during the procedure. The first took place October 3rd and was focused on prototyping. At that moment we did not start the prototyping process yet since we were waiting for theoretical knowledge about it. And it was a pivotal event for us as a team, since the beginning of the project early September we were mainly looking to create partnerships with suppliers, Labs or people with the knowledge to help us, but the workshop was an enlightening and interactive experience, highlighting the crucial role of prototypes in the project development process that at that time we haven't consider enough.

The workshop was led by an engaging and experienced instructor, Anne Laura Fayard, who began by emphasizing the fundamental importance of prototyping in the project management landscape. She stressed that prototypes serve as tangible representations of ideas, allowing teams to visualize, refine, and validate their concepts. By providing a concrete manifestation of abstract ideas, prototypes help bridge the gap between vision and execution.

One of the key takeaways from the workshop was the teacher's emphasis on creating multiple prototypes throughout a project's lifecycle. This iterative approach enables teams to explore

various design options, uncover potential flaws, and refine their solutions continuously. This process minimizes the risk of overlooking critical details and increases the likelihood of achieving a successful project outcome. We also learned about the significance of testing prototypes rigorously. The instructor stressed that testing is a crucial phase in the prototyping process, as it allows teams to gather valuable feedback from stakeholders, end-users, and other relevant parties. By soliciting feedback early and often, teams can identify issues, make necessary adjustments, and ensure that the final product aligns with user needs and expectations.

Furthermore, the workshop covered the importance of improving prototypes based on the feedback received during testing. This iterative improvement cycle is essential for enhancing the quality and functionality of the final product. By continuously refining prototypes, teams can address issues, optimize design elements, and ultimately create a solution that meets or exceeds project objectives. Through this workshop we have learned that the principles of creation and testing are integral to our project. Implementing these principles significantly contributes to project success and greatly enhances the user experience.

The second workshop for our grant project, which took place on October 26th at Nova SBE, was a valuable experience that further enriched our understanding of the prototyping process and highlighted the importance of collaboration and feedback. In this workshop, the six teams, including ours, were divided into two groups of three teams each. We found ourselves grouped with Obelix and Rehome, and our group was led by Anne Laure, while the other group of three teams was led by Maria, a guest mentor for the day.

The workshop commenced with each team providing an update on their prototyping progress. To facilitate this, we had prepared a prototyping board in advance, which served as a visual aid to help us convey our current stage in the prototyping process. During our update, we candidly

shared our challenges, with a specific focus on the issue we were facing concerning the creation of the mould. We explained that our current wooden mould could not withstand the high temperatures required for melting rubber. The feedback we received from the other teams and our mentor, Anne Laure, was particularly enlightening.

The teams in our group suggested exploring the processes used for products that also utilize recycled rubber, such as skates or shoes. This investigation helped us in shaping our unique process. As a result of their guidance, we delved into the shoe sector, allowing us to examine the shoe construction process and unveiling crucial details, such as the requirement for rubber to be melted at a precise temperature of 220°C and the exact methodology to achieve this. Moreover, they advised us to create an imperfect product using the moulds we had on hand and our available materials and then test it in the market. Following this, we could approach enterprises specializing in surf pad production to inquire about using some of their aluminium moulds, which can handle high temperatures effectively. Anne Laure recommended testing the design and shape of our pad using alternative materials like EVA. While not a sustainable option, it would allow us to assess the visual appeal of our product to potential customers. We later took her advice into consideration and ordered recycled Eva, which turned out to be a very suitable material.

The feedback received from both the mentor and fellow student teams, who approached our project with a fresh perspective, was invaluable. Their honest feedback emphasized the importance of seeking input from diverse sources rather than relying solely on the opinions of those we are familiar with, who might unintentionally share our biases.

In conclusion, the second workshop was a crucial step in our project journey, offering us a renewed perspective, practical advice, and a deeper appreciation for the power of feedback and iteration in the development of our recycled rubber surf pad.



Figure 1: Workshops and Showcase – Pictures by Alice Martins, from DESIS Lab at Nova SBE Archive

As part of the grant, a final showcase took place on November 28th. We had the opportunity to present our project and prototype at the university. It was open to the general public, allowing people to ask questions and observe the progress of our project as well as those of the other five teams. This was a chance for us to connect with individuals interested in our project who could potentially offer assistance. We were eagerly hoping to meet individuals interested in our project, particularly those with connections in the surfing world or a willingness to support our project. We also had the opportunity to meet Alessandro Fracassi, the co-founder of Surf Eye, an AI camera network that records every wave automatically. He expressed a great deal of interest in our idea and offered us a lot of insightful counsel, mostly on the price strategy. Given that we are a relatively new and unknown brand on the market and that our production expenses are cheap, he recommended that we lower the pricing. According to him, the starting prices we had decided upon—39 for B2C and 29 for B2B—were excessively expensive. We modified our approach in response to its feedback.

5. Funds

Finally, the award provided us with access to €600 in funding. They were split according to a 50/50 arrangement, which meant that half of the awarded sum (€300) was supplied upfront, and the remaining sum (€300) was given as compensation for our expenses. This financial

support was instrumental as it enabled us to create the mold and purchase the necessary materials, marking a pivotal step forward in our project's realization.

6. Prototyping process

a. Drawing prototypes

In the early days of October, our journey into prototyping took its first steps following an insightful workshop conducted by Anne Laure. Gathering at Benjamin's workspace, we armed ourselves with an array of tools and materials – paper, cardboard, scissors, glue, and more; and attempted to build some prototypes by hand. We delved into the process of visualizing our idea for the surf pad and sketched three distinct prototypes. We selected the simplest of the designs and attempted to construct a rudimentary, handmade version of it. The essence lay in creating a tangible product to present at our upcoming meeting with Andre Martins from FabLab. It was a pivotal moment that brought us onto the same page, forging a shared vision of the design we aimed to create.

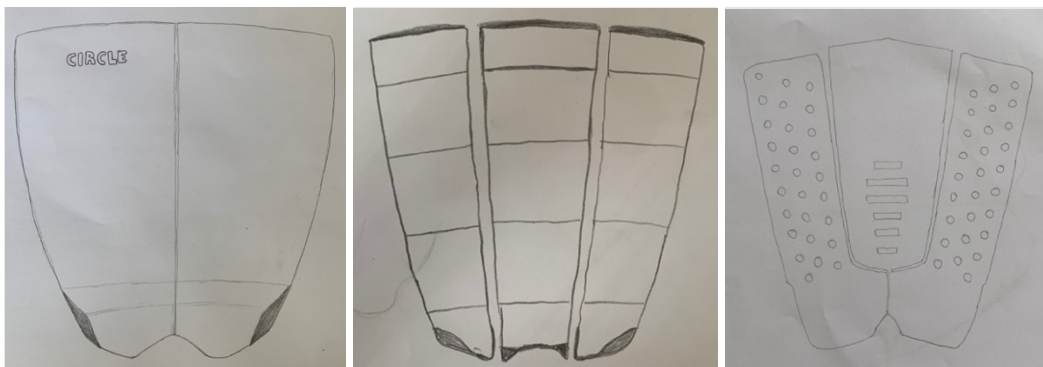


Figure 2: Drawing Prototypes Designs 1, 2 and 3 of the Surf Pad



Figure 3: Hand Made Prototypes 1 of the Surf Pad (from Design n1)

Simultaneously, we commenced brainstorming about a possible packaging solution. We explored existing packaging designs and tried to understand customers' preferences. We even ventured into sketching a packaging concept that could complement our product seamlessly. However, we realized that our primary focus at this juncture should be the prototyping of the surf pad itself. We collectively decided to table this discussion until we had a finalized prototype of the surf pad.

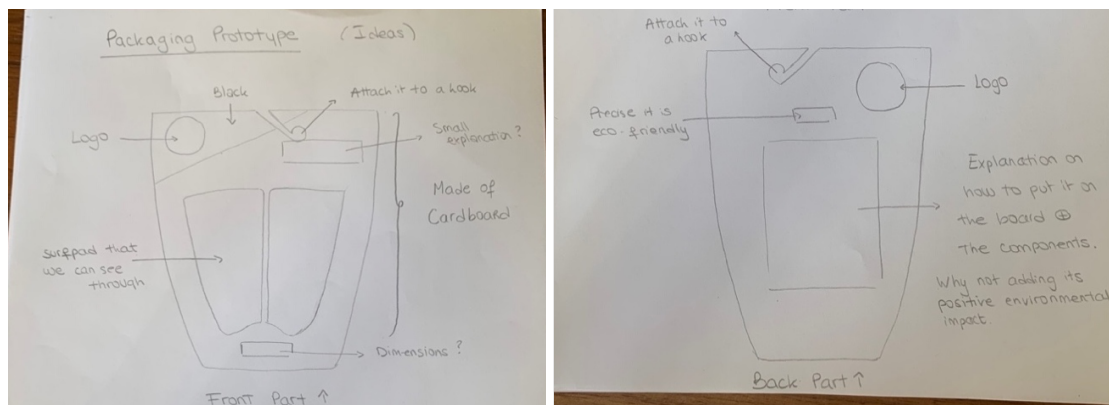


Figure 4: Drawing Prototype 1 of Packaging

b. Developing prototypes with OnShape

A few days later, we embarked on our inaugural visit to FabLab, a pivotal step in our journey. Welcomed by André Martins, the project coordinator. Our initial interaction began with a brief

catch-up meeting, providing the opportunity to review the progress we had achieved in the preceding days and set our collective objectives for the project. During the meeting, he outlined our current priorities – first, creating the prototype at FabLab and second, sourcing all the necessary materials for when the mold would be prepared and ready for use. He introduced us to OnShape, a comprehensive product development platform that unites all the essential tools required to transform a concept into a tangible product. As we delved into our first OnShape class, André shared his knowledge of the software. OnShape, designed to empower businesses of all sizes in transforming their creative ideas into tangible products, presented a robust yet flexible platform.

Throughout the day, we explored the extensive capabilities and tools that OnShape offered, an experience akin to putting digital ink to virtual paper. We began shaping the concept of our project, simultaneously tapping into the software's potential. Then, armed with a popular surf pad, which served as our indispensable reference model, we embarked on a complex journey toward creating our prototype on OnShape. This surf pad took center stage as we delved into the intricate process. Our foray into prototype creation commenced with the meticulous conceptualization phase, marking the inception of our adventure. Employing OnShape as our trusted instrument, we embarked on the methodical process of measurement and experimentation. Continuously comparing our progress with the acquired surf pad, we devoted hours to testing various forms and iteratively refining our design.

Simultaneously, we launched an assertive campaign to forge crucial collaborations with other suppliers, including EcoIberia, Flexospuma, and Newstep. Our objective was to secure samples of essential raw materials such as Rpet, EVA foam, and glue. This strategic move aimed to ensure the availability of an adequate raw material supply for the forthcoming testing phase, as

elaborated further in our business model. As we progressed, the harmonious collaboration between supply chain management, design, and practical experience laid the groundwork for the successful realization of our prototype. André's leadership and the invaluable support of our chosen suppliers propelled us further toward the actualization of our visionary project.

In the course of shaping our surf pad prototypes using OnShape, we explored two distinct variations, each distinguished by its unique top layer design. Our initial approach entailed a relatively simpler design featuring lines on the pad's surface (OnShape Prototype 1). However, recognizing that this design might compromise quality and anti-slip performance, we showed the online prototype to some of our surfers' friends and they advised us to transition to a lozenge-shaped one to be more performant (OnShape Prototype 2). For a comprehensive insight into the progress made during the prototyping phase, we invite you to *peruse Appendix G: Album of Prototyping Process*.

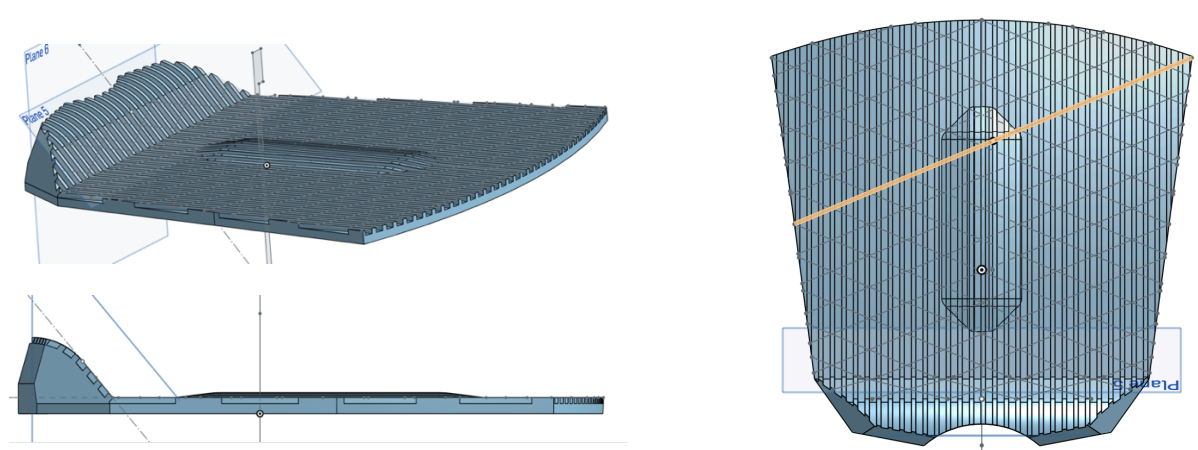


Figure 5: OnShape Prototype 1

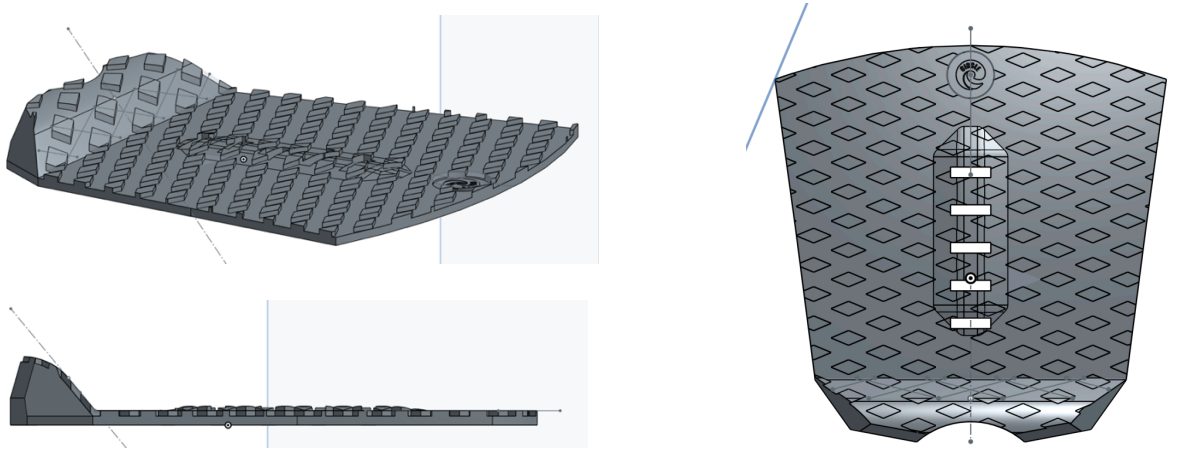


Figure 6: OnShape Prototype 2

c. Testing Materials and Creating mould

As previously mentioned, we opted for the second prototype design to serve as the basis for our mold, anticipating improved quality. The crucial task at hand was selecting a suitable material for crafting the mold, considering both the lab's equipment limitations and our budget constraints. After careful consideration, we arrived at the decision to use wood for its cost-effectiveness and compatibility with the lab's 3D printing equipment. Consequently, we proceeded to fabricate the mold.

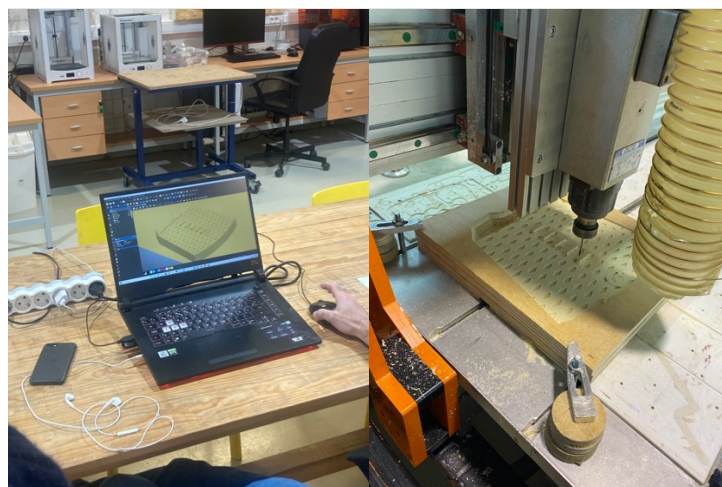


Figure 7: Creating the mold

Simultaneously, during the mold creation process, we initiated a series of tests to assess material compatibility and the mold's resistance. In order to test various materials, we made multiple tiny wood molds. In addition, we explored optimal temperature and duration for rubber melting, among other factors. We also experimented with a silicone mold, that we had previously purchased from a kitchen supply store, recognized for its potential advantages, albeit temporarily deemed cost prohibitive. Further experimentation involved various material combinations, including pure rubber, rubber with R Pet, and rubber with EVA (*refer to Appendix H: Materials' Combination in Molds*).



Figure 8: Testing several materials combinations and oven temperature/time

Our assessments revealed that, regrettably, wood was not the ideal mold material for surf pads. Wood proved insufficient in withstanding the requisite rubber-melting temperatures, unlike silicone or aluminum molds, which would have been the preferred options. However, constrained by budget and time limitations, we elected to persist with the wooden mold and proceeded to test the resulting product. This decision acknowledges that an imperfect product enables us to introduce it to potential customers, gather valuable feedback, and refine our offering in response to real-world market conditions.



Figure 9: Wood mold

Subsequent to this phase, and prior to direct implementation in the final mold, we conducted a series of experiments to identify the optimal substance for the mold's base, preventing materials from adhering to it. Various products, including lubricant, climbing powder, oven paper, and aluminum, were tested, with climbing powder proving to be exceptionally effective.

Furthermore, rather than immediately proceeding with the rubber granules, a deliberate decision was made to craft an initial pad using EVA. While the ultimate goal was to integrate rubber into our pads, our initial focus was on producing a pad comprised solely of EVA for preliminary testing with potential customers. Acknowledging the potential damage rubber could inflict on the wooden mold, our emphasis was on presenting an aesthetically pleasing pad to potential customers, an approach endorsed by Anne Laure during the second workshop. Therefore, we experimented with EVA n25 and climbing powder, yielding highly satisfactory results. Expanding our efforts to larger molds, more representative of the pad dimensions and coated with climbing powder, we explored the combination of EVA n25 and rubber, resulting in unexpectedly excellent outcomes. Recycled EVA n25 proved ideal for the pad, imparting flexibility, solidity, and water resistance to the prototype. Additionally, placing rubber at the mold's base enhanced the pad's grip significantly. Hence, the idea of exclusively presenting a

pad made solely of EVA n25 to customers for aesthetic appeal became unnecessary, as the combination of EVA n25 and rubber produced an equally pleasing result.



