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

CAFECO:
TRANSFORMING COFFEE WASTE INTO SUSTAINABLE COFFEE CUPS
-
PRODUCT DEVELOPMENT AND PARTNERSHIPS

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Group Part

Abstract

This work project examines the development and validation of *Cafeco*, a sustainability-driven startup transforming used coffee grounds into reusable cups. Guided by Eric Ries' Lean Startup methodology, the study focuses on validating key leaps of faith, including market interest, customer willingness to pay, scalability of production, and the sustainability of the business model. Through iterative experimentation and data-driven insights, *Cafeco* refined its business strategies to align with its mission of promoting sustainable living and circular economy principles. The research highlights how entrepreneurial agility can address environmental challenges and create meaningful impact.

Keywords: circular economy, upcycling, waste reduction, environmental impact, sustainability, entrepreneurship, lean startup, coffee, coffee waste, reuseable coffee cups.

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AI Disclaimer:

New breakthrough technologies, such as the internet in the late 20th century and now artificial intelligence, are repeatedly revolutionizing scientific research (Donato 2024, 37). AI tools can demonstrably add sustainable and responsible value to academic work without affecting originality and intellectual contributions (Salvagno, Taccone, und Gerli 2023, 75). However, the ethical integrity of AI-powered tools is essential to maintain academic integrity. In this paper, we have used AI tools such as ChatGPT, Grammarly, and DeepL with great care to improve the clarity and grammar of our texts. This helps non-native speakers who often face challenges in writing such papers (Kim et al. 2024, 2). In addition, we used ChatGPT for research and structuring texts, as well as to challenge our own ideas. We were always aware that such tools lack subject matter understanding and cannot replace human intelligence, which is why all outputs were checked for accuracy, validity, and contextual meaning and by adhering to Nova SBE ethical AI guidelines (Nova School of Business and Economics, n.d.).

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Part I: Group Part

1. Introduction

This work project was created by three students of the M.Sc. in Impact Entrepreneurship and Innovation (MIEI) and is composed of four main parts: one group section (30 pages) and three individual sections (15 pages each). Together, they document our entrepreneurial journey within the MIEI Field Lab. The primary objective of this Field Lab was to validate the key assumptions behind our venture, ensuring it could evolve into a self-sustaining, impact-driven business. Beyond external validation, we also aimed to identify a problem that personally resonated with all three team members, allowing us to build a venture we genuinely believe in.

Over the course of the Field Lab, from September 1st to December 17th, we explored two distinct projects. We began with GenerationalLiving, but as we investigated the market, our initial assumptions did not hold. On October 7th, we therefore pivoted to Cafeco. Although we spent five weeks on GenerationalLiving, the majority of our efforts focused on Cafeco. As a result, this thesis predominantly examines Cafeco's development and validation process. Our approach followed lean startup principles. While the complexity of GenerationalLiving's problem area required Steve Blank's methodology, Cafeco's solution-focused validation processes were for the most part based on Eric Ries' Build-Measure-Learn framework. The rationale for these choices will be explained in the respective chapters.

The individual sections of this thesis each address a specific aspect of the project: "*Product Development and Partnerships*" (Moritz Joachim Basse), "*Customer Discovery*" (Anton Schwarberg), and "*Marketing and Sales*" (Ji Yen). A joint concluding section will present a summary of our measurable impact, limitations, key learnings and future outlook. This final segment is counted as part of the group contribution.

2. Previous Entrepreneurial Journey

„A startup's runway is the number of pivots it can still make. The goal is to pivot through failures into success"(Ries 2011, chap. 8)

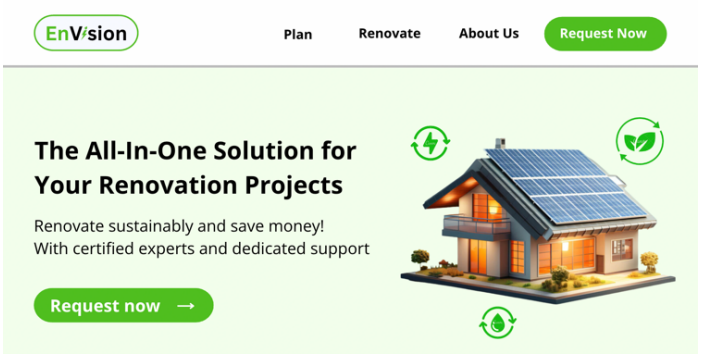
In his book "The Lean Startup", Eric Ries emphasizes the importance of learning as one of the main goals of startups. Validated learning often results from unsuccessful attempts to validate assumptions. According to Ries, regularly rethinking and changing the direction of a company's strategy and focus, also known as pivoting, is not a failure. It is part of the entrepreneurial journey as long as you learn from the insights you gain (Ries 2011, chap. 8). In the following section, we will, therefore, share part of our entrepreneurial journey in order to better understand the key lessons we learned along the way and how Cafeco came to be.

EnVision: Energy Consultancy Software

Our journey began back in December 2023 as part of the Entrepreneurial Journey course, in which we were supposed to carry out and validate a start-up project, at least in theory. After carefully putting together the team, which is one of the most important prerequisites for successfully completing a start-up project, we focused on identifying a problem that we wanted to solve (Ries 2011, chap. 8)

After numerous interviews with start-ups and companies, we finally came across a relevant problem: the inefficiency of energy consultants in Germany. Energy consultants help private homeowners plan, advise on, and apply for state funding for the sustainable renovation of their homes. However, they often work with inefficient methods for data collection and processing. This data is manually transferred into complex software, which some energy consultants criticized as being time-consuming and prone to error.

Figure 1: Landingpage Mockup for EnVision



This was the starting point for our "*Envision*" project, a platform for efficient energy consultation data collection.

But why did we fail with this project? Although we had found a clearly identifiable problem, which we were able to validate in more than 30 interviews with energy consultants and other affected companies, we focused too much on the problem and less on other aspects that are important for successfully solving a problem. On the one hand, we were missing the required technical abilities to solve the problem, and on the other hand, we lacked the passion and personal connection to fully understand, feel, and solve the problem. After contacting various software companies and energy consultants, who gave us insights into their working methods, we found that the energy consultant programs are too complex, and even experienced software companies with the ability to solve this problem have no interest in solving it. Envision, therefore, remained only a project in the context of the course and a theoretical, non-implementable solution for a validated problem to which we ourselves had no personal connection. In the future, we will not only look for validation of a problem but also ensure that we have the technical skills, necessary network, and personal motivation to solve the problem sustainably and successfully (Cardon et al. 2009, 511–512).

Figure 2: Problem with EnVision

Approaching the Work Project

Despite the educational but also challenging Envision project, we felt that we complemented each other well as a team so we decided to continue working together and approach our work project together. This time, we not only focused on finding a real problem but also tried to find something that affected and interested us personally. Furthermore, we wanted to implement

something to create a real positive impact and not just be limited to the theoretical validation of a problem. In addition, we wanted to create something that we could perhaps continue to pursue after completing our master's and that had the chance of resulting in the founding of a real startup.

After numerous intensive brainstorming sessions (Appendix 1), we came up with two problems and two possible solutions that we wanted to take a closer look at:

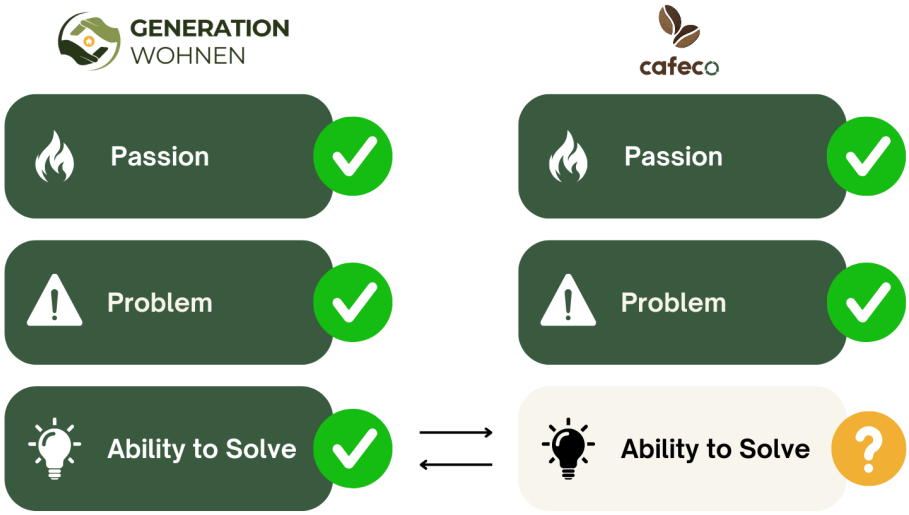
1. Intergenerational Living Platform: We found out that Senior citizens in Germany often face loneliness and live below the poverty line, while students struggle to find affordable housing in major German cities. We, therefore, thought of a dedicated online platform that connects these two groups to promote intergenerational exchange and meet housing needs. We were ambitious to tackle this dual problem, as Family members working in geriatric care repeatedly highlighted these issues, and we experienced first-hand the housing challenges students encounter. Furthermore, a platform to connect the two target groups seemed feasible to us, since we already had experience building websites.