Figure 10: Trial in a wood mold covered with climbing powder and having the dimensions of a pad with EVA n25 & Rubber.

d. Testing in the pad mold

With the mold ready for use, the subsequent phase involved experimenting directly within the mold, as opposed to relying on silicone cups or small wooden molds. As previously explained, employing EVA n25 and positioning rubber strategically at the base of the mold to maximize product quality produced encouraging results. Even though the final pad had some imperfections particularly in the tail area where there were visible holes, the overall grip and water resistance were excellent, which may be due to the rubber's thoughtful placement. It soon became obvious that wood could not hold up to the level of accuracy needed to make our surf pads due to its inherent limits. Due to the limitations of the original mold, the surf pad included flaws such as holes and uneven lozenge shapes. As a result, we decided to create a second prototype for testing as we knew that the lozenge shape—while not perfect in this version—would work well in the finished product. However, we realized that an aluminum mold was required to produce this exact shape. We quickly came up with a fresh, straightforward design,

made a wooden mold, and started building. Despite the less-than-ideal design, the results were enhanced, exhibiting great grip, flexibility, and resistance. This version, devoid of flaws, was selected for the product validation stage in order to collect feedback from prospective B2C and B2B clients.

7. Product Validation

Context

To undertake the validation process for our product, we devised a multifaceted approach, encompassing various tests for our traction pad. Our primary aim was to validate both of our targeted segments: the B2C sector, inclusive of professional surfers, free surfers, and daily surfers spanning from beginners to advanced levels, and the B2B sector, comprising surf schools, surf shops, surf associations, and surf collectives. The methodological framework employed was straightforward yet comprehensive. We conducted a series of diverse interviews, integrating visual aids and incorporating a dedicated testing phase. In the context of B2C tests, the logic was crystal clear – what better way to assess a surf product than by subjecting it to authentic, real-world conditions? Thus, we positioned our prototype on a surfboard belonging to Circle, and extended invitations to both familiar friends and unfamiliar surfers in Carcavelos, asking them to ride a few waves on the same board for us. (*Refer to Appendix M: Product Validation Survey & Results*).

The interview process was divided into two distinct parts. Initially, participants in this review engaged with our prototype only through observation, without actually trying it. We later collected feedback from the same individuals following their surfing session with our traction pad. This dichotomy aimed to provide two different perspectives, inspired by the lessons from our thesis work, highlighting the value derived from comparing two distinct options to attain a

more nuanced understanding. Shifting the focus to the B2B component, the validation process demanded engaging in meaningful conversations with key players in the surf industry, specifically targeting business professionals. Following a thorough analysis, we discerned that establishing connections with owners of surf shops and surf schools proved to be a more accessible avenue. This strategic choice was grounded in the realization that these entities represented a substantial portion of the surf market, rendering them pivotal stakeholders in the validation of our product.

a. B2C ANALYSIS

« Surfers rely mostly on design and performance »

After conducting numerous interviews at the beach and visiting surf-related businesses, we have gathered sufficient data to formulate the final draft of our product validation. In assessing the product itself, we observed two distinct perspectives—one before the test and one after the test.

Initially, we noted varying opinions among the 15 surfers interviewed. About 46.7% believed that performance was the principal aspect of a traction pad, while 26.7% considered design and sustainability to be the most important factors. *(refer to Appendix M: Product Validation Survey & Results - Graph 1)* Regarding the initial impression, skepticism prevailed, with many expressing uncertainty about purchasing the product if seen in a shop. One surfer remarked, "I don't know, the design doesn't look attractive, but I'm intrigued by the fact that you use tire granules to make the grip." The design of our prototype emerged as a focal point of concern, with 40% of surfers rating it 5 out of 10, 26.7% giving it a 6/10, and four surfers rating it below 5/10. *(refer to Appendix M: Product Validation Survey & Results - Graph 2)*

Conversely, when asked about the idea of using rubber, 100% of the surfers expressed satisfaction and curiosity, especially regarding the sustainability feature. This positive response allowed us to proceed and convince them to conduct water tests. The initial part of the interview

highlighted that surfers are primarily attracted to design and performance when considering a traction pad. However, it also revealed a weakness in our prototype's design, suggesting that a more visually appealing product could attract a broader audience.

Post-test, there was a noticeable shift in mindset regarding our product. Surfers were particularly impressed with the performance of our traction pad, giving it an average rating of 8.1/10 for enhancing control and maneuverability on the surfboard (*refer to Appendix M: Product Validation Survey & Results - Graph 3*).

The grip, derived from recycled rubber collected from old tires used in the first layer, stood out as a strong point. Comments like "The grip is amazing; my foot was really stuck to the pad, providing good grip during maneuvers" emphasized the potential of our adherence features.

To further emphasize performance, 78.7% of surfers found the Circle traction pad comfortable during maneuvers (*refer to Appendix M: Product Validation Survey & Results - Graph 4*).

However, we acknowledged the need for improvement in our arch bar system, which received a grade of 5.1/10. As for the resistance of our product, all interviewees unanimously agreed that the pad is durable, resistant, and the glue is effective in water.

While acknowledging the future challenges in the design and graphics aspect, we believe that the performance of our product, particularly in terms of grip and durability, represents a strong feature that sets us apart.

b. B2B ANALYSIS

« Market trends, sustainability and quality »

In evaluating the business aspect of our validation process, we uncovered valuable insights from the interviews conducted with various industry professionals. Notably, 45.5% of the businesses interviewed regularly introduce new articles monthly, and a significant 63.6%

consider the trend market as the paramount factor influencing their decision to add a new product to their inventory (*refer to Appendix M: Product Validation Survey & Results - Graph 5*).

These interviews revealed that trends are shaped by innovations in design and performance, sustainability, and brand recognition. Salespeople in the surf industry weigh numerous factors when selecting new products, with a majority emphasizing a visually appealing product or a compelling design, followed by performance and sustainability. Aligning with our findings from surfer interviews, our strength lies in performance and sustainability, while design remains an area for improvement.

Among the 11 business professionals interviewed, a noteworthy 81.8% expressed openness to envisioning a partnership with Circle in their shops or schools.

The remaining respondents, although uncertain at present due to the absence of a finished product, expressed potential interest contingent on reaching a peak of performance and further refinement in design. This feedback underlines the potential of our product in the eyes of industry stakeholders, provided we enhance our design elements.

Importantly, all interviewees displayed a keen interest in eco-friendly products within the surf industry. This sentiment aligns with the question assessing the potential success of eco-friendly products compared to traditional alternatives. It underscores the market potential for our idea and product, as our brand image strongly emphasizes sustainability—a trend currently gaining prominence in the market.

In addressing the B2B validation of our pricing strategy, our current base price of €14.9 for B2B businesses appears well-positioned. Survey results indicate that 45.5% of businesses would be willing to pay between €21 and €25, 27.3% between €16 and €20, and another 27.3% between €10 and €15. This positioning places our brand in a favorable pricing range within the

market, validating the effectiveness of our pricing strategy. (*refer to Appendix M: Product Validation Survey & Results - Graph 6*).

In summary, the business validation process has provided crucial insights into market trends, preferences of industry professionals, and the potential success of our pricing strategy. As we continue refining our product, particularly in design, the positive reception from businesses signals a promising trajectory for Circle within the surf industry.

FINAL TAKE-AWAYS

In conclusion, this phase of work closely aligns with the initial assumptions and hypotheses, offering us real and conclusive insights into our project. While these interviews have illuminated the challenges ahead, they have also affirmed that we are on the right path. Concerning surfers, an intriguing finding surfaced: the initial visual impression of our product did not captivate their interest, largely due to design considerations. A substantial 73.3% of surfers recommended focusing on the graphic aspect of our surf pad. The primary takeaway from this revelation is the imperative need to enhance the design of our product to make it more visually appealing.

However, the subsequent phase of interviews provided a counterbalance, shedding light on our project's strengths. Notably, our grip, crafted from recycled rubber extracted from old tires, emerged as a standout feature, delivering exceptional adherence even in water conditions. This unique selling point distinguishes us in the market. Additionally, the durability of our product received commendation, with the pad demonstrating resilience against the pressure generated by waves, showcasing robustness, and boasting an efficient adhesive.

In essence, while the journey ahead may be extensive, these interviews have clarified our focus areas, emphasizing the critical importance of refining the design to align with market preferences. Simultaneously, the identified strengths in grip and durability serve as pillars of confidence, indicating that our product possesses qualities that resonate positively with both surfers and potential business partners. With these valuable takeaways, we are well-positioned to navigate the path forward and continue the development of our project.

V. Business Model

1. Key partners

Developing a groundbreaking surf traction pad using innovative materials presents a significant challenge as none of us has a proper material's studies as a background. Our success in this endeavour hinges on forging alliances with key suppliers capable of providing the necessary materials and facilitating an optimal manufacturing process for our pioneering traction pad. Therefore, as on the market most of them weight less than 300gr, finding the ideal ratio between these basic components stands as the main obstacle, especially when our goal is to use eco-friendly materials in ensuring the peak performance of our product. Upon solidifying these partnerships, our intricate production process requires thorough testing, a task best executed within a controlled laboratory setting. The testing phase and the market validation is imperative to guarantee the quality and functionality of our traction pads. The attainment of our vision, centered on pioneering innovation and setting superior quality benchmarks within the surfing industry, significantly depends on the robustness of these partnerships.

Outlining our strategic alliances for sourcing raw materials, our initial partnership is with Genan, a company renowned for tire recycling since its establishment in 1990 in Denmark. Genan boasts a substantial record in recycling end-of-life tires, processing up to 150,000 tires daily and mitigating 280,000 tones of CO₂ emissions annually. Their established collaborations and their cutting-edge technology ensure the production of high-quality rubber granules, recognized for excellent mechanical, chemical, and environmental performance, aligning perfectly with our vision. This collaboration came as evidence when, we saw that main player has a production plant here in Portugal, near Porto. For us, it means eliminating the need for us to handle tire collection logistics, saving us significant time and resources. Genan's contribution significantly strengthens our commitment to creating an eco-friendly surf pad by

providing superior-quality recycled rubber granules, (*See Appendix I: Genan Fine & Appendix J: Genan Mix*).

Through the prototyping process, we quickly realized how hard it is to work with recycled tires, due to its composition. As soon as the granules were heated up, we quickly realized that we would need another raw material to combine with. It led us to explore alternatives, such as recycled EVA, a widely used material in the surf traction pad market. Eurovetrocap's recycled EVA emerged as an excellent fit, boasting exceptional flexibility and durability for our pad. Eurovetrocap, a prominent player in cosmetics packaging, embodies quality, sustainability, and innovative design. This collaboration marks our second relevant partnership with a recycled EVA supplier, as we quickly realised that both would easily stick together and create a complementary combination. Their vision and dedication to sustainable practices aligns seamlessly with our project's goals, ensuring that our eco-friendly surf pad is crafted from materials that prioritize both performance and sustainability. As we didn't find other materials that had good match with those two, we decided to find the perfect amount of each to make it as performant as possible.

Subsequently, we identified the need for a straightforward supplier for the adhesive component. Extensive market analysis revealed that the industry standard for attaching surf pads to boards involves double-sided adhesive, with 3M being a renowned provider. Acknowledging the industry's established benchmarks and the complexities of our transformation process, we chose 3M for their proven adhesive solutions. Securing contact with 3M Portugal and acquiring samples marked the outset of our official collaboration. This partnership reinforces our project with the reliability of 3M's adhesive technology, a pivotal element ensuring the quality and performance of our eco-friendly surf pad.

During the prototyping process we quickly realized another challenge would be the stickiness of Eva and tires with the wooden mold, so we had to figure something out. Through many tests Benjamin thought about talking as anti-adhesive for preventing plastic and rubber materials to the molds. That's why we reached Diacleanshop for a potential future collaboration.

Our pursuit of a suitable collaborator posed a significant challenge as we sought expertise for the intricate transformation process and mold manufacturing. The search for alignment with our project's requirements proved demanding. However, a turning point arose with the support of Nova SBE Haddad Entrepreneurship Institute, granting us access to the prototype fund and leading us to André Martins at Fab Lab in Lisbon. André's keen interest in our proposal spurred a collaborative effort, particularly in mold-making. This partnership marked a pivotal moment, providing us with vital knowledge and support to advance our project. Fab Lab Lisboa represents a dynamic hub for innovation, fostering creativity, experimentation, and access to the necessary resources. Their contribution empowers our project by enabling access to advanced materials, technology and precious expertise for our Entrepreneurial journey.

2. Customer segmentation

As expounded in the market analysis, our primary objective is to strategically concentrate on the dynamic Portuguese surf market. This deliberate choice is rooted in the belief that starting on a smaller, localized scale will afford us better insights of a local market before embarking on a broader global expansion. Our approach calls for the market to be subdivided into two categories, each of which comprises subcategories tailored to their unique characteristics and requirements. It spans both the business-to-business (B2B) and business-to-consumer (B2C) worlds, from surf shops and schools that serve the requirements of beginning and advanced surfers to the surfers themselves.

On the one hand, the business-to-business target market (B2B) is composed mainly of two players, namely surf schools and stores selling sport equipment, including items related to surfing. However, this multifaceted category encompasses a range of entities, including surf schools, surf shops, surf associations, and collectives. These establishments are pivotal to the ecosystem of the surfing industry, as they play distinct roles in promoting the sport, offering products and services, and fostering a sense of community among surf enthusiasts. By meticulously segmenting the market, we enhance our ability to cater to the distinct demands and preferences of each category.

The B2B segment includes surf schools, a highly relevant audience, as they interact with individuals who are interested in learning or improving their surfing talents. Surf schools provide students not only with classes, but also with equipment rentals, and surf-related goods; this implies they already have a clientele for surf equipment, such as surfboards, wetsuits, and surf accessories. Consequently, surf instructors become excellent partners for presenting our goods since they suggest brands or products to their clients.

3. Revenue streams

In delineating our revenue streams, Circle has strategically positioned itself to derive value from both B2B and B2C targets, ensuring a multifaceted approach to sustainable growth.

At the heart of our revenue model lies the sale of our flagship product, the traction pad. This product, meticulously designed to enhance surf performance, forms the bedrock of our core operating revenue. As we embark on this exciting venture, we have opted for a straightforward approach, concentrating on transaction-based revenue. This approach translates to one-time payments from customers, providing a clear and straightforward financial trajectory and aiming to establish a robust and consistent cash flow. This deliberate choice allows us to channel our

resources and attention towards developing a stable customer base. The stability of this customer base, encompassing both B2B and B2C customers, provides us with the financial foundation necessary for continuous investment in refining our supply chain and optimizing our production processes. By using this prudent approach, we are not only ensuring financial stability but also laying the groundwork for sustained growth and innovation in the dynamic and competitive landscape of the surfing industry.

Our strategic emphasis on catering to diverse customer categories within the B2B and B2C domains underscores our reliance on direct sales for revenue generation. In the B2C segment, inclusive of athletes, free surfers, and enthusiasts, our sales strategy offers flexibility through traditional channels and our dedicated online platforms. This nuanced approach aims to meet varied customer preferences and demands. Meanwhile, within our B2B ambit, we employ a wholesale strategy, providing traction pads in bundles to surf schools, associations, shops, and collectives. Our overarching goal is to establish and sustain a steady flow of sales. At its core, the pricing strategy aims to reflect the value of our flagship product, the traction pad, while remaining competitive within the market. In the first year, we have strategically set the prices at €14.90 for B2B sales and €35 for B2C sales.

Offering traction pads to B2B customers at a reduced price provides them with a competitive and advantageous rate. This strategic pricing not only incentivizes these entities to engage with our product but also encourages larger and more frequent orders. By facilitating accessibility through an attractive pricing model, our aim is to forge lasting partnerships and to position our traction pads as the preferred choice within the B2B landscape. Through this concerted effort, we seek not only to make our product more accessible to various surf-related establishments but also to foster an environment where these entities find value in consistently stocking our

traction pads. Hence, this commitment to maintaining a constant selling rhythm in the B2B channel not only supports our partners but also contributes to the overall market penetration and brand visibility.

In developing Circle's pricing strategy, we recognize a crucial market reality: while the eco-conscious movement is growing, most surf-related customers still tend to prioritize cost over sustainability in their purchasing decisions. Acknowledging this, we aim to introduce our surf pads at a price lower than the average market range, which typically ranges from €30 to €60. By setting our prices in the lower quartile, we target not only eco-minded surfers but also those who may find premium brands beyond their budget.

Our surveys have shown that a significant percentage of consumers are willing to pay within this lower price range, indicating a strong potential market for our products. By adopting this approach, we do not focus solely on profit maximization but rather on market penetration and brand establishment. Relying on our surveys and by asking professionals, the short-term strategy of selling our surfpad at 35€ appears more viable for introducing eco-friendly surf pads to a broader customer base. This pricing decision aligns with our mission to make sustainable surfing products more accessible, breaking the barrier that often exists between eco-friendliness and affordability. We believe this strategy will not only help us in gaining a quicker market traction but also play a crucial role in gradually shifting consumer preferences towards more sustainable options in the surf industry goods.

4. Cost structure

The cost structure of our business is multi-faceted, encompassing various components that play a pivotal role in our operations. Material costs constitute a significant portion, given our

reliance on external suppliers for essential raw materials, subject to fluctuations influenced by market dynamics. Additionally, our fixed costs, accounting for depreciation on crucial capital assets like aluminum molds, ovens, and granite boards, are inherent to our production process. Although additional costs have a relatively smaller impact compared to material and fixed costs, they are incurred through essential tools required in the production workflow. Our SG&A expenses, which are related to the day-to-day operational costs of running a business that are not directly tied to production, are diverse, covering essential aspects like marketing, rent, website packages, SEO strategies, and general administrative expenses including office equipment and utilities. Furthermore, provisions for other expenses such as package, storage or other unexpected expenses that may occur are also incorporated into our cost considerations. Among these, the highest expenditure brackets are attributed to marketing, followed by General & Administration, and other expenses.

These expenses have a direct influence on our business's profitability and effective management of these costs involves a strategic approach. For instance, in material procurement, we aim to mitigate cost fluctuations by exploring diverse suppliers or considering long-term contracts. With fixed costs, we intend to optimize asset usage to extend their operational life and minimize depreciation impact. In managing SG&A expenses, we plan to leverage cost-efficient marketing channels, optimize operational efficiency to reduce administrative overheads, and judiciously allocate resources to essential areas. By implementing prudent cost control measures, our strategy aims to strike a balance between expenditure optimization and sustained profitability, ensuring efficient resource allocation without compromising the quality or reach of our product.

5. Channel & Distribution

In crafting our distribution channels, we have fashioned a hybrid model tailored to meet the diverse needs of both B2B and B2C customers, reflecting our adaptive and comprehensive approach to market penetration.

Our current strategy employs a selective distribution model. In the nascent stages of our venture, we are meticulously curating our presence in physical retail stores that share our brand values. This careful selection extends to partnerships with surf schools, surf shops and surf associations that align with our brand ethos. This method ensures strategic positioning of our product, fostering impactful collaborations that amplify brand visibility and resonance. Our ambitious goal involves leveraging various sales channels. This ambitious involves leveraging various selling channels such as online sales platforms and e-commerce platforms, retail partnerships, and online advertising to maximize our product's exposure and accessibility.

In the B2C segment, we are concurrently implementing an exclusive distribution model through our own platforms. Our direct-to-customer sales unfold through dedicated channels, encompassing our website, with a dedicated e-commerce part to ensure online sales and a specialized marketplace hosted on Facebook. By maintaining control over these exclusive distribution channels, we ensure streamlined and direct interaction with our customers, fostering a closer relationship and enhancing the overall customer experience. This straightforward approach aligns with our commitment to simplicity and allows us to focus on building brand awareness, developing strategic partnerships, and laying the foundation for our future goal of intensive distribution within the vibrant and competitive surf market.