2. Reusable Coffee Cups from Coffee Grounds: As passionate Coffee drinkers, we were aware of the issue, that excessive amounts of coffee grounds go to waste, while disposable coffee cups remain a severe environmental concern in coffee-intensive nations such as Germany and Portugal. Further research has shown that coffee grounds are a material that is particularly suitable for reuse. When combined with other natural materials, they can be used to make a variety of products, such as candles, plates, or lamps. Our idea was born: we wanted to create a reusable cup composed of recycled coffee grounds and thereby align with circular economy principles.

The decision to prioritize the Intergenerational Living Platform was based on two main considerations: feasibility and the ability to address an urgent problem. Developing a platform

to match students and seniors felt achievable within the scope of the field lab, given the team's skills and available resources. The technical and logistical challenges of designing and launching such a platform were well within reach. By contrast, creating a reusable cup composed of recycled coffee grounds required a highly technical process to upcycle coffee grounds into durable materials, an area where our team lacked immediate expertise.

Figure 3: GenerationalLiving vs. Cafeco



GenerationalLiving

The first initiative of our Field Lab, GenerationalLiving, aimed to address two pressing societal challenges: the housing shortage and the threat of poverty among students, as well as the increasing loneliness among seniors. According to the German Federal Statistical Office (Destatis 2024), about one third of German students are at risk of poverty. This risk is exacerbated by rapidly rising rents, with rents rising up to 22% within a year and more than 100% in within 10 years in some German university cities and (Immowelt 2023; Janson 2021). On the other side of the age spectrum, loneliness is a growing concern. Eyerund and Orth (2019) found that 10.8% of German elderly feel often or very often lonely.

GenerationalLiving's proposed solution was to encourage intergenerational housing arrangements, whereby seniors would offer unused living space to students in exchange for

companionship and light support. To evaluate the feasibility and potential of this idea, we applied Steve Blank's Customer Discovery Framework (Steven Blank 2006). This methodology focuses on early validation of assumptions through stakeholder engagement and rapid experimentation. Given the complexity and novelty of the intergenerational living concept, this approach was well-suited to assessing the problem's relevance, the target groups' needs, and whether such a solution could lead to a scalable, sustainable model.

Validation of Key Assumptions

The project was built around four critical assumptions. First, we assumed that the identified challenges genuinely affected both target groups—students and seniors. Second, we assumed that students would be willing to exchange companionship and light support for reduced housing costs. Third, we assumed seniors would be open to sharing their homes and receiving support from younger people. Finally, we believed a digital platform could effectively match these two groups.

To test these assumptions, we employed a combination of qualitative and quantitative research methods, expert consultations, community outreach, and prototyping. We conducted interviews and focus groups with seven students and thirty seniors (Appendix 2, Appendix 3). While students expressed enthusiasm, primarily driven by financial stress, seniors were markedly hesitant. Several issues emerged. Most seniors did not have an available room. Sharing a single bathroom was almost universally seen as unacceptable, making cohabitation difficult even where space existed. Additionally, there was a broad sense of skepticism and mistrust toward younger generations. Even more revealing, seniors took pride in their independence and were reluctant to accept help tied explicitly to a financial arrangement. They would rather receive help voluntarily than feel it was part of a rental agreement. A prototype website, generationwohnen.de, was created to attract interest and facilitate sign-ups, but participation-particularly from seniors - remained limited (Appendix 4).

Expert interviews with Sally Bird (Appendix 5) and Daniel Furhop (Appendix 6) reinforced these findings, indicating that the intended solution would likely not be widely adopted and suggesting a very low chance of achieving long-term self-sustainability.

Key Learnings

Our validation process for GenerationalLiving revealed critical challenges in implementing the intended solution. While the existence of housing crisis, age-related loneliness, and student poverty was real, the willingness to adopt our solution wasn't. Driven by financial stress, students were relatively quick to show openness and interest, but seniors displayed strong hesitance, disproving our third assumption. Additionally, the prototype website effectively communicated the concept but failed to drive significant senior sign-ups. This indicates that despite addressing genuine problems, the intergenerational living model did not align with seniors' preferences and living conditions.

Pivoting to Cafeco

After five weeks of research and validation, we pivoted away from GenerationalLiving due to significant challenges in creating a sustainable and scalable model for intergenerational living. While the idea addressed valid societal issues – student housing shortages and senior loneliness – the solution was simply not wanted. Gaining valuable macro-perspective from our meetings with Sally Bird and Daniel Furhop, we realized