Additionally, our distribution channels encompass online advertising, social media and influencer marketing, aiming to create a robust and omnichannel presence. By leveraging these

varied channels, we maximize brand visibility, accessibility, and engagement while effectively reaching our target audience within the vibrant surfing community.

(To have a complete overview of the Business Model, please refer to Appendix K)

VI. Customer Acquisition & Marketing Plan

1. Identifying our target audience

The process of identifying a target audience is a pivotal action within any business strategy. It serves as the linchpin for aligning marketing strategies and product development with the specific demographics, needs, and preferences of the individuals and groups most likely to engage with our environmentally conscious surf pads. Through a comprehensive analysis of consumer behavior, rigorous market research, and precise audience segmentation, we have endeavored to increase the likelihood of our product's success while optimizing our marketing and sales endeavors. This analysis forms a critical component of Circle's business plan, strategically aligning our company's mission with the individuals who are most integral to our venture's success.

Circle's primary target market is the surfing industry, offering eco-friendly surf pads crafted from recycled materials, with a significant emphasis on tire-derived rubber. To better understand our customers and prospects, we have meticulously defined a semi-fictional representation of our ideal customer. By creating these exemplary consumer profiles, we can gain profound insights into the needs and expectations of our audience, allowing us to tailor our marketing strategy and customer journey accordingly.

Our eco-friendly surf pads, derived from tire materials, cater to a wide spectrum of customers within the surfing industry. However, we have categorized our market into two main segments: business-to-business (B2B) and business-to-consumer (B2C). Whether our interactions are with other businesses or individual consumers, our overarching goal remains the same. Through this analysis, we aim to delve deep into our customers' needs, the rationale behind

their purchase decisions, and the most effective ways to present our offerings to them. To gain a comprehensive understanding of our target audience, we have created two user personas, distinct for the B2B and B2C markets (*See Appendix E: Persona B2C & persona B2B*). Recognizing the pivotal role customer profiling plays in customer acquisition and retention, we intend to develop a robust, customer-centric inbound marketing strategy. This strategy will enable us to craft a user experience grounded in genuine insights, attracting more customers and prospects. Ultimately, this process will lead to the establishment of an intuitive purchasing journey, driving sales growth and enhancing customer retention. Our improved marketing strategy will not only target loyal customers but also bolster the return on investment (ROI) of our campaigns through precision targeting and relevance.

In conclusion, through a rigorous examination of market data and customer behavior, we have acquired essential knowledge about the specific individuals or groups that are most likely to interact with our recycled surf pads. This thorough knowledge empowers us to develop a targeted and impactful marketing strategy that appeals to our audience and eventually drives the success of our product. To further improve the relevance and attractiveness of our service, thorough segmentation enables us to adapt to the particular requirements and preferences of our potential customers. In fact, both our B2B and B2C customers will be interested in surfing and committed to sustainability, domains where Circle is engaged. Serving this well-defined target market gives us a competitive advantage and reaffirms our mission to give surfers a high-performing, environmentally responsible surf pad that complements their beliefs and sustainability objectives. Hence, the foundation of our business approach in the ever-changing surf accessory industry is the identification of our target audience, which opens the door to deep relationships and sustained success.

2. Crafting a compelling brand story

Crafting a compelling brand narrative for Circle is essential, as it underlines the profound connection with our customers. At the heart of Circle's brand narrative is a diverse team united by a dream and a multitude of common interests, which include a shared passion for surfing, a deep connection with nature, and a strong commitment to addressing environmental issues. This engaged team forms the bedrock of Circle's story, reflecting a unique blend of backgrounds and shared values that drive the brand's mission forward. The story of a dedicated team assembled out of the shared environmental concern and the commitment to sustainability is, therefore, pivotal. This brand story serves a dual purpose: telling the story of our entrepreneurial journey and providing a comprehensive introduction to Circle's innovative surf pad business concept, which utilizes recycled tire rubber to create surf pads.

Hence, Circle's mission transcends mere product creation; it aims to address global environmental challenges by providing eco-conscious alternatives. Moreover, the unique value proposition as a pioneering brand in the eco-friendly surf pad industry highlights the commitment to urgently needed environmental solutions.

Therefore, through its rich history, driven founders, and their advocacy for sustainability, our brand aspires to evoke emotions and forge stronger connections with like-minded customers. In fact, our primary aim is to effectively communicate a message that aligns with our core principles and ideals, allowing our unwavering passion and dedication to shine through to our community. This message will serve as the cornerstone of our unified brand identity, adept at addressing the unique concerns and high-performance expectations of our target audience. As a result, our brand will not only witness increased customer engagement and higher conversion rates but also garner greater recognition and visibility.

In the end, Circle's brand narrative serves as a driving force for positive change, impacting not only the surfing community but also the broader context of environmental sustainability. This narrative forges a profound connection with customers, uniting them through shared values and a collective commitment to making a difference.

3. Digital marketing strategies

a. Social media marketing

Harnessing the influence of social media stands as a vital pillar in our digital marketing strategy. Our commitment involves maintaining an active and engaging presence across platforms such as Instagram, Facebook, and LinkedIn (*Please see Appendix L: Instagram Account*). Through these channels, we aspire to connect with our target audience, share our brand's message, and showcase our innovative products. Consistent, high-quality content, inclusive of user-generated contributions and strategic hashtag usage, will be pivotal in augmenting our online visibility and drawing in surf enthusiasts who align with our core mission.

Our Instagram profile, dedicated to Circle, has proven to be a dynamic platform for connecting with our audience. We have observed significant engagement with our Instagram stories, garnering substantial likes. Reposts of our content and usage of precise hashtags have amplified our reach, eliciting even more engagement and comments, indicating a growing interest in our product. In fact, in the initial phase, our Instagram stories experienced moderate viewership, but with the steady increase in our follower count, we have witnessed a notable surge in story views. Leveraging strategic tagging of individuals and locations has been instrumental in expanding our reach and attracting a broader audience.

Additionally, we have established a presence on LinkedIn as well to further extend our outreach. However, we have observed that our Instagram profile has yielded greater success compared to our LinkedIn presence. While our LinkedIn profile remains an integral part of our digital presence, our immediate focus and success lie in harnessing the potential of Instagram due to its visual and interconnected nature. However, we aim to continue refining our strategy on both platforms, leveraging the strengths of each to effectively communicate our brand message and engage with our diverse audience.

To maintain this momentum and enhance engagement, we are strategically planning our content distribution on Instagram. We have devised a precise schedule to post both regular posts and stories consistently every week. This strategic approach aims to establish a more constant presence, increase likes, viewership, and foster engagement with a broader audience. We believe that the synergy between high-quality content, user-generated contributions and a strategic hashtag usage, will augment our online visibility, furthering our goal to connect with surf enthusiasts who resonate with our brand's mission and innovative ethos.

b. Content marketing

Beyond serving as a means to captivate potential customers, our content marketing strategy also revolves around nurturing an informed and empowered community. By curating informative and educational content on sustainability practices, technological innovations in eco-friendly products, and the impact of our initiatives on ocean conservation, we aim to inspire action and advocacy among our audience.

Moreover, our content initiatives are designed not just to showcase our brand's expertise but also to actively contribute to the ongoing conversation surrounding environmental

responsibility. Through thought-provoking articles, expert insights, and impactful visual storytelling, we endeavor to initiate meaningful discussions, drive awareness, and prompt positive behavioral changes toward more sustainable lifestyles and consumption patterns within the surfing community. Furthermore, our commitment to transparency and authenticity remains at the core of our content strategy. We aim to share success stories and real-life experiences that underscore our dedication to sustainability. This transparent approach fosters deeper connections, resonating with our audience on a personal level and reinforcing their trust in our brand.

We aim to leverage non-governmental organizations' network and experience to drive impactful campaigns, educational initiatives, and community-driven actions. Together, we seek to empower individuals, communities, and industry stakeholders to actively participate in preserving our oceans' health and promoting sustainable practices.

c. Email marketing

Central to our email marketing strategy is the establishment of a comprehensive database of interested customers and fervent surf enthusiasts who opt to subscribe to our newsletters and updates. Our periodic email campaigns will encompass a spectrum of content, ranging from product launches, exclusive promotions, and sustainability initiatives to narratives and experiences shared by the vibrant Circle community.

Indeed, our foray into email marketing has proven to be a strategic and impactful solution in nurturing connections with our audience. Our past endeavors in email marketing have demonstrated its effectiveness as a direct channel for communication. We have witnessed firsthand its ability to establish and fortify relationships with customers, providing them with

valuable insights into our product launches, exclusive promotions, and our commitment to sustainability. The positive response and engagement from our vibrant Circle community have underscored the significance of this medium in fostering brand loyalty and driving engagement.

As we move forward, we are dedicated to elevating this approach by implementing tailored newsletters specifically designed for individuals who subscribe to our website. Hence the email, created to foster customer relationships, stimulate repeat business, and keep our audience consistently informed and engaged, serve as a vital channel for maintaining a meaningful connection.

d. Offline marketing and community engagement

While digital marketing is pivotal, we recognize the enduring value of personal interactions and community involvement. Active participation in local surf schools, attendance at events, and support for surf-related activities will be integral to our offline marketing strategy. This approach allows us to cultivate trust and credibility within the surfing community, establishing authentic connections with customers on a more individual level. Collaborating with surf instructors and enthusiasts, our objective is to forge a network of ambassadors who not only champion our brand but also contribute significantly to our offline presence.

These strategies, combined with our commitment to delivering eco-friendly surf pads, will help us effectively reach our target audience, foster brand loyalty, and gauging the success of our marketing endeavours.

Building brand loyalty and customer relationships

Building long-lasting relationships with customers and cultivating brand loyalty are two of the core pillars of Circle's customer acquisition and marketing strategy. Fostering a feeling of community, common values, and a sincere connection are more important to us than merely selling surf pads when it comes to building lasting connections with our customers. At Circle, we recognize that the core of loyalty is the customer experience. At every point of interaction, from the moment a consumer encounters us online or in-store (if we choose to launch stores in the future), to the time they leave with a purchase, we aim to exceed their expectations. Each member of our team provides courteous, efficient customer service so that each and every one of our clients feels heard and valued.

We are aware that our clients share our enthusiasm for sustainability. We share our quest to use recycled rubber from old tires and are sincere and forthright about our environmental efforts and accomplishments. Our transparency fosters trust and appeals to customers who care about the environment and are eager to support a company with a compelling goal. We offer interesting and educational content to assist our clients in making wise decisions. Our blog, social media updates, and email newsletters provide insightful information on sustainable surfing techniques, product care, and other topics. By continuously educating our audience, we establish ourselves as a knowledge hub in the surfing community.

Circle's customers are not only buyers; they are also involved members of our environmentally responsible surfing community. To provide our devoted customers with a feeling of exclusivity and a deeper connection to our company, we host special events, competitions, and promotions. Since every client is different, we utilize data-driven insights to personalize our marketing messages and make sure that consumers see offers, content, and product suggestions that are

relevant to their interests and past Circle experiences. We aggressively seek out and appreciate client input. It is not enough to just listen; we also need to act on the advice we receive. We can better satisfy the requirements and expectations of our clients by enhancing our products and services through this cycle of continuous development. Circle has a strong commitment to the local and international surfing community. We actively participate in sponsorships, community activities, and initiatives. Our participation demonstrates our commitment to supporting the surfing community and giving back.

Our goal in putting these tactics into practice is to develop a committed group of surfers who are delighted to be associated with the Circle community. Building relationships with customers and retaining brand loyalty, in our opinion, is not simply a business objective but also a demonstration of our dedication to developing a flourishing and sustainable surfing ecosystem.

4. Measuring and analysing marketing effectiveness

One of the most important components of our customer acquisition and marketing strategy is tracking and evaluating marketing effectiveness. Data-driven decision-making is crucial for any marketing strategy to succeed in the modern digital era. We have put in place an extensive system for monitoring and evaluating the success of our marketing campaigns in order to make sure that our efforts are paying off and to continuously improve our strategy.

Our online presence and interaction are among the primary criteria we pay close attention to. We regularly track data like the quantity of followers, likes, comments, and shares on our social media sites, which include Facebook, LinkedIn, and Instagram. These metrics give us important information about the effect and reach of our content and help us understand which

posts resonate most with our audience. In addition, we monitor website traffic, conversion rates, and click-through rates to evaluate the effectiveness of our digital marketing initiatives. Another important component of our approach is email marketing, and we track the effectiveness of our campaigns with email tracking software. We may assess the efficacy of our communications using email campaigns' open, click, and conversion rates.

We measure our efficacy in offline marketing and community engagement by keeping tabs on the quantity of people who attend the events and seminars we organize or take part in. We examine the degree of interest sparked, the conversations we have with prospective clients, and the input we get from them. We are able to better shape our offline marketing strategy and fortify our ties to the community thanks to this input. A crucial step of our analytical approach includes gathering and analyzing client feedback. We regularly solicit feedback from our customers, administer surveys, and promote candid dialogue with our audience to learn more about their Circle experiences. Based on client preferences and demands, this data assists us in improving our offerings in terms of goods, services, and marketing tactics.

In order to calculate the return on investment (ROI) of our marketing initiatives, we also use a variety of analytical methods. Through a cost-revenue comparison, we may evaluate the efficacy of various marketing strategies and make informed judgements about resource allocation to achieve optimal outcomes.

5. Timeline and Milestones

We have created a detailed timetable with predetermined checkpoints to direct our efforts as we evaluate the effectiveness of our marketing tactics. During the first two months, we set baseline metrics on several platforms, understanding our starting point. We track these

numbers for the next three months and adjust as needed to improve our effectiveness on social media, email marketing, and website conversions. The seventh through ninth months are dedicated to broadening our marketing reach via influencer alliances, collaborations, and joint efforts with stores and surf schools. Active customer engagement, surveys, and feedback gathering take place in months ten through twelve, influencing our marketing messaging and future product and service enhancements. All year long, our quarterly ROI analysis offers a constant evaluation of costs and revenues. Lastly, we perform an annual assessment at the end of the first year, utilizing data-driven insights to improve our tactics and establish precise objectives for the subsequent year. By using a methodical strategy, we may effectively respond to shifting market conditions, enhancing our reputation, and forging closer bonds with our customers.

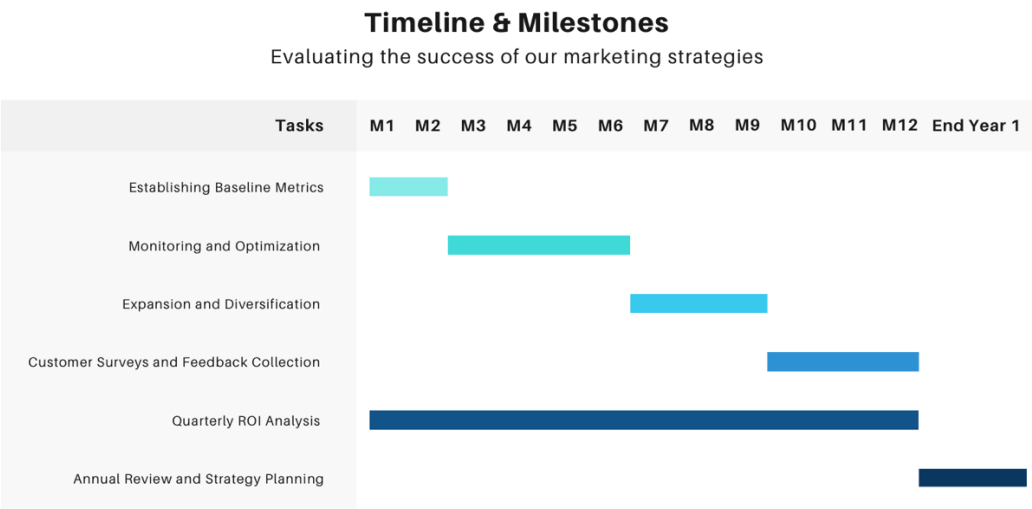


Figure 11: Timeline & Milestones for Evaluating the Success of Marketing Strategies

VII. How will our customers acquire our product?

1. Customer's decision-making unit DMU

The Customer's Decision-Making Unit (DMU) has several different characteristics when it comes to surfers and environmentalists. Enthusiastic surfers who are looking for high-performance surf pads and who are becoming more aware of the environmental impact of their equipment constitute the first circle. These people are frequently early adopters and perceptive to developments that fit with their sustainable beliefs. Simultaneously, environmentalists comprise yet another noteworthy aspect of the DMU. This subgroup actively seeks for alternatives that recycle resources and prioritises items with the least negative impact on the environment, supporting the concepts of the circular economy. Their impact goes beyond their individual purchases since they frequently participate in environmentally conscious groups, which broadens the brand's appeal. Furthermore, owners of surf shops and buying managers are an integral component of the DMU in the B2B sector. These decision-makers assess goods according to their marketability, compatibility with the store's values, and customer attractiveness. Gaining shelf space and establishing long-lasting relationships require an understanding of their viewpoints and standards.

Through an extensive mapping of the DMU's various components, Circle can customise its engagement tactics and advertisements. Our strategy guarantees resonance with all stakeholders, from highlighting the positive environmental impact to stressing the surf pads' durability and performance. With the help of this sophisticated knowledge, Circle can successfully negotiate the complex web of decision-making, promoting brand advocacy and loyalty among a variety of influencers and consumers. The Customer's Decision-Making Unit investigation is the basis for focused strategy development, guaranteeing that Circle's value proposition satisfies the wide range of audience preferences and motivations.

2. The process of acquiring a paying customer

A tactical strategy that is in line with Circle's dedication to sustainability, innovation, and customer happiness is included in the process of turning a client's interest into a concrete transaction. The first awareness phase is at the forefront, during which the brand uses focused promotional methods to expose itself to potential clients. In order to convey Circle's distinct value proposition, this phase primarily makes use of digital channels, including email advertising, social media, and content marketing.

As clients move from awareness to curiosity, the focus should be on giving them detailed information on the environmentally friendly surf pads. Providing comprehensive information about product parameters, manufacturing procedures, and the advantages of selecting Circle's surf pads for the planet, the website is an essential point of contact. Prioritising transparency is in line with the modern client's desire to make ethical and well-informed purchases.

Essential components of the evaluation phase include interactive elements, product reviews, and instructional content that engages customers. The brand becomes more appealing when interesting stories about the upcycling of tires into efficient surf pads are circulated. The conversion funnel helps potential buyers make a deliberate decision to buy as they learn more about the brand.

During the conversion phase, the goal is to ensure that the buying procedure is simple and safe. To satisfy a wide range of consumer preferences, it entails streamlining the online store, creating user-friendly interfaces, and offering several payment choices. Successful conversions are further increased by trust-building components like straightforward return policies and safe payment channels.

After the purchase, the focus switches to client retention and satisfaction. Circle uses tailored communication techniques, greets the client for their purchase, and asks for input to keep improving the quality of the good and the customer experience. A long-lasting relationship with the customer can be maintained through loyalty programmes, special offers, and continual interaction via social media and newsletters.

Customer feedback and data analytics are important components of this approach. In order to monitor the customer journey, pinpoint trouble points, and enhance the user experience, Circle uses analytical tools. This method is iterative, which guarantees constant improvement and keeps Circle's plans in line with changing consumer demands and market conditions. In conclusion, digital marketing, brand transparency, strategic engagement, and an unwavering dedication to customer happiness operate together harmoniously to acquire a paying customer for Circle. Through the alignment of every stage with the brand's fundamental principles, Circle creates a community of surfers who care about the planet and builds a meaningful relationship with its audience.

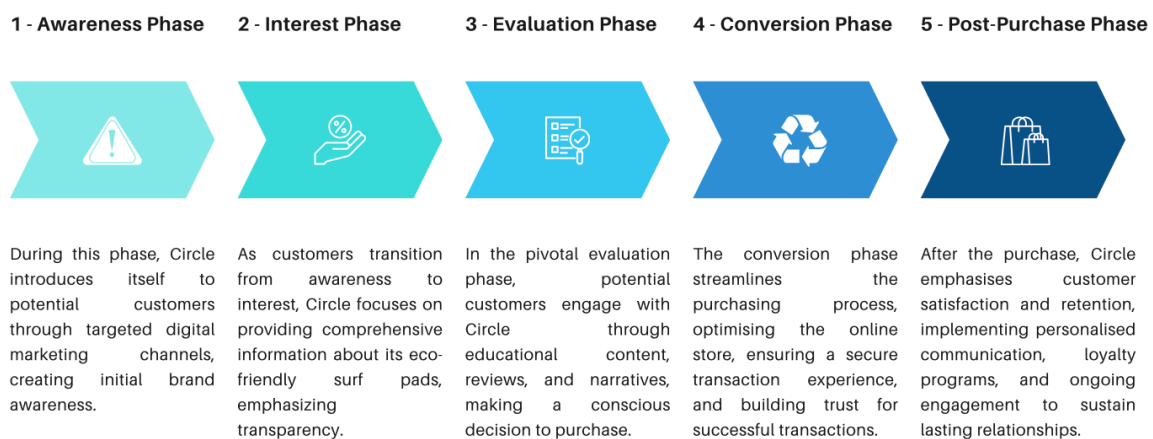


Figure 12: The 5 Phases in the Process of Acquiring a Paying Customer for Circle

3. Sales process to acquire a customer

Circle's environmentally friendly surf pads are sold through a carefully designed sales process that upholds the brand's core principles of sustainability, openness, and client happiness. From the first point of contact with a consumer until the closing of a deal, there is a deliberate flow that gives priority to engagement, education, and ethical business practises. Establishing a strong online presence on major social media sites like Facebook, Instagram, and LinkedIn is the first step in the sales process. These platforms act as dynamic demonstrations of Circle's dedication to turning used tires into premium surf pads. To pique interest and start conversations among the target audience, the business uses visually appealing material, educational postings, and user-generated content in its social media approach. The foundation of the sales process is educational content. To spread knowledge about the environmental effects of waste tire upcycling, the creative design of the surf pads, and the brand's overall philosophy, Circle uses content marketing techniques. Content such as blog entries, articles, and videos are carefully chosen to answer customer questions and establish trustworthiness.

As prospects advance through the sales funnel, the website turns becomes a crucial tool. It functions as a thorough resource, including thorough product specifications, user reviews, and a flawless online shopping experience. The website is designed with ease of use in mind, with features like simple navigation, safe payment channels, and clear shipping and return guidelines. Furthermore, one of the main components of Circle's sales strategy is personalised interaction. The company works with surf schools, attends surf-related events, and interacts with the surfing community in person. This hands-on approach builds a relationship between the company and its audience by improving brand awareness and giving potential customers a tangible experience. The sales team is essential to the process since they are passionate about sustainability and have in-depth product expertise. Inquiries from clients are immediately and

informatively answered, fostering a climate that encourages potential customers to make knowledgeable judgements. The crew has received training on how to highlight the special qualities of Circle's surf pads, highlighting their effectiveness, robustness, and favourable effects on the environment.

The final step in the sales process is a smooth transaction that gives clients confidence in their choice to buy surf pads from Circle. Post-purchase communications should emphasise thanking customers, offering more resources for product maintenance, and encouraging them to share their stories. This after-sale interaction promotes repeat business and helps to develop brand loyalty. Circle's sales approach essentially combines personalised connection, educational material, digital engagement, and ethical commerce. The sales process turns into a journey of mutual values between Circle and its ecologically aware consumer base when each step is in line with the brand's concept.

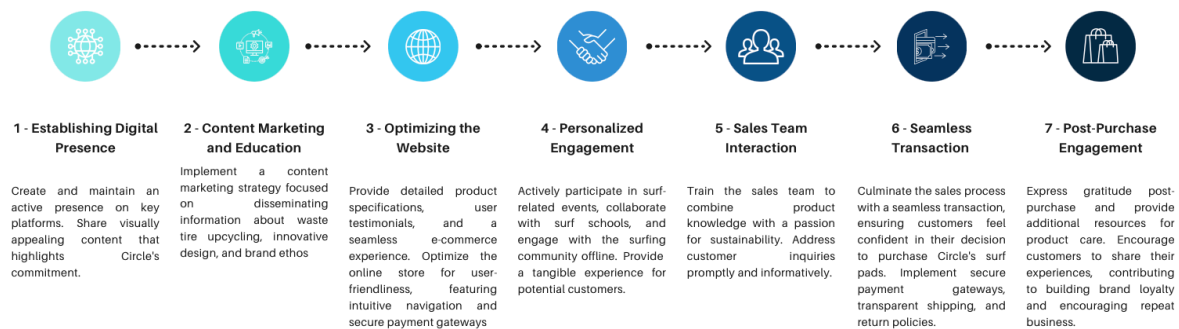


Figure 13: The Sales Process of Circle's Eco-Friendly Surfpads

VIII. Financial projection

1. Projected Revenues

Assumption: For startup companies, the growth rate of sales can be relatively high in the initial years. We estimate the growth rate for sales volume is 15% per year for year 1 to 2, and 30% for years 2–3, 40% for years 3–5. The expected number of pads sold in the first year is 600. The ratio of B2B & B2C distribution is 4:6. The price are €14.9 and €35 respectively.

Considering the CPI and PPI in Portugal, we estimate the price growth for our products is 1.5% per year.

So the sales prediction for a 5-year span is as follows: (The total volume is round-off number)

	Y1	Y2	Y3	Y4	Y5
B2B Volume	360.00	414.00	538.20	753.48	1054.87
B2C Volume	240.00	276.00	358.80	502.32	703.25
Total Volume	600	690	897	1256	1758
Price for B2B	14.90	15.12	15.35	15.58	15.81
Price for B2C	35.00	35.53	36.06	36.60	37.15
Sales	13'764	16'066.03	21'199.13	30'123.96	42'806.14

Figure 14: Projected Revenues

2. COGS Prediction

Materials' Costs					
Name	Cost	Quantity	Quantity needed in one pad	Number of pad we can created with that quantity	Cost per pad in euros
Rubber Genan Fine Powder 20221122_01 (SMALL)	500€ including shipping costs and taxes	1000 kilos	34gr	29411.76 pads	0.017
EVA n5	2.5€	1kg	400gr/pad (with 50gr surplus for the press)	2.5 pads	1
Talcum Powder - Diacleanshop (prevents heats for rubber)	34.99€	5kg	4.5gr	1110 pads	0.032
Fita Dupla Face 3M ref: 9448A	676.63€	Roll - 1200mmx50mts	29cm x 29cm	664 pads	1.01

Figure 15: Costs of production

According to the table above, material costs per pad is €2.06. Considering the PPI in Portugal, we estimate the material cost grows at 1% every year.

The fixed costs (capital) include 9 aluminium mould costs about 756€ in total; 750€ for ovens; 104€ for granite board. --1610€ in total. As we aim to lower our cost, we would use the granite board a natural press on top of the several mold due to its natural heavy property. We would let it, on top of every ranged baked mold and with the weight of the granite board and it's perfectly flat side let it the necessary time, until the pads reach their atmosphere temperature. The granite board would not need to be changed at any time, so it is not depreciated.

- We assume aluminum molds are depreciated over 4 years and residual value is zero. Depreciation each year is €189.
- Ovens are depreciated over 6 years and residual value is zero. Depreciation per year is €125.

Thus total depreciation for each year is €314(capital expenditures).

Additional costs (including the tools we use for creating them, such as brushes, oven gloves, vacuum cleaners, etc.) are about €80/year.

The table below summarizes the total costs:

Year	Y1	Y2	Y3	Y4	Y5
Material costs per pad	2.059	2.080	2.100	2.121	2.143
Quantity	600	690	897	1256	1758
Total Material costs	1235.40	1434.92	1884.05	2664.04	3766.95
Depreciation	314	314	314	314	314
Additional costs	80	80	80	80	80
Total costs	1629.40	1828.92	2278.05	3058.04	4160.95

Figure 16 : Projected costs

3. SG&A

Assumption: The marketing expenses (mainly social media marketing) consist approximately 20% of the total revenue.

Rent: €6000 per year.

Website package: €120 for the first year and €348 afterwards.

We estimate General& Administration expenses including office equipment and utilities etc. consist approximately 10% of the total revenue.

SEO: About €1000, €2000, €2500, €3000 for year 2-5 respectively. As SEO are online worldwide, we would start focusing on that later as our aim is to start mainly in Lisbon area.

Other expenses: Package, storage or other unexpected expenses that may occur. On average, we estimate other expenses consist 10% of the total revenue.

	Y1	Y2	Y3	Y4	Y5
Sales	13764	16066.03	21199.13	30123.96	42806.14
Marketing expenses(20% of sales)	2752.8	3213.21	4239.83	6024.79	8561.23
Rent	6000	6000	6000	6000	6000
Website package	120	348.00	348.00	348.00	348.00
General& Administration expenses(10% of sales)	1376.4	1606.60	2119.91	3012.40	4280.61
SEO	0	1000.00	2000.00	2500.00	3000.00
Other expenses(10% of sales)	1376.4	1606.60	2119.91	3012.40	4280.61
Total operating expenses	11625.6	13774.412	16827.65	20897.583	26470.457

Figure 17: Projected Expenses

4. Profitability Analysis

YEAR	Total	Y1	Y2	Y3	Y4	Y5
1.Sales(VAT Excluded)	1'23'959.25	13'764.00	16'066.03	21'199.13	30'123.96	42'806.14
Total volume	5201	600	690	897	1'256	1'758
Price for B2B		14.90	15.12	15.35	15.58	15.81
Price for B2C		35.00	35.53	36.06	36.60	37.15
2.COGS	12'955.36	1'629.40	1'828.92	2'278.05	3'058.04	4'160.95
Maternal costs	10'985.36	1'235.40	1'434.92	1'884.05	2'664.04	3'766.95
Depreciation	1'570.00	314.000	314.000	314.000	314.000	314.000
Additional costs	400.00	80.000	80.000	80.000	80.000	80.000

3.Operating Expenses	8'9595.70	11'625.60	13'774.41	16'827.65	20'897.58	2'6470.46
Rent	30'000.00	6'000.00	6'000.00	6'000.00	6'000.00	6'000.00
Marketing expenses(20%)	24'791.85	2'752.80	3'213.21	4'239.83	6'024.79	8'561.23
Website package	1'512.00	120.00	348.00	348.00	348.00	348.00
General& Administration expenses(10%)	12'395.93	1'376.40	1'606.60	2'119.91	3'012.40	4'280.61
SEO	8'500.00	0.00	1'000.00	2'000.00	2'500.00	3'000.00
Other expenses(10%)	1'2395.93	1'376.40	1'606.60	2'119.91	3'012.40	4'280.61
Operating Income	21'408.19	509.00	462.70	2'093.43	6'168.33	12'174.73
Taxes(17%)	3'639.39	86.53	78.66	355.88	1'048.62	2'069.70
Net Income	17'768.80	422.47	384.04	1'737.55	5'119.72	10'105.03
Net Profit Margin	14.33%	3.07%	2.39%	8.20%	17.00%	23.61%

Figure 18: Profitability

Note: Qualifying small or medium enterprises (SMEs) may benefit from a reduced tax rate of 17% on the taxable income. Thus tax rate of 17% is applied.

The profit margin is relatively low for the first two years, but it rises fast with the increasing sales volume. The overall net profit margin for the first five years is 14.33%. We consider profit margin is high enough to make the project worth pursuing.

The chart below shows the changes of revenue and net income:

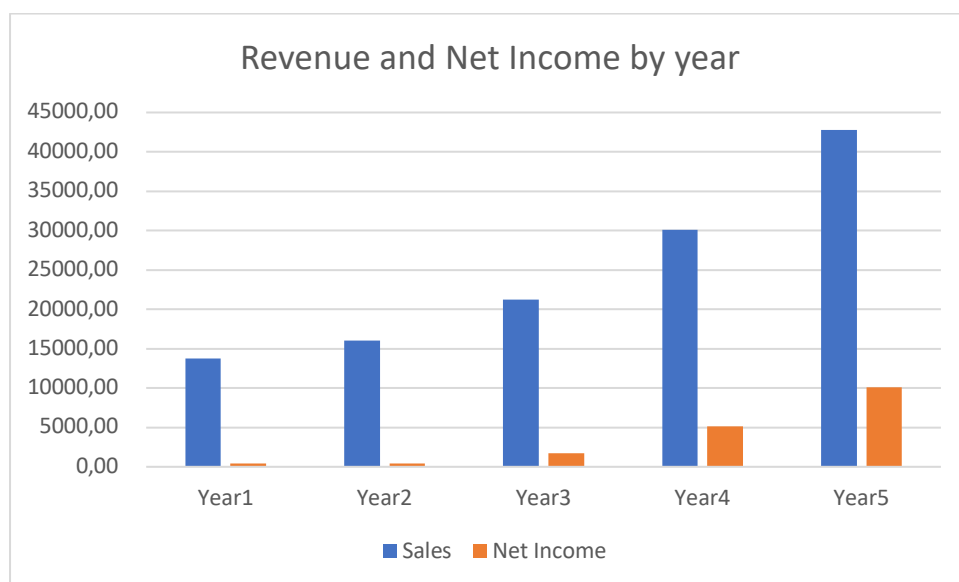


Figure 19: Projected revenue and net income per year

5. Financial Risk Analysis

a. Sensitivity analysis

	Total Sales	COGS & Operating Expenses	Operating Income	Operating Margin
Basic Prediction	123959.25	102551.06	21408.19	17.27%
COGS and expenses increase by 10%	123959.25	112806.17	11153.09	9.00%
COGS and expenses increase by 20%	123959.25	123061.27	897.98	0.72%
COGS and expenses increase by 30%	123959.25	133316.38	-9357.12	-7.55%
Sales decrease by 10%	111563.33	102551.06	9012.27	8.08%
Sales decrease by 20%	99167.40	102551.06	-3383.66	-3.41%
Sales decrease by 30%	86771.48	102551.06	-15779.58	-18.19%

Figure 20: Sensitivity analysis

Any increase in COGS & Operating expenses more than 20.88% will make this project lose;

Any decrease in sales more than 17.27% will make this project lose.

Thus, the project is financially feasible, and the margin of safety is relatively high.

b. Break-even analysis for the first 5 years

The break-even point = $\text{COGS \& Operating Expenses} / \text{total sales} = 82.73\%$

Current weighted average price per pad for first five years is €23.83, The break-even Price = €19.72 /pad

6. Funding requirements

Since the project is profitable from year 1 and afterwards, we only need to raise funds for the first year. The fixed assets cost €1610 in total in year 1. Other costs and expenses include material costs, additional costs, operating expenses, rent, marketing expenses, website package, G&A expenses, and other expenses. The table below shows the total amount of cash invested in the first year.

Fixed costs	1610
Material costs	1235.40
Additional costs	80.000
Rent	6000.00
Marketing expenses	2752.80
Website package	120.00
General& Administration expenses	1376.40
Other expenses	1376.40
Funding requirement	14551

Figure 21: Funding requirements

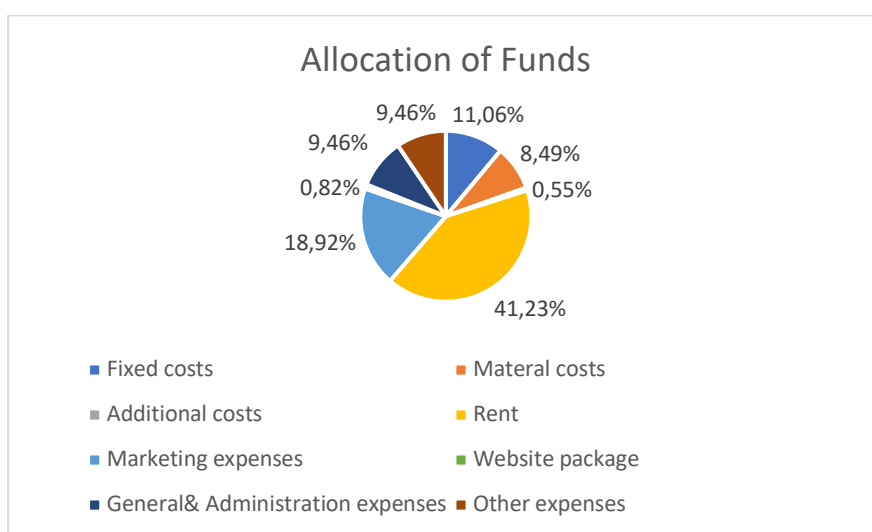


Figure 22: Funds allocation

IX. Navigating the Future: Company Acceleration

1. Accelerating growth and scale

Regarding our current situation, Circle was founded in Portugal, specifically in Carcavelos. Recognizing that we operate as a small business in a global industry, we have strategically chosen to focus our initial development in Portugal for the first 2 years. This decision is rooted in the benefits of proximity to a compelling market, particularly in Carcavelos where we are already established. Conquering the entire Portuguese market stands out as a significant milestone for us. Opting to start on a smaller scale by establishing our product presence in Lisbon and surrounding areas allows us to target attractive surfing zones such as Ericeira, Peniche, and the Algarve region. This approach aligns with our phased strategy to gradually expand our reach and make a meaningful impact within the Portuguese surfing community.

Our market vision goes well beyond national boundaries, even though our current focus is on developing our idea in Portugal. Our long-term goals include entering new markets and gaining market share across borders. Our goal is to find markets with significant potential, a thriving surfing community, and enthusiasts who are highly conscious of their environment. Our plan is to seek locations with locals deeply connected to their surroundings, eager to embrace sustainable surfing products and contribute to changing mindsets within the surf industry. France emerges as our second potential main market, a target we aim to reach by the third year of our company's existence. France boasts a surf subculture concentrated along its west coast, from the Basque Country to Brittany. Influential surfing hubs such as Biarritz, Hossegor, and La Torche in Brittany shape the culture not just locally but also globally. We also have our sights set on other areas such as the Mediterranean Sea, where we have seen the rise of surf communities, and foreign lands such as La Réunion, where a sizable surfing community aligns closely with their environment.

Once we have established ourselves in the French market, we will use it as a launching pad to expand into the rest of Europe, which includes countries like Spain, the Canary Islands, and Ireland. We may also investigate opportunities in the wider global market, which includes important markets like the US and Central America. Our ambition is to gradually establish a presence in diverse surf communities worldwide, leveraging our commitment to sustainability and innovation in surf products.

However, expanding our solution internationally poses a significant challenge that necessitates substantial adaptation in terms of market regulations and logistics. Selling and shipping products to other countries in Europe presents logistical hurdles, particularly in supply chain management and efficient shipment. Meeting the demand by producing the right quantity within the specified timeframe is a challenge we plan to address through comprehensive market research tailored to the geographical zones we intend to reach. Additionally, part of our strategy involves establishing a warehouse in France to streamline shipments and manage logistics more effectively. With our supply chain based in Portugal and a strategically located warehouse in France, we aim to enhance our operational efficiency, reaching a broader geographical scope and providing closer proximity to our customers.

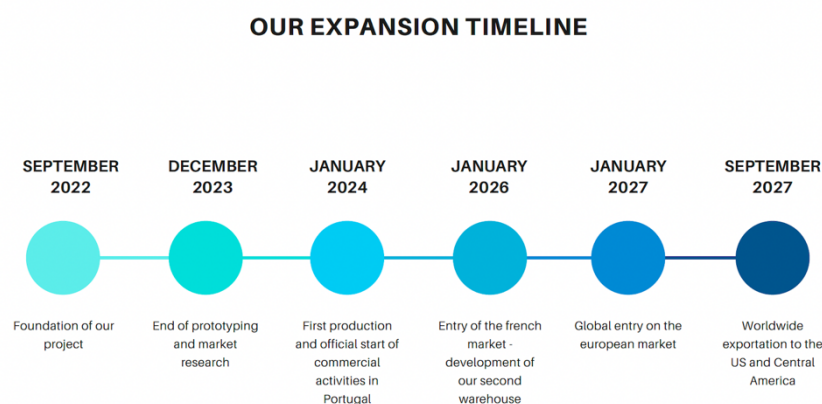


Figure 23: Expansion timeline

While our flagship product remains the « Circle traction pad », our vision extends beyond, aiming to introduce a comprehensive line of ocean-related products after the fifth year of operation. Our strategic approach is the reason we first concentrated on the traction pad. Our main objective is to build a devoted clientele around this innovative material made from recycled tires. When our product and brand image are well-established and proven, we will know when it is time to expand into a wider variety of products related to the ocean. Our ability to target and engage a new audience with additional offerings made from repurposed tires is made possible by the success of our traction pads. We strategically establish credibility and trust with customers by focusing on the traction pad first. This demonstrates our dedication to sustainability and paves the way for the growth of our product line.

Beyond serving as a strategic progression for our brand, the development of a full line of ocean-related products aligns with our broader objectives. It gives us a chance to reach a larger audience, including people who love the ocean in addition to surfers, by expanding our reach into the eco-friendly market. This expansion is consistent with our core values, emphasizing our dedication to the ocean and supporting our goal of making a bigger difference in its protection.

Our new product category will be defined by an initial offering closely related to our traction pad. We aim to develop various ranges of "front pads" adaptable to all types of boards, including surfing, big wave surfing, stand-up paddle, skim board, and kite surfing. Our objective is to create a roll that can be cut and customized to fit various surfaces, catering to a wide range of activities. In this context, the market aligns with the traction pad one, as these surfaces are essential on all boards for grip and stability. Building on the success of our traction

pads in the challenging surf market, we are confident that our products can extend to diverse sporting practices.

The subsequent product in our pipeline is a boat fender. While boat fenders are present on all boats for safety reasons, they represent a market that is yet to be fully explored, presenting a significant opportunity for our solution. Furthermore, it offers a chance to introduce eco-friendly products into a market largely dominated by unsustainable alternatives. Traditionally made of plastic and constantly in contact with water, conventional boat fenders release toxins and micro-particles that contribute to pollution in ports, seas, and oceans (Smith, al, 2021). We recognize the urgent need to address this environmental concern and believe our solution can bring about a transformative change and foster a new mindset regarding product consciousness and utilization.

We already have several ideas defined to launch this new line of products. For the front pads, we plan to leverage our existing network built through the sale of our traction pad, mirroring the strategies employed by major brands in the surf industry. Utilizing similar channels of distribution and targeting the same audience makes sense as the product shares similar aspects and will be crafted from the same materials. Regarding boat fenders, our strategy involves leveraging personal connections to gradually enter this new market. Victor, one of our team members, hails from Port Camargue in the south of France—a region with a substantial presence of boat and nautical businesses. His extensive connections within this industry could significantly aid Circle in penetrating this market step by step.

2. Strategic partnerships and alliances

a. University Surf Club:

Circle may strategically connect with the target audience and build a strong local presence by partnering with the University Surf Club (Nova Surf Club). After interacting with Matheos De Magalhaes, the club's operations manager, we are aware of the club's impact on students and its vibrant social media presence, which includes over 3,000 Instagram followers. Working with the Nova Surf Club entails using their social media platforms to promote the brand, increase awareness within the academic community, and connect with a larger audience interested in eco-friendly surfing gear.

An eventual opportunity to take part in the club's Nova Surf Summit and other related events is a crucial aspect of this partnership. To inform young surfers about the environmental effects of typical surf items, Circle suggests holding workshops on sustainable surfing methods. Organizing workshops and presentations during events hosted by the Nova Surf Club, such as the Nova Surf Festival that attracts over 1000 attendees per edition, would serve as an effective means to raise awareness and advertise our product. By raising awareness and giving participants firsthand experience, these seminars highlight the benefits of environmentally friendly surf pads made of recycled rubber. Workshops might provide surfers the chance to test out Circle's environmentally friendly surf pads on surfboards in the sea to increase engagement. This experiential method could considerably enhance interest, as demonstrated during the product validation, during which surfers who tried the pads in the water exhibited greater interest in the product due to its excellent performance.

This strategy is consistent with Circle's dedication to forging strong connections and comprehending the needs of its clients. Through proactive involvement in the local surf community, Circle hopes to lay a strong foundation for its sustainable surf pads.

b. Sea Shepherd, an NGO that matters:

In our vision, we have consistently felt the need to align ourselves with an organization that wields a significant environmental influence. After we attended the Nova Surf Summit, we met Sea Shepherd Portugal, and we were immediately struck by how similar their principles are to our own when it comes to protecting the oceans. Seeing the potential for collaboration, we hope to have a significant future relationship with this NGO. Given that our project addresses waste management issues and addresses the ocean conservation's strong cause, Sea Shepherd presents itself as an ideal partner to enhance our brand image. Collaborating with an organization that shares our commitment to environmental stewardship not only aligns with our vision but also provides a platform to amplify our message. Joining forces with Sea Shepherd represents more than a partnership, it offers a chance to become an integral part of a new work ecosystem and to expand our network.

Engaging a collaboration with Sea Sheperd will benefit our project in many ways. It provides a means of enhancing our brand image and building our company's reputation as an environmentally conscious company committed to protecting the oceans. Beyond just branding, working with Sea Shepherd gives us access to a group of people who are committed in environmental matters, especially in the surfing world, where Sea Shepherd is well-known. Our goal in integrating Sea Shepherd into our campaigns is to reach a wider audience and strengthen our brand through workshops, events, and communication channels. By taking advantage of Sea Shepherd's well-known brand and surfing community impact, this strategic partnership offers us a priceless chance to grow our clientele and smoothly enter the Portuguese surf industry.

3. Mentorship and advisory support

As a nascent enterprise, we leverage our social enterprise status as a strategic tool to access funding, support, and mentorship from incubator programs aligned with our vision. Programs specifically designed for businesses like ours provide more than simply funding; they also provide industry connections, advocacy platforms, and critical advice required to overcome obstacles. These programs likewise render it easier to connect with cutting edge production technologies, which guarantees better product quality. Within these programs, Circle will receive strategic mentorship from experienced professionals. This is crucial in providing insights into market strategies and new trends that are critical to Circle's position in the eco-friendly product area.

a. Hult Prize

We will seek to engage with global competitions and programs like the Hult Prize, renowned for challenging young entrepreneurs to create ventures that tackle the planet's most pressing issues. Every year, university students from all over the world compete for the Hult Prize. Student teams are tasked with creating creative social entrepreneurship solutions to problems that relate to a certain subject. The Hult Prize has become well-known for its dedication to social entrepreneurship and provides recipients with the means and encouragement to bring their ideas to life. The competition's main objective is to use youth's ability to have a positive societal impact (HultPrize, 2023).

In addition to the many advantages it provides, the Hult Prize program may be especially beneficial to Circle in the following ways. The winning teams get money to put their social business concepts into action. For Circle to expand its operations, improve its product offerings, and refine its business strategy, this capital might be essential. In addition, the Hult

Prize offers a worldwide platform for visibility. If Circle were to win, it would become more visible globally and draw interest from possible partners, investors, and clients. Also, experienced professionals advise and train participants in the Hult Prize program. With the help of this advice, Circle may strengthen its operations, navigate the difficulties that come with being a social enterprise, and refine its business plan. The program provides the means to establish a beneficial network. Circle might make connections with other like-minded business owners, professionals in the field, and possible partners, developing alliances that might help the company succeed. In addition, the Hult Prize grants access to a variety of tools, including seminars, learning materials, and networking opportunities. This can provide Circle with the information and resources required to handle certain issues facing the surfing industry and advance sustainability (HultPrize, 2023).

Circle's goals and business plan gain credibility after receiving the Hult Prize. The company's reputation can be improved, and it can become more appealing to partners, consumers, and investors with this confirmation. Taking part in the Hult Prize provides great educational opportunities. Circle may benefit by encountering different viewpoints, creative solutions from other groups, and knowledge of social entrepreneurial best practices. Besides, the Hult Prize, known for its commitment to impact, aligns seamlessly with Circle's mission to create environmentally responsible surf products, making it an ideal platform for us to catapult our vision onto the world stage, secure valuable resources, and further our impact on both the industry and the environment (HultPrize, 2023).

All things considered, the Hult Prize offers a full range of resources, both monetary and non-monetary, to support Circle's growth and beneficial impact in line with its social and environmental goal.

b. Ocean Solutions Accelerator

In addition to the Hult Prize, Circle could benefit from applying to the Ocean Solutions Accelerator by the Sustainable Ocean Alliance. By offering finance, coaching, and other vital resources to expand their businesses and increase their influence, this program assists entrepreneurs in launching a for-profit ocean solution for a sustainable blue economy. To be part of the program, several criteria, such as a strong team knowing its market, an innovative product with strong impact, a strong business model and a scalable business, need to be met. In the last three years, the program has helped 29 startups growing their business (SOA, 2023).

Leaders in the business offer specialized mentoring through this accelerator. Their insights will help us operationalize our goal while upholding our environmental values. To ensure that we achieve the highest standards, the program also provides technical expertise and access to cutting-edge resources to improve the performance and durability of our product. Participating in the program speeds up our market launch and growth by providing us with access to important industry contacts, possible partners, distributors, and customers. Opportunities for collaboration with well-known companies could help us expand our market reach and accelerate our growth. Furthermore, the founders and companies have lifetime access to the advantages of Sustainable Ocean Alliance's network, even after the 4-week accelerator program. In addition to offering an opportunity for media attention and investor interaction, being a part of the Ocean Solutions Accelerator strengthens our brand's reputation and demonstrates our dedication to environmental advocacy. This esteemed program fosters a mutually beneficial partnership that propels our expansion and positions Circle as a leader in sustainable innovation within the surfing community (SOA, 2023).

All these programs collectively form an ecosystem of support, providing Circle with diverse opportunities for growth, learning, and impact. These programs will be instrumental in solidifying Circle's position as an innovator in the surf industry. Through this strategic engagement with a spectrum of accelerators and global challenges, Circle is poised to not only grow as a business but also to contribute significantly to the health of our oceans and the betterment of our environment. Furthermore, many other programs could be interesting for Circle to participate in in the near future. Programs such as Echoing Green or the Skoll Foundation, both of which support innovative startups focused on social impact, offer fellowships, funding, and a network of leaders and entrepreneurs.

4. Funding Plan with Timeline

Year 1: Initial Funding (2023)

During the project's early development, strategic grants provided a critical financial boost for Circle. Firstly, as was already mentioned, Circle was awarded a 600 euro grant for prototyping by the DESIS Lab. With the award of this funding from the Nova SBE Haddad Entrepreneurship Institute, the project took a major step towards achieving its goal of using recycled rubber to create environmentally friendly surf pads. Circle then sought for and was awarded another grant, the Fund Gulbenkian Prototyping. The prototyping fund combines two forms of funding: prototype funding, which is necessary to enable students to concentrate on building relationships with suppliers and customers and creating value and impact activities, and seed funding, which enables students to develop small but meaningful experiences towards the validation of their idea. For validation costs, each group will get 100 euros in seed financing, up to a maximum of 3000 euros. Additionally, each group will get 1000 euros towards the prototype funding, for a total of 30000 euros. Hence, in December 2023, Circle expects to receive an extra 1000 euros, which will further solidify the financial foundation.

With the help of these initial funds, Circle can start material procurement, prototyping, and early-stage operational activities.

The project's potential and feasibility are demonstrated by this early financial support, which paves the way for further fundraising initiatives targeted at long-term objectives and operational growth.

Year 2-3: Short-Term Funding Goals (2024-2025)

After Circle completes its first round of funding, its attention turns to obtaining short-term funding to support important developmental milestones. Hopefully, these two years will see the accomplishment of the following goals. Circle's first goal will be to succeed in the aforementioned initiatives, the Ocean Solution Accelerator and the Hult Prize. Through these programs, Circle will have critical chances to obtain not only funding but also priceless resources, mentorship, and connections to large networks. In addition to providing funding for the project, successful participation in these programs would offer strategic direction for long-term expansion. Secondly, to diversify its funding sources, Circle will also investigate joint ventures with impact-focused funds, investors, and organizations that share its environmental values. Working with organizations that support Circle's mission can lead to the acquisition of more funding, which will increase the project's impact.

Circle's strategy plan is to launch its sales early, with the goal of introducing the surf pads to the market through pre-sales or limited releases. This strategy is intended to not only raise in the first income but also help the first sales of our product. In addition to raising money, our goal in providing a small batch of items to early adopters is to assess market interest, obtain insightful input, and clear the path for future commercialization. This early sales approach is

critical to maintaining our business's operations and is a pivotal phase in our financial journey that sets us up for future development and expansion.

With this multifaceted approach to short-term fundraising, Circle hopes to broaden its source of funding and maintain stability and adaptability as the project moves through important phases of growth.

Year 4-5: Mid-Term Funding Goals (2026-2027)

The goal of Circle's mid-term phase will be to secure more funds to support market penetration, research and development, and expansion. A number of options will be investigated throughout this time in order to maintain the initiative and advance it.

Circle will step up its efforts to increase sales volumes, building on the success of early product sales. By this moment, a larger consumer base will be the focus, and the surf pad will have established itself in the market. To meet the rising demand, improving distribution routes and raising manufacturing capacity will take precedence. In addition, Circle will aggressively pursue strategic partnerships and joint ventures with well-established entities within the surfing sector. These collaborations, such as those with Sear Shepherd and the University Surf Club, will not only open up new markets but also bring in resources, knowledge, and possibly even more money.

Furthermore, considering investment rounds becomes a realistic option as Circle's market share grows. Larger sums of money will be secured through the pursuit of venture capital or impact investment rounds, enabling significant expansion, innovation, and market dominance. In summary, the mid-term objectives seek to furnish Circle with the requisite financial means to

broaden its market penetration, improve its product portfolio (such as pad designs), and establish itself as a frontrunner in the sustainable surf product industry.

Year 6 and more: Long-Term Funding Goals (2028 - further)

As Circle advances into the future, maintaining growth, innovation, and financial stability will be the major priorities. A deliberate approach is needed throughout this period to ensure ongoing funding and handle unforeseen obstacles.

Now that a strong base has been created, Circle will attempt to diversify into additional environmentally friendly products relating to the water. This diversification attempts to generate new revenue streams in addition to meeting changing market demands. During this stage, funds will be used for these new product lines' research and development. Furthermore, as was previously mentioned, worldwide reach is necessary for long-term success. Circle intends to investigate global markets, which will require further capital for distribution network establishment, market research, and regulatory compliance. It may be possible to pursue strategic alliances with multinational organizations to ease entry into new areas.

Furthermore, maintaining competitiveness requires constant innovation. Circle plans to invest money in continuing research and development so that its goods can use the newest environmentally friendly technologies. Circle will continue to lead the way in environmentally responsible surf product creation thanks to this proactive attitude. Circle may also work towards certifications and accreditations for its environmentally friendly operations as part of its commitment to environmental responsibility. Funding will be designated for achieving industry certifications and conformance with standards, building brand credibility, and drawing in eco-aware customers.

Additionally, to maintain funding consistent with Circle's ideals, exploring long-term collaborations with investors and like-minded organizations will be investigated. In addition, Circle will consider long-term exit strategies including mergers, acquisitions, or strategic alliances in addition to its focus on sustainable growth. These tactics can guarantee Circle's mission's continuation while yielding significant returns for investors. Therefore, sustainable growth, innovation, and resilience in the face of uncertainty are prioritized in the long-term financial goals and continuous funding methods. Through prudent resource allocation and ongoing flexibility, Circle hopes to successfully traverse the changing business environment and make a substantial impact on the market for environmentally friendly and sustainable products.

The emphasis of this funding plan is on the necessity of securing funds through a dynamic and diverse approach. Circle is aware of how critical it is to modify plans in response to changing requirements and changes in the external financial environment. The funding trajectory for the next five years is outlined in this plan, which strikes a balance between immediate demands and long-term sustainability and expansion. Changes may be implemented in response to real-world events and emerging possibilities.

X. Conclusion

1. A dream on the horizon

After more than a year in this venture, we are fully motivated to continue focusing on developing our brand and achieving our development objectives. Circle aspires to become successful and expand our vision on a global scale. Extending our solutions worldwide would provide the opportunity to educate more people and promote a sustainable solution within the surf industry.

Changing surfers' mindsets is one of our long-term objectives, and we believe that we can achieve this by becoming the number one brand in terms of sustainability within the surf industry. Additionally, we hope that our product line will be a success. This success would enable us to reuse more tires and have a more significant environmental impact, thus helping us fulfil our goal of being a key player in ocean preservation.

2. Key achievements and challenges

Embarking on our journey, Circle has achieved significant milestones and key successes in the development and promotion of sustainable solutions within the surf industry. In terms of the technical aspect, our primary achievement lies in the successful creation of a surf product using an entirely new material—a pioneering feat in the surfing industry. We proudly stand as the first mover in the market, introducing surf pads made from recycled tires. The development of a high-quality prototype, boasting an exceptional grip, is particularly noteworthy. What sets this accomplishment apart is that it was achieved without prior experience in the surfing industry and with no external assistance. Through extensive testing and research, we managed to craft the prototype independently. Moreover, we take pride in the fact that our surf pad is

created with zero emissions. The use of a wooden mould and eco-responsible raw materials reflects our commitment to sustainability, marking a significant milestone.

On the validation and recognition front, we are equally pleased with our progress. The feedback received during our test day with surfers provided valuable insights for future improvements. The unanimous love for the exceptional grip our traction pad provides is a noteworthy achievement. Considering that we developed our product with a small financial support and crafted it by hand, this positive reception is a testament to our dedication. In the professional sector, the insights gathered from industry experts were constructive. Despite offering suggestions for enhancement, they expressed positive surprise at what we managed to achieve independently, adding to our sense of accomplishment.

However, even though this adventure has been marked by significant accomplishments, we still encounter several challenges in our future development. A primary focus for our product is to enhance both its design and overall performance. Addressing aspects such as weight, graphics, and packaging will be crucial steps as we strive to achieve the highest level of performance. On the business front, our main challenge lies in penetrating the Portuguese market and establishing more partnerships within the surf sector—an industry in which we are entirely new. Convincing people to choose and invest in our product will be a key aspect of overcoming this challenge.

3. Lessons learned

From a personal standpoint, this project has been a life-changing and illuminating journey full of learnings and personal development. It emphasized how important it is to be resilient and adaptable when negotiating the complexities of market dynamics and product development.

More than a year has passed since our founding in September 2022, during which time we have faced many difficulties and accomplished important goals. Research and development, organization, teamwork, and dedication were a few of the crucial components that made this entrepreneurial endeavour successful.

One of the most important lessons we took away from this experience was the value of teamwork. This required efficient task division and organization. Based on individual skills, we effectively divided up the work, giving different people tasks related to marketing, product development, and overall organization. In addition, none of us had ever launched a business before, so this was the group's first attempt at entrepreneurship. As a result, all of us gained insightful knowledge about the complexities involved in working on an entrepreneurial project. We learned how to multitask from this experience, which helped us become more adaptable and capable of making decisions under duress.

In conclusion, we recognize that there is a significant journey ahead of us, but we remain steadfast in our commitment to lifelong learning and development as we work to refine and grow our project. We acknowledge that every step presents new opportunities for growth and learning, and we seize the chance to improve and advance our endeavour. Our commitment to the project is unwavering, and we look forward to its continued development, knowing that the lessons we have learned thus far will lead us to success.

Appendixes:

Appendix A: Circle's Team Backgrounds

			
Alice Maiorca	Benjamin Soulié	Livina Mazzoni	Victor Font
Italian	Swiss	Belgian	French
Bachelor in Languages and International Relations at Cattolica University	Bachelor's in Economics and Management at HEC Lausanne	Bachelor's in International Business at Maastricht University	International Bachelor of Business Administration at Kedge business school
Educated in an international environment	Surfer from Geneva for years	Involved in volunteering for years	Surfer and strong network in the surf industry
Deeply concerned by environmental issues	Coming from the Alps I build a strong awareness for my environment	Extremely conscious about the environment	Born and raised at the sea, huge connection to the ocean
Has good communication skills and an innovative approach	Excellent soft skills and communication skills	Has good leading and organizational skills	Has an incredibly creative mindset

Appendix B: Circle's Team Roles

The unique contributions and roles played by each team member are fundamental to Circle's success as an entrepreneurial endeavour. Here, we examine the valuable contributions that each member makes to our shared vision.

Victor and Ben: Surf Enthusiasts and Designers

Victor and Ben, two passionate surfers, are the designers behind our surf pad. Their practical experience and in-depth knowledge of surfing help to shape the practical aspects of product development. They play a crucial role in the success of the product, whether it is by testing prototypes in the water or perfecting the design.

Livina: Organizer and Communicator

Livina handles a variety of roles. She coordinates the project and makes sure that every facet of our endeavour operates smoothly. Her talent for delegation keeps the team on task, and her aptitude for planning gives our operations structure. With her outstanding communication abilities, Livina is a key player in the growth of our company since she can sell investors, clients, and other stakeholders on our ideas.

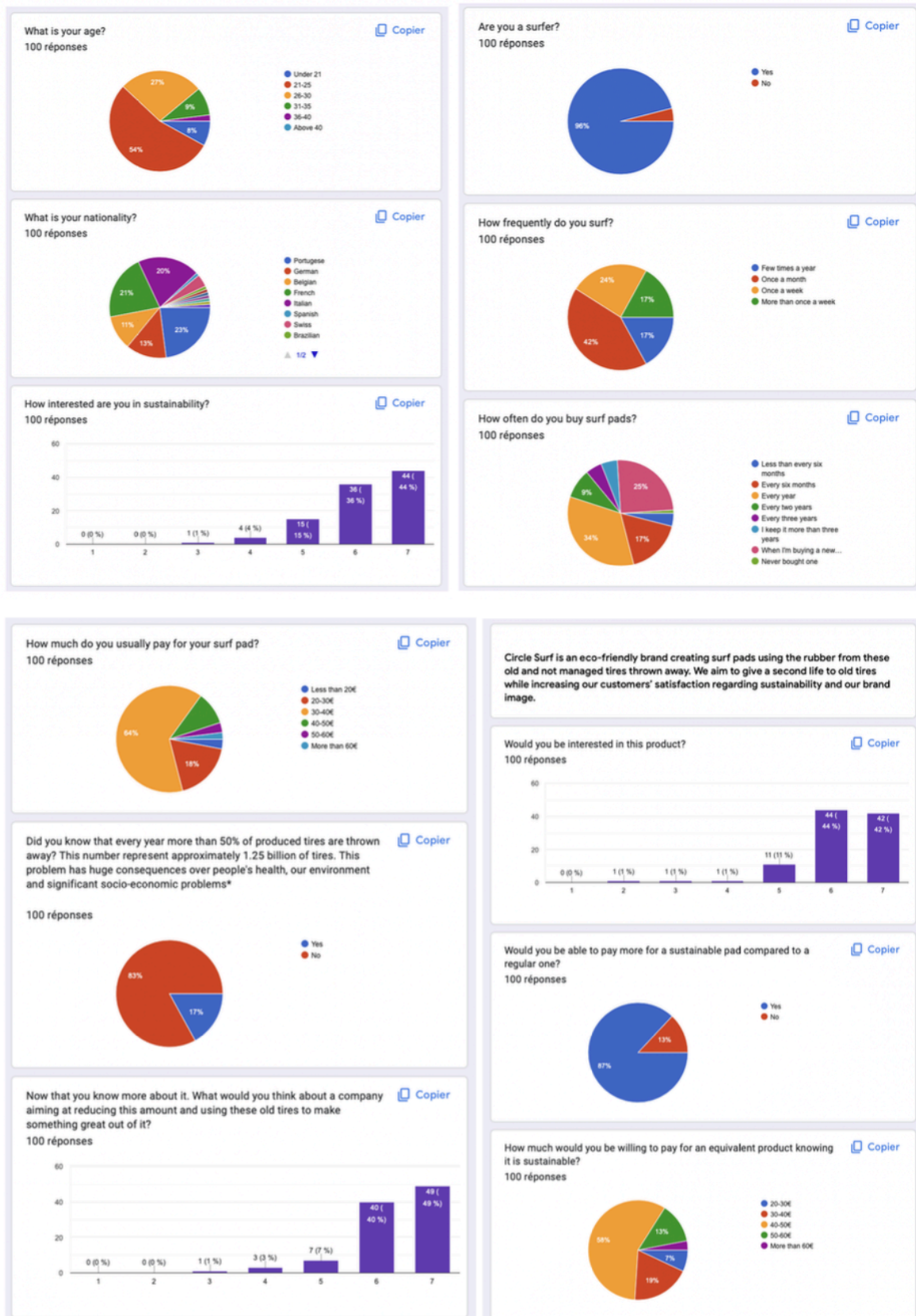
Alice: Remote Researcher and Marketing Specialist

Despite residing far away, Alice is essential to the plot of Circle. Her emphasis is on conducting market research and developing powerful marketing plans as our committed researcher and marketing specialist. Our decision-making is influenced by her ideas, which are based on data-driven research. Alice's contributions extend beyond

Appendix C: Surf Traction Pad Explanation

Definition	A traction pad is a piece of foam attached to the tail of a surfboard to prevent the back foot from slipping off. The traction pad's primary purpose is to increase the rear foot of the surfer's grip and to reduce wax usage. Learning how to position their back foot correctly on the board can be an excellent alternative for beginning surfers. Moreover, the surf pad is self-adhesive, adheres to the surfboard, and once applied cannot be taken off
Composition	There are frequently many surf pads hanging out from the wall in surf shops. A traction pad can be made of a single piece, two, three, four, or even five parts. To fit various surfboard models, numerous types of pads are available. For instance, due to the restricted space, a single piece pad is typically used for shortboards with narrow tails. The other pads, which are composed of numerous sections, are excellent for adapting to various types of boards, such as fun or fishing boards, for instance. Moreover, to make additional room on the tail of your board, you can divide the traction pad's parts into little spaces. The Kick tail is the back of the traction pad, that is higher than the rest of the pad. It allows the surfer to block his Blackfoot and put more power during manoeuvres. The Arch bar is the central part of the grip on traction pads. It is higher than the left and right side. We can say that the more skilled a surfer is, the higher the arch bar needs to be.
Materials	• The most popular and least environmentally friendly surfboard pads are made of EVA (ethylene vinyl acetate), a copolymer of ethylene and vinyl acetate. It is a very elastic substance that can be processed in the same ways as other thermoplastics. The material has low-temperature toughness, stress-crack and UV radiation resistance. • Sugarcane-based bio fam (as FCS for example) • Biodegradable foam (as Creature of Leisure)

Appendix D: B2C Survey



Appendix E: Persona B2C & Persona B2B

JOAO RIBEIRA



BACKGROUND

Working as surf instructor for a surf shop
Engaged in creating unique surfing-related products to meet customers' needs
Currently working as product designer for a surf business

OBJECTIVES

Aims at blending surfers' practical needs with his artistic vision
Wants to create innovative and cutting-edge products
Strives for changing customers' patterns of consumption

DEMOGRAPHICS

Age: 32
City: Lisbon
Job: Product designer
Family status: Celibate

MOTIVATIONS

Interested in learning new skills and techniques that might aid in his career and personal growth

Committed to respect the environment and create a positive impact through his products

FRUSTRATIONS

Does not have deep knowledge about sustainability regulations

FRANCISCO SANTOS



BACKGROUND

Impact Entrepreneurship and innovation student at Nova SBE
Surfer concerned in sustainability
Educated in an international environment

OBJECTIVES

Aims at committing himself to change his patterns of consumption
Wants to reduce waste and act as a positive contributor to the society
Strives for working in a company that fully reflects his values

DEMOGRAPHICS

Age: 24
City: Lisbon
Job: Student
Family status: Celibate

MOTIVATIONS

Interested in promoting an environmentally friendly model of economic development

Committed to try out innovative products and make conscious purchases

FRUSTRATIONS

Does not have deep analytical and quantitative skills

Appendix F: Grant Application Form

Prototyping Fund 2023-2024

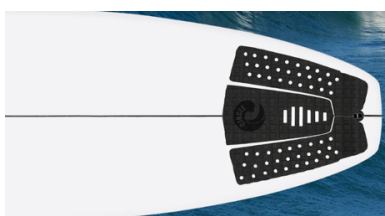
Name of the project: Circle

Information of each team member: Alice Maiorca; 53805@novasbe.pt; Benjamin Soulié; 54395@novasbe.pt; Livina Mazzoni; 54702@novasbe.pt & Victor Font; 52947@novasbe.pt

Question 1 – Please describe the prototype you plan to build:

The focus of our master's thesis involves the innovative use of recycled tires to develop water-resistant sports foot grips. Given that most sports foot grips available in the market are predominantly composed of rubber, our objective is to explore sustainable alternatives by repurposing discarded tire materials. To this end, my research partner and I have already established a partnership with a tire granule supplier, which has provided us with the necessary raw materials. We are currently in the phase of investigating suitable combinations of these recycled tire granules with other components to create functional and effective sports foot grips.

One specific application of our research is in the design of surf pads, which are foam attachments placed at the tail of a surfboard to enhance traction and prevent the surfer's back foot from slipping off during rides. The surf pad is self-adhesive, adheres to the surfboard, and once applied cannot be taken off. Our pad will be composed of three separate parts, all in black, with the brand name in the middle. The pad's dimensions will be the following: 32cm length, 32cm width and 3cm depth (See picture).



Hence, Circle's aim is to give a second life to old tires by creating surf pads while increasing our customers' satisfaction regarding sustainability and our brand image.

We are therefore now looking for an assistant teacher or research facility where we could discuss potential collaboration and conduct scientific research to further our project and develop our prototype (surf pad). To do so, we contacted FCT who agreed to help us. Therefore, receiving a grant at this moment will be extremely helpful for us as we would be able to start prototyping our product and maybe launch our dream.

Thank you for considering my inquiry, and I eagerly await your response. Please feel free to reach out to me at your convenience via the contact information provided below.

Question 2 – How much funding are you requesting for this project?

We are still in the research process. For now we are in contact with Genan, a rubber company creating granules (see question below). However, we're missing two suppliers for the moment but are in the process of finding them with the help of FCT. Hence, we're not hundred percent

sure about how much money will be required to start this project. However, we know that rubber granules are extremely cheap and that production costs will be around 7000€. In fact, the pad mold will cost 6000€, as explained by YnaForm; a mold company, and then we'll need money for the production.

Following this, money will be required for salaries, mold depreciation, shipment and logistics, R&D, web development and maintenance, marketing, sales, storage, taxes etc. We are not sure for the moment about the costs of all these activities. But our objective for the moment is to prototype our product and then we'll start launching our idea.

Question 3 – Please provide us with an overview of the materials / resources you plan to purchase with an amount for each item. This does not need to be fully articulated but please provide us with some general breakdown and rationale.

In order to create Circle's traction pads the following materials are required: rubber, glue, and vegetal material. Circle decided to make Genan, a company that recycles end-of-life tires and transforms them into rubber granules, their exclusive supplier. Due to their cutting-edge technology and superior mechanical, chemical, and environmental performance, Genan rubber granules are highly-quality products manufactured at state-of-the-art tire recycling plants that can be used for a wide range of applications. Sports surfaces are one of the three primary uses for rubber granules and the company is already cooperating with leading contractors and specialists within the industry. Hence, we have decided to choose them as our rubber suppliers. We have already established a partnership with them, and they have provided us with the necessary materials. At the moment, we have two types of recycled granules differentiated into two types of formats. 20kg of each are waiting to be used.

We are currently investigating suitable combinations of these recycled tire granules with other components like sugar cane, and algae to create functional and effective sports foot grips. Finding a knowledgeable lab that can provide us with the knowledge to identify the ideal chemical combination to pursue the project is our top priority. Thankfully, FCT is helping us. Then, as soon as we have the components we'll start prototyping.

Furthermore, once the rubber, vegetal material and glue are obtained, molds are required to create the final product. Therefore, as this activity will be outsourced, Circle needed to find a suitable partner for this task. Circle has decided to outsource this activity to Ynaform, a company creating molds. They have already agreed to assist us in developing our prototypes, and we are in contact with them. Determining the amount of rubber and the vegetal material that we are going to add in the pads is the first and most crucial thing we will do with them.

Question 4 – Please explain why you need to build this prototype. What will building this prototype help you achieve?

Building a prototype for surf pads made from non-recycled and discarded tires is a crucial step in Circle project's development and aligns with our long-term goals and aspirations. Our need for this prototype can be explained as follows. Over the past year, we have extensively researched the feasibility and environmental benefits of using discarded tires for surf pads. While our theoretical groundwork has been promising, building a physical prototype is essential to validate our concept. It will demonstrate that our idea can be translated into a tangible, functional product.

Moreover, creating a prototype will allow us to assess the technical feasibility of manufacturing surf pads from discarded tires. It will enable us to identify any design or production challenges and refine our approach accordingly. This process is essential to ensure the eventual scalability and reliability of our product. Furthermore, and as previously mentioned, our team is deeply committed to sustainability. By repurposing discarded tires into surf pads, we aim to significantly reduce the environmental impact of tire disposal while providing an eco-friendly alternative to conventional surf pads. Building the prototype will help us quantify the exact environmental benefits and assess how our product aligns with sustainability goals.

Last but not least, the prototype will serve as a tangible representation of our idea, which is vital for engaging potential stakeholders, including investors, customers, and partners. It will allow us to conduct market testing, gather feedback, and assess the product's appeal, ensuring its viability in the competitive surf gear market.

To conclude, as we are working on this project for our master's thesis, building the prototype will provide valuable academic insights. It will enable us to apply theoretical knowledge to a real-world problem, fostering a deeper understanding of materials science, sustainability, and entrepreneurship. But not only, we are all passionate about this idea. We've been working on it for a year now and we cannot wait for this project to start seeing the day. Ultimately, this prototype is the bridge between our passion and a tangible, eco-friendly product that can benefit both surfers and the environment.

Question 5 – Think about what you want to learn from the prototype and explain the following: Function: What needs will it answer? What are the assumptions that are at the core of your idea? Form: What will be the experience of the users?

We will be able to test the surf pads and evaluate their effectiveness in the water thanks to the prototype. In order to test our product and get input to improve its performance, we will ship the prototype that we have built and produced to professional surfers and surf schools in Portugal. After completing this phase, we will know whether we need to make any modifications to our product, whether we need to switch out one of the materials, or whether the pad will be durable and effective enough to be sold on the market.

After conducting our research on the current industry, we noticed that there is an established, robust, and competitive market for surf accessories, particularly surf traction pads. In fact, one of the most popular items on the surf market is surf pads since surfers require them as they advance in their ability. Additionally, there are already some large and established corporations on the market for traction pads. However, we observed that the majority of rival companies use "light" EVA foam that is primarily made of plastic. In other words, the majority of our competitors are not making a difference for the environment.

Thus, Circle can be regarded as being incredibly innovative and one of the only companies to address a current issue, namely tire pollution, while also producing a top-notch surf product. Hence, concerning the experience of our users, we expect them to be satisfied with a new eco-friendly and innovative product that has good performance in the water, and at the same time does not pollute the environment and the ocean. Furthermore, we anticipate that our product will not function flawlessly throughout the creation of the first prototype because we are aware that revisions will be required. Despite this, we are aware that the testing phase will be one of

the most important for this kind of product because the surf pad must be water-resistant. We'll spend a lot of effort into this phase because of this, and the prototype will be crucial to the success of our project.

Question 6 – How will you evaluate if you are successful with this prototyping project?

If we had to answer this question in a business way, this would be our answer.

Evaluating the success of our prototyping project for surf pads made from discarded tires is crucial for measuring progress and ensuring that we achieve our objectives. We would then evaluate our success through different means. Success can be measured by the development of a functional surf pad prototype. This means the pad should meet the basic requirements of providing traction, comfort, and durability to surfers. It should be capable of performing its intended function in a real surfing environment. And evaluate whether the production of surf pads from discarded tires is cost-effective compared to traditional materials. If our prototype demonstrates cost savings or a competitive pricing advantage, it can be considered a success from a business perspective. Moreover, measure the environmental impact of your prototype. Calculate the number of discarded tires diverted from landfills, the reduction in carbon emissions, or other relevant environmental metrics. Success would involve a significant positive contribution to sustainability. Additionally, conduct market tests and surveys to gauge the acceptance of our surf pad prototype among surfers and potential customers. If we receive positive feedback, pre-orders, or indications of strong demand, it suggests success in terms of market viability.

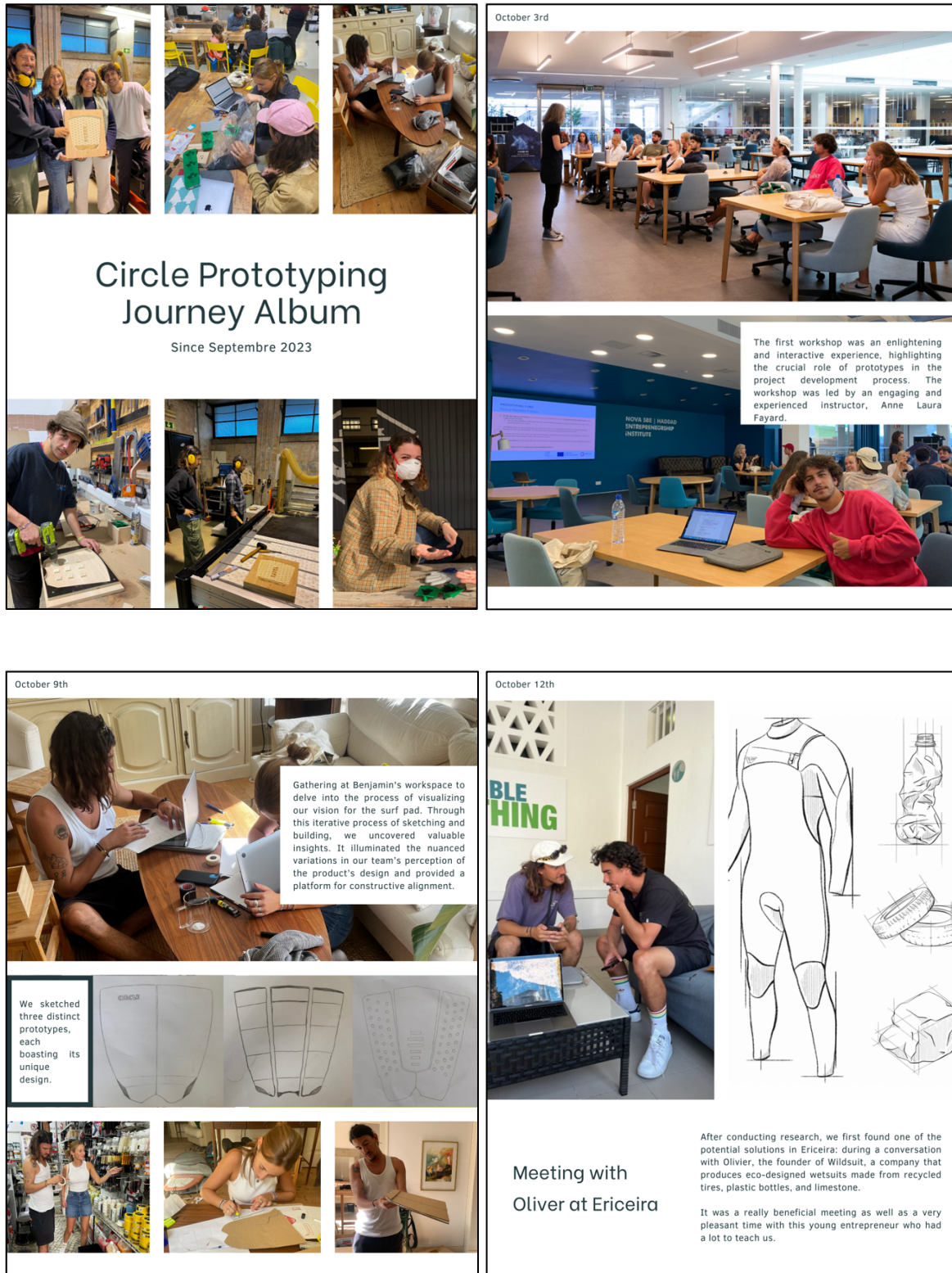
Our success would also be evaluated regarding whether the prototype can be manufactured at scale without significant technical challenges, ensuring that the surf pad prototype meets safety standards and offers sufficient durability to withstand the rigors of surfing, and collecting feedback from users, partners, and experts in the field. We would use this feedback to make necessary improvements and iterate on the prototype. Success would also be evaluated by assessing whether the prototype contributes to our academic and research goals, as outlined in our master's thesis. This could include generating new knowledge, advancing the field of materials science, or providing insights into sustainable product development. Then, evaluate our success in engaging stakeholders such as investors, advisors, or potential collaborators. A successful prototype should generate interest and support for our project.

Hence as our goal is to turn this project into a sustainable business, success can be measured by achieving milestones in business development, such as securing funding, partnerships, or entering the market.

But, to us, it is not only about business success. We are dreaming to see this project happening and having the prototype in our hands would make us proud and happy, that's from our point of view, success.

Payment information: Full name; Taxpayer number; Fiscal address & Bank account information.

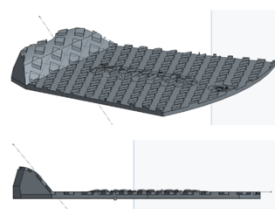
Appendix G: Album of Prototyping Process



October 18th



Armed with a popular surf pad, which served as our indispensable reference model, we embarked on a complex journey toward creating our prototype. Our foray into prototype creation commenced with the meticulous conceptualization phase, marking the inception of our adventure. Employing OnShape as our trusted instrument, we embarked on the methodical process of measurement and experimentation. Continuously comparing our progress with the acquired surf pad, we devoted hours to testing various forms and iteratively refining our design.



October 24th



When buying the wood for creating the mold we went to a known shop where the employees advised us on which wood to use



October 25th



In order to create the mold we had to cut and glue several planks of wood



October 26th



The second workshop commenced with each team providing an update on their prototyping progress. Then, teams were divided in two groups and had to share their challenges to receive feedback.





November 27th

Due to the limitations of the original mold, the surf pad included flaws such as holes and uneven lozenge shapes. As a result, we decided to create a second prototype for testing. We quickly came up with a fresh, straightforward design, made a wooden mold, and started building.



November 28th - Final Showcase



As part of the grant, a final showcase took place at the university where we had the opportunity to present our project and prototypes. We connected with individuals interested in our project who were eager to offer assistance.



December 8th - B2B Product Validation

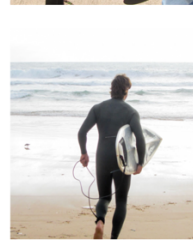
Validation process demanded engaging in meaningful conversations with key players in the surf industry, specifically targeting business professionals. Following a thorough analysis, we discerned that establishing connections with owners of surf shops and surf schools proved to be a more accessible avenue.



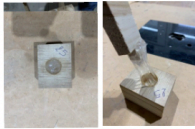
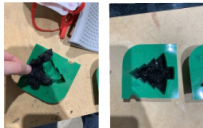
December 9th - B2C Product Validation



In the context of B2C tests, the logic was crystal clear – what better way to assess a surf product than by subjecting it to authentic, real-world conditions? Thus, we positioned our prototype on a surfboard, and extended invitations to surfers in Carcavelos, asking them to ride a few waves.



Appendix H: Materials' Combination in Molds

Experiments	Materials (Ingredients)	Percentage of each (gr)	Mould	Temperature	Time in Oven	Results	Picture
Exp n1 - Friday 27th	Rubber Genan Fine Mix 20221122_01 (LARGE)	20gr in the tree cup	Silycone	120 degree	15min	We took a look after approximately 7.5 minutes and nothing happened. The granules were unchanged. Even if the time isn't finished yet. We are already sure the temperature needs to be way higher. After 15min - nothing has changed. The granules are a bit hot but not even that much as we're able to touch them with our hands without hurting ourselves. The granules in the bottom of the silycone cup are not even a bit melted. CONCLUSION - NOTHING HAPPENED	
Exp n2 - Friday 27th	Rubber Genan Fine Mix 20221122_01 (LARGE)	20gr in the tree cup	Silycone	180 degree	15min	Again, we checked after 7.5min and as the previous experiment, nothing has changed. Even after 15min it was unchanged. Of course, hot and we could see some smoke. CONCLUSION - NOTHING HAPPENED	
Exp n3 - Friday 27th	Rubber Genan Fine Powder 20221122_01 (SMALL)	20gr in the tree cup	Silycone	180 degree	15min	Again, we checked after 7.5min and as the previous experiment, nothing has changed. However, after 15min, it was not melted but it became sticky. It was extremely hot, the smoke was present. It became sticky and we could observe some agglomerations. CONCLUSION - STICKY RUBBER	
Exp n4 - Friday 27th	Rubber Genan Fine Powder 20221122_01 (SMALL)	3gr in the small wood hole	Wood	180 degree	20min	First good observation - wood is not damaged meaning it can easily handle the temperature. Moreover, the granules are unchanged. We believe it is because the wood piece is really thick hence the heat didn't pass through it. Hence, we want to try it again longer than 20 minutes and higher than 180 degrees. For sure, the wood isn't the right material to use for molding as it is isolating the granules (from the heat). However, we'll stick to that option as aluminium or silycone mold are too expensive. Hence, we'll try again with higher temperatures and timing. Furthermore, the compression should be used as it will allow to centralize the heating of the chosen piece. We will search for the right process to use; compress and heat; heat compress; or heat compress and heat again etc. CONCLUSION - ADAPT TEMPERATURE AND HEATING TIME + THINK ABOUT COMPRESSING IT	
With these experiments, we noticed that the Genan Fine Powder will be the preferred one for the final product as because its particles are smaller, it becomes stickier faster even with a (small) temperature of 180 degrees. It becomes softer and it's easier to work with these granules.							
Exp n5 - Tuesday 31st	Rubber Genan Fine Powder 20221122_01 (SMALL) + R Pet	50 percent of each. 20gr each - so 40gr in total. The recipient was bigger than the others.	Wood	200 degree	15min + 15min	We noticed after 15min that the rpet was almost fully melted on the top but not inside. The rubber was not that sticky because it was not long enough in the oven. The two materials were not too homogenous. Then, after the second time we put it in the oven for 15min, we noticed the materials were stick together and it was hard once it cooled down. Hence, unfortunately, not flexible at all. CONCLUSION: IT STICKS TOGETHER BUT IT IS NOT FLEXIBLE	
Exp n6 - Tuesday 31st	Rubber Genan Fine Powder 20221122_01 (SMALL) + R Pet	70% Rpet and 30% of rubber. We put the rubber in the bottom of the mold. We hoped it wouldn't stick by doing so.	Wood	200 degree	20min	As we put rubber in the bottom, it did not stick to the mold at all. Also the materials didn't mix together. The Rpet was on the top and fully melted and hard but the rubber unchanged. CONCLUSION: DO NOT PUT THEM APART	
Exp n7 - Tuesday 31st	Rubber Genan Fine Powder 20221122_01 (SMALL) + R Pet	The mold was covered with vaseline in order for the materials not to stick. Then we put 60% or Rpet and 40% of rubber (mixed together)	Wood	200 degree	15min	As we put vaseline in the bottom everything was stuck to the mold and we could not remove it. We saw that the Rpet was super sticky and hard while the rubber was not at all. They were a bit mixed together but it is sure that these two materials do not match with the vaseline. CONCLUSION: VASELINE MAKES IT WORST AS IT GETS STUCK TO THE MOLD	
With these experiments, we concluded that Rpet should not be used as it melts very easily and becomes super hard, which is not suitable as a pad should be flexible. In addition, the longer the rubber stays in the oven the better. In fact, last week it stayed only for 15min and when we tried 30min (15+15) the results were better. In addition, a highest temperature gives also better results (we used 180degrees last week compared to 200degrees this week). We could even increase it more in the future experiments.							
Exp n8 - Monday 6th	EVA n5	3gr in the small wood hole	Wood	220 degree	20min	The EVA was fully melted and very sticky when we took it out of the oven. We took a wood stick and tried to push very hard in the mold (a bit like the compress process). At first, the material was sticking to the wood stick hence we concluded that it would never work. However, once the material cooled down and was totally cold it was kind of easy to detach it from the wood stick and it was not sticky anymore. The material was flexible which is a good thing.	
Exp n9 - Monday 6th	EVA n8	3gr in the small wood hole	Wood	220 degree	20min	Exactly like the n5 it was fully melted and very sticky at first. However, it seems more malleable when we tried to press it with the wood stick. Hence, n8 could be better than 5. Once cold, we took out the wood stick and its shape stayed in the mold + it was easy to take it out. Could be a good material.	
Exp n10 - Monday 6th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL)	20gr in the tree cup. 50% of each.	Silycone	220 degree	20min	Both materials stick together. They become homogeneous. Nothing sticks to the mold, however it was predictable as it is a silycone mold. However, when we tried to put the wood stick it was very much sticky. However, once again, once cold it was fine. Both materials stayed together and were flexible + solid.	

Exp n11 - Monday 6th	EVA n8 + Rubber Genan Fine Powder 20221122_01 (SMALL)	20gr in the tree cup. 50% of each.	Silycone	220 degree	20min	Same conclusion as the one above. However, a bit more flexible and hence less resistant and robust.	
Exp n12 - Monday 6th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL)	3gr in the small wood hole. 50% of each.	Wood	220 degree	20min	Bad combination - not exploitable here. It way too sticky.	
Exp n13 - Monday 6th	EVA n8 + Rubber Genan Fine Powder 20221122_01 (SMALL)	3gr in the small wood hole. 50% of each.	Wood	220 degree	20min	We put the rubber around the EVA and on all the borders of the mold. It worked pretty well. The material became flexible and strong. It did not stick and the aspect was good - similar to a tire (especially as it looked like it thanks to the rubber around). When we touched it with our hands, it felt like the material of a pad. We even tried to put it under water and the material did not change. Nothing was detaching.	
With these experiments we concluded that for the wood mold the most appropriate EVA is the number 8. In addition, for the pretty prototype Anne Laure told us to create (without rubber) we need to run more tests. We did not took them out of the mold properly and way too early hence we do not know which one will keep the shape the best. We should try in bigger molds, more representative of the real one. 							
Exp n14 - Wednesday 8th	EVA n8 + Climbing powder	26.03gr	Wood	200 degree	40min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Excellent result! The material did not stick to the mold at all and it took the shape of the wood stick. In addition, very flexible and easily malleable. CONCLUSION - CLIMBING POWDER IS EXCELLENT	
Exp n15 - Wednesday 8th	EVA n8 + Lubricant	15.8gr	Wood	200 degree	40min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Very bad result. Was stuck to the mold and impossible to detach. CONCLUSION - WE WILL NOT USE THE LUBRICANT AS IT STICKS TO THE MOLD	
Exp n16 - Wednesday 8th	EVA n8 + Oven paper	21.91gr	Wood	200 degree	40min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Was easily detached from the mold. Took roughly the shape of the wood stick. Was very hard to detach the oven paper from the material itself. Not the best option. CONCLUSION - SHOULD NOT USE OVEN PAPER AS IT STICKS TO THE MATERIAL	
Exp n17 - Wednesday 8th	EVA n8 + Aluminium		Wood	200 degree	25min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Did not work at all. Was easy to remove it from the mold but the aluminium stick to the material. Impossible to detach it. CONCLUSION - WE WILL NOT USE THE ALUMINIUM AS IT STICKS TO THE MATERIAL	
Exp n18 - Wednesday 8th	EVA n5 + Climbing powder		Wood	200 degree	25min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Excellent result! The material did not stick to the mold at all and it took the shape of the wood stick. In addition, very flexible and easily malleable. It was even better than the n8 EVA. More flexible and looked better - took the shape even better. CONCLUSION - CLIMBING POWDER IS EXCELLENT & EVA 5 LOOKS BETTER THAN 8.	
Exp n19 - Wednesday 8th	EVA n5 + Lubricant		Wood	200 degree	25min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Very bad result. Was stuck to the mold and impossible to detach. CONCLUSION - WE WILL NOT USE THE LUBRICANT AS IT STICKS TO THE MOLD	
Exp n20 - Wednesday 8th	EVA n5 + Oven paper		Wood	200 degree	25min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Weirdly it was easy to remove it from the mold and the oven paper did not stick to the material. Weird cause it stuck to the EVA n8. Could be because we waited longer before trying to remove it. CONCLUSION - WE COULD POTENTIALLY USE THE OVEN PAPER	
Exp n21 - Wednesday 8th	EVA n5 + Aluminium		Wood	200 degree	25min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). After 10 to 15 min (until it cooled down) we removed it. Did not work at all. Was easy to remove it from the mold but the aluminium stick to the material. Impossible to detach it. CONCLUSION - WE WILL NOT USE THE ALUMINIUM AS IT STICKS TO THE MATERIAL	

Exp n22 - Wednesday 8th	EVA n8 + Rubber Genan Fine Powder 20221122_01 (SMALL) + Climbing Powder	Climbing powder in the mold. Then, rubber in the bottom covered with EVA	Wood	200 degree	40min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). However, had to wait longer than 10-15min to remove it as it took longer to cool down. Could be due to the rubber. Once cold, we removed the stick and the result was not that good. Was kind of easy to remove but did not look good. CONCLUSION - EVA 8 IS NOT THE BEST WITH RUBBER	
Exp n23 - Wednesday 8th	EVA n8 + Rubber Genan Fine Powder 20221122_01 (SMALL) + nothing in the mold	Climbing powder in the mold. Then, rubber in the bottom covered with EVA	Wood	200 degree	40min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). However, had to wait longer than 10-15min to remove it as it took longer to cool down. Could be due to the rubber. Very bad result. When there is nothing in the mold (like climbing powder) it sticks to the mold and cannot be removed. CONCLUSION - SHOULD PUT CLIMBING POWDER IN THE MOLD	
Exp n24 - Wednesday 8th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL) + Climbing Powder	Climbing powder in the mold. Then, rubber in the bottom covered with EVA	Wood	200 degree	30min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). However, had to wait longer than 10-15min to remove it as it took longer to cool down. Could be due to the rubber. Once cold, we removed the stick and the result was good. Materials were well fused together. Did not stick to the mold nor the wood stick. Took the shape of the wood stick perfectly. It was a bit rough (rugueux) so exactly what we're looking for. And it was flexible and strong. Will not break apart and will resist water. CONCLUSION - EVAS SEEMS TO BE THE PERFECT ONE AS WORKS WELL WITH RUBBER & CLIMBING POWDER	
Exp n25 - Wednesday 8th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL) + nothing in the mold	Climbing powder in the mold. Then, rubber in the bottom covered with EVA	Wood	200 degree	30min	Right after we took it out of the oven we put a wood stick in the material (stick had been put in climbing powder in advance in order not to stick). However, had to wait longer than 10-15min to remove it as it took longer to cool down. Could be due to the rubber. Very bad result. When there is nothing in the mold (like climbing powder) it sticks to the mold and cannot be removed. CONCLUSION - SHOULD PUT CLIMBING POWDER IN THE MOLD	
Exp n26 - Wednesday 8th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL) + Climbing Powder.	Climbing powder in the mold. But this time, rubber and EVA are mixed (50% of both). More precisely - 50.31 gr for both	Wood	200 degree	30min	Immediately after taking it out of the oven we realized that putting that much rubber would not work. Combination was not good and the materials not homogeneous enough. Would not be able to take it out of the mold. Will never be flexible or solid enough. We would therefore need to put way less rubber in the pad. CONCLUSION - TOO MUCH RUBBER DOES NOT WORK	
Exp n27 - Wednesday 8th	EVA n8 + Rubber Genan Fine Powder 20221122_01 (SMALL) + Climbing Powder.	Climbing powder in the mold. But this time, rubber and EVA are mixed (50% of both). More precisely - 33.33 gr for both	Wood	200 degree	40min	Immediately after taking it out of the oven we realized that putting that much rubber would not work. Combination was not good and the materials not homogeneous enough. Would not be able to take it out of the mold. Will never be flexible or solid enough. We would therefore need to put way less rubber in the pad. CONCLUSION - TOO MUCH RUBBER DOES NOT WORK	
Exp n28 - Wednesday 8th	EVA n5 + Rubber Genan Fine Powder 20221122_01 (SMALL) + Climbing Powder.	Climbing powder in the mold. Only rubber in the bottom of the mold, covered with EVA.	Wood	230 degree	25min	To explain a bit more the process - we wanted to try it in a bigger mold, more representative of the real pad. Hence, we created a huge and rough pad with some squares in the middle, to see how perfectly the materials will take the shape of these squares. We put a lot of climbing powder in the mold and rubber in the bottom then covered it with Evas. We put it in the oven for approximately 25min at 230 degree. When we took it out we tried to press it with a plank of wood. We did not use the press but instead we put some weight on top (give the same effect). Once cooled down, we took off the weights and tried to remove it from the mold. It was kind of hard to remove it, took a lot of time. Hence, maybe we could put more powder or remove it a bit earlier (cause we removed it 48 hours later). Regarding the results are excellent. The pad is very malleable, solid and flexible as shown on the picture. However, once removed it was not perfectly clean so we had to clean it a bit. For instance, we can see some white stains probably due to the climbing powder. Hence, we could try to put some vaseline as well or just clean it more properly. In addition, we tried putting it under water and the pad was very resistant and had an excellent grip thanks to the rubber layer (exactly what we were trying to obtain). Finally, we had to remove with a cutter the EVA surplus; takes time but not a problem. CONCLUSION - VERY GOOD RESULTS WITH EVAS & RUBBER & CLIMBING POWDER. ONLY THING IS - SOME STAINS.	
With these experiments we concluded that the aluminum, the lubricant and even the oven paper were not suitable for our product. Instead we decided to use climbing powder as it is easy to use, does not stick to the mold or material. In addition, regarding the EVA, we have chosen to use the number 5 as it suits best the mold and rubber and it's very flexible and solid. We have also decided to apply the rubber as follows: Only in the bottom of the mold and not that much otherwise the result is not good and the pad will not be flexible enough. Furthermore, the melting temperature should be 230 degrees or maybe a bit less. And the time it should stay in the oven approximately 20 to 25 degree with the Eva 5. We will then try it in the real mold with all these new information.   							

Appendix I: Genan fine

Tamanho de granulado



- Análise granulométrica
- Ficha técnica
- Ficha de dados de segurança
- Sustentabilidade

GENAN FINE

O granulado de borracha GENAN FINE é um granulado de borracha de alta qualidade com uma mistura de tamanhos de grão entre 0,8 e 2 mm.

Siga os links para download à esquerda para obter uma análise granulométrica típica, uma ficha técnica ou uma ficha de dados de segurança.

Além disso, convidamo-lo a ler sobre as aplicações sugeridas para este produto, e a ler mais sobre a sustentabilidade dos produtos de borracha Genan em geral.

0,8 – 2,0
mm



Appendix J: Genan fine mix



- Análise granulométrica
- Ficha técnica
- Ficha de dados de segurança
- Sustentabilidade

GENAN FINE/MIX

O granulado de borracha GENAN FINE/MIX é um granulado de borracha de alta qualidade com uma mistura de tamanhos de grão entre 0,8 e 3 mm.

Siga os links para download à esquerda para obter uma análise granulométrica típica, uma ficha técnica ou uma ficha de dados de segurança.

Além disso, convidamo-lo a ler sobre as aplicações sugeridas para este produto, e a ler mais sobre a sustentabilidade dos produtos de borracha Genan em geral.

O granulado de borracha GENAN FINE/MIX pode ser entregue a granel, em Big Bags de aprox. 1,05 toneladas ou em sacos de 25 kg.

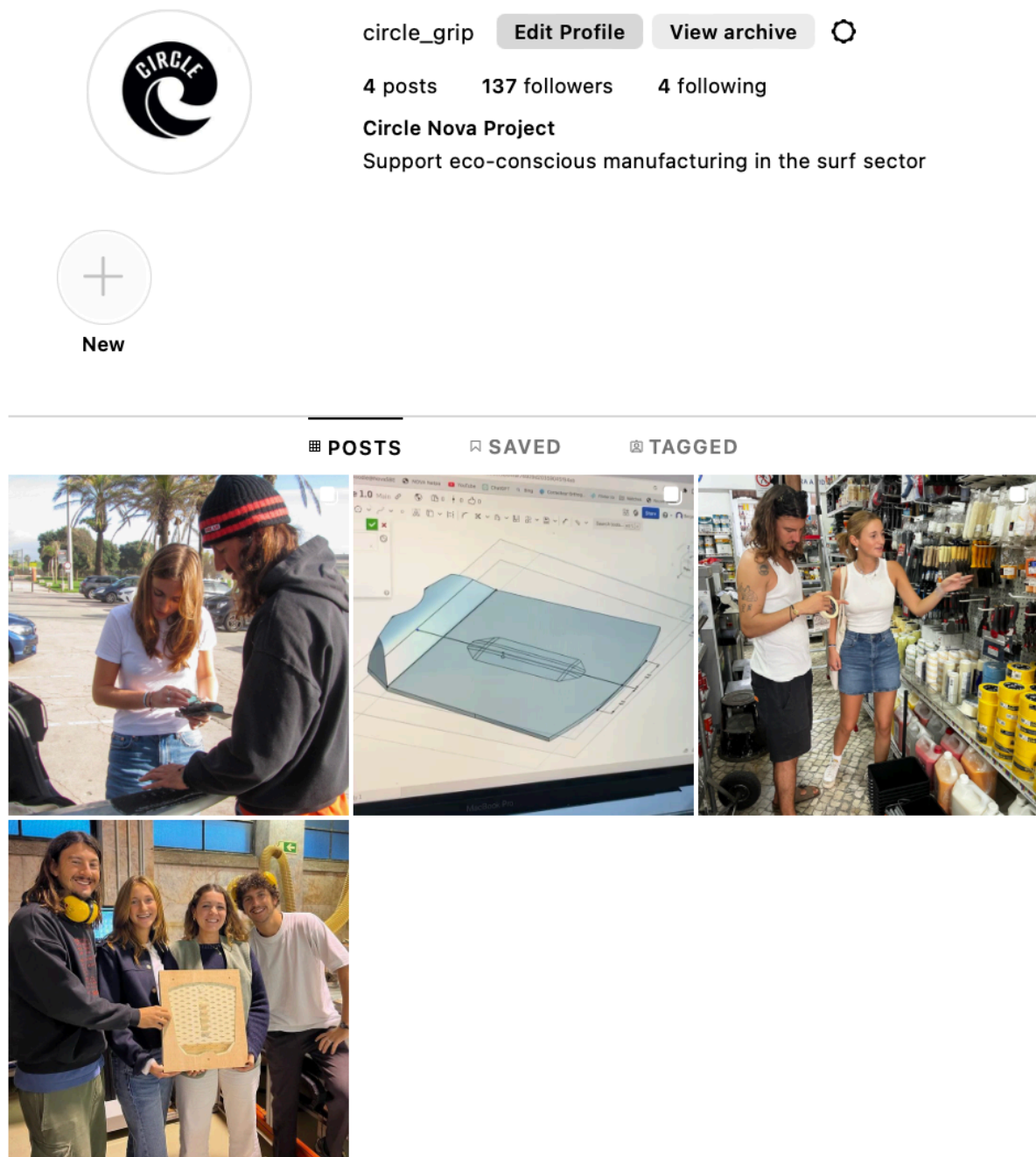
0,8 – 3,0
mm



Appendix K: Business Model

Key Partners Circle has forged crucial alliances with industry leaders to procure essential materials: Genan supplies high-quality rubber granules from recycled tires; Eurovetropac provides durable recycled EVA; 3M contributes supplying adhesive technology; Diaclenshop offers talcum powder. The partnership with Fab Lab Lisboa ensures crucial mold development and experimentation for our eco-friendly surf pad production.	Key Activities Raw material procurement Product development and manufacturing Quality control and performance testing Sales and customer service Marketing initiatives Research and Development (R&D) Financial Management Key Resources Material Resources Rubber granules, recycled EVA, adhesive glue, talcum powder and molds. Human Resources: Founder Team Relationships with key suppliers Sales and Marketing Team Financial Resources Investment and Funding Revenue Generation	Value Propositions Circle offers innovative, high-performing surf pads crafted from recycled rubber, filling a crucial gap in the market. Our dedication to sustainability and environmental impact empowers us to transform waste tires into a solution, not just a product. With a pioneering approach, we lead the eco-friendly surf pad industry, delivering not just a quality item but a powerful answer to global tire waste challenges.	Customer Relationship Provide personalized service to B2B and B2C. Offer after-sales support. Establish a feedback mechanism. Maintain open communication through various channels. Build brand loyalty fostering strong relationships with customers. Establish strong and collaborative partnerships. Engage the community through initiatives. Channel Online sales platform E-commerce platforms Retail partnerships Direct sales Online advertising Social media and influencer marketing Partnership with surf schools and surf shops	Customer Segments Circle's customer segmentation revolves around two key segments: B2B and B2C. Within the B2B segment, the focus is on establishing partnerships with surf schools, surf shops, associations, and collectives in Carcavelos, Cascais, and Costa Caparica. The B2C segment targets diverse subcategories within the surfer community, including professional athletes, influential free surfers, and regular surf enthusiasts. This multi-tiered strategy enables tailored product offerings and engagement strategies to meet the specific needs and aspirations of each subcategory, fostering a comprehensive impact within the surfing ecosystem.
Cost Structure Material costs (per pad grow annually at 1% due to the PPI in Portugal). Fixed costs (capital expenditures) include depreciation of aluminum molds, ovens, and the use of a granite board as a natural press. Additional costs encompass various tools necessary for the production process. SG&A expenses cover marketing, rent, website packages, SEO, and general administrative expenses. Other expenses account for miscellaneous unforeseen costs, estimated as a percentage of the total revenue.			Revenue Stream Circle's revenue model primarily revolves around the sale of its flagship product, the traction pad, targeting both B2B and B2C markets. The company focuses on direct sales through traditional and online channels for the B2C segment, encompassing athletes, free surfers, and enthusiasts. In the B2B realm, Circle adopts a wholesale approach, offering traction pads at competitive rates to surf schools, associations, shops, and collectives. By concentrating on straightforward one-time payments, the company aims to establish a stable cash flow, fostering lasting partnerships and market penetration while enabling continuous investment in product refinement and production optimization.	

Appendix L: Instagram Account & LinkedIn account



Link to LinkedIn Account:

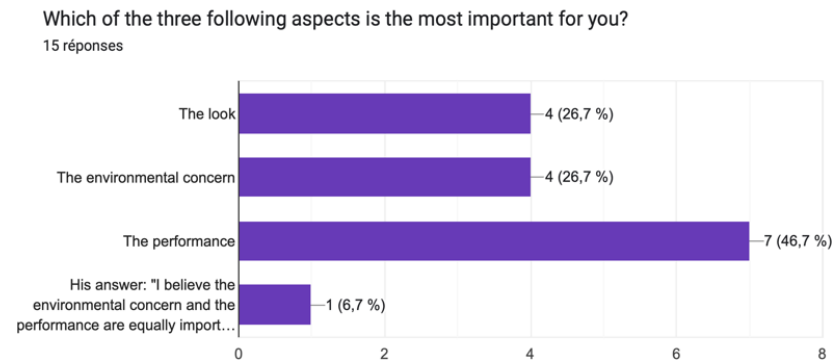
<https://www.linkedin.com/company/99076505/admin/feed/posts/>

Appendix M: Product Validation Survey & Results

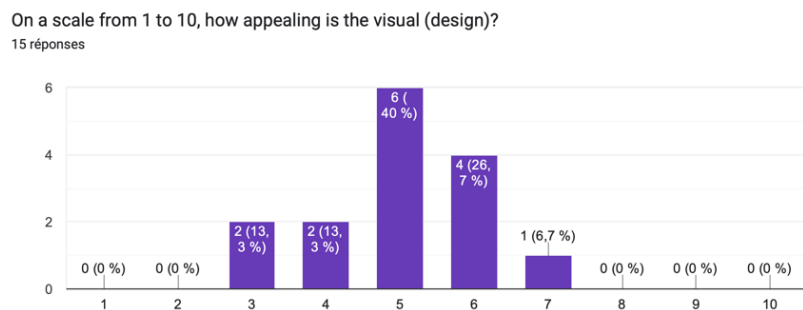
Link to the B2C survey: <https://forms.gle/mpH1Q4R7xzg3Jh226>

Link to the B2B survey: <https://forms.gle/kNTUk9Ewz6PVTMyg9>

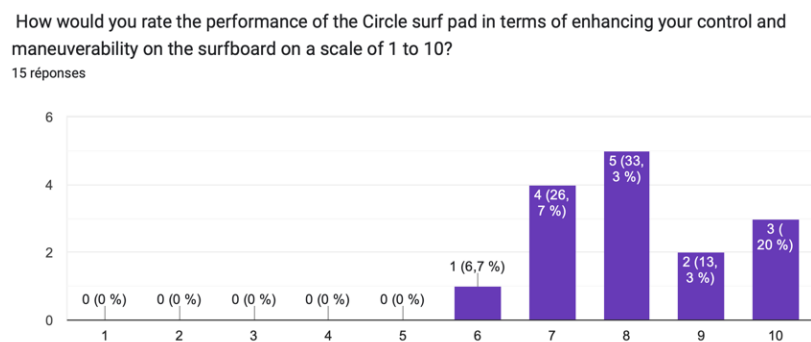
Graph 1



Graph 2



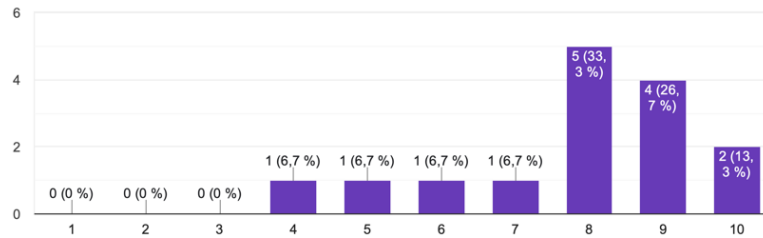
Graph 3



Graph 4

How comfortable, on a scale from 1 to 10, was the Circle surf pad under your feet during various maneuvers on the surfboard?

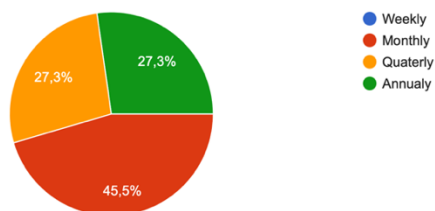
15 réponses



Graph 5

How often do you introduce new products to your shop?

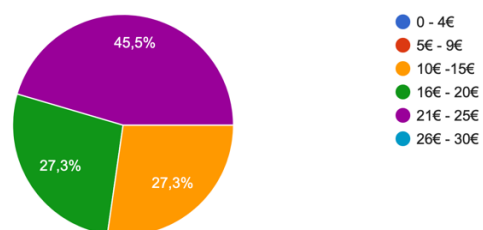
11 réponses



Graph 6

if our selling price would be 34.90€, at what range of price would agree on a collaboration with our final saleable product ?

11 réponses



References:

3M Science. *Applied to Life*. 3M United States. (n.d.). <https://www.3m.com/>

Accelerator - sustainable ocean alliance ocean solutions community. Accelerator - Sustainable Ocean Alliance Ocean Solutions Community. (n.d.). <https://www.soalliance.org/ocean-solutions-accelerator/>

Active people would spend more money on sustainable products. (2021, November 30). ISPO.com. <https://www.ispo.com/en/markets/consumption-study-sports-customers-pay-more-sustainability>

Bicudo, P., & Horta, A. (2009). *Integrating surfing in the socio-economic and morphology and coastal dynamic impacts of the environmental*. ResearchGate. https://www.researchgate.net/publication/228501402_Integrating_Surfing_in_the_Socio-economic_and_Morphology_and_Coastal_Dynamic_Impacts_of_the_Environmental_Evaluation_of_Coastal_Projects

Bicudo, P., & Horta, A. (2009). *Integrating surfing in the socio-economic and morphology and coastal dynamic impacts of the environmental*. . . ResearchGate. https://www.researchgate.net/publication/228501402_Integrating_Surfing_in_the_Socio-economic_and_Morphology_and_Coastal_Dynamic_Impacts_of_the_Environmental_Evaluation_of_Coastal_Projects#pf3

Carrera, C. (2023, October 10). *Traction pads for surfing: The Good, the bad, and the Ugly*. RSPRO. <https://www.rspro.org/blogs/stories/traction-pads-for-surfing-the-good-the-bad-and-the-ugly>

Chrispim, M. C., Mattßon, M., & Ulvenblad, P. (2023). *The underrepresented key elements of Circular Economy: A critical review of assessment tools and a guide for action*. *Sustainable Production and Consumption*, 35, 539–558. <https://doi.org/10.1016/j.spc.2022.11.019>

Creative, E. G. (n.d.). *Home*. Hultprize. <https://www.hultprize.org/>

Custom Surfboards Portugal | Habitus Surfboards. (n.d.). Habitus Surfboards. <https://www.habitus-surfboards.com/>

Definition, B. (2023, September 28). *Home | Sports and Fitness Industry Association*. Sports and Fitness Industry Association. <https://sfia.org/>

EcoIberia (2023, November). *EcoIberia* - <https://www.ecoiberia.pt/about/who-we-are/>

Eu, F. (n.d.-a). *FCS T-3 Eco Traction*. FCS EU. <https://www.surffcs.eu/products/fcs-t-3-eco-traction>

Eu, F. (n.d.). *SURFBOARD GRIP & TRACTION PADS*. FCS EU. <https://www.surffcs.eu/collections/traction>

EuroVetroCap: Cosmetic Packaging Manufacturing. (2023, October 24). *Eurovetrocap: Produzione Packaging E Contenitori Cosmetici*. <https://www.eurovetrocap.com/en/>

Genan Inc. (2023, November 13). Genan – reciclagem de pneus em fim de vida de forma ambiental. Genan. <https://www.genan.pt/>

Global Tire Manufacturing Output to Grow 3.4% Year-on-Year | Smithers. (n.d.). Smithers. <https://www.smithers.com/resources/2019/jun/global-tire-manufacturing-output-to-grow-by-2024>

Groupe Michelin |Innovation, Incubator Program Office. (2023, May 16). Michelin. <https://www.michelin.com/innovation/open-innovation/michelin-innovation-lab/>

Paolo Spinelli (2022, March 25). *Gomma naturale e gomma sintetica: tipologie, applicazioni e mercato.* Plastmagazine. <https://www.plastmagazine.it/gomma-naturale-e-gomma-sintetica/#:~:text=La%20gomma%20%C3%A8%20un%20materiale,da%20elasticit%C3%A0%2C%20resilienza%20e%20tenacit%C3%A0.>

Porsche and Sebastian Steudtner present surfboard. (n.d.). Porsche Newsroom. <https://newsroom.porsche.com/en/2023/company/porsche-engineering-sebastian-steudtner-surfboard-cacador-rs-32469.html>

Product-Market fit. (2023, August 8). <https://www.productplan.com/glossary/product-market-fit/>

Statista. (2022, August 26). *Global surfing industry market size 2022-2027.* <https://www.statista.com/statistics/1327319/surfing-market-size-worldwide/>

Statista. (2023, August 29). *Sports and outdoor e-commerce revenue worldwide 2017-2027, by segment*. <https://www.statista.com/forecasts/1362447/sports-and-outdoor-e-commerce-revenue-worldwide>

Surfboard traction Pads - Shop the selection online. (n.d.). Quiksilver. https://www.quiksilver.pt/surf-surf-shop-homem-acessorios-pads/#?intcmp=qs_hp_access_surf_product-2

Surfing Equipment Market Size, Share & Trends Analysis Report By Product (Apparel & Accessories, Surfing Boards), By Distribution Channel (Online, Offline), By Region (APAC, North America), And Segment Forecasts, 2021 - 2028. (n.d.). <https://www.grandviewresearch.com/industry-analysis/surfing-equipment-market>

Welcome | FabLabs. (n.d.). *FabLabs.io - the Fab Lab Network.* <https://www.fablabs.io/>

What is? Definition of , Meaning - The Economic Times. (n.d.). The Economic Times. <https://economictimes.indiatimes.com/definition/pricing-strategies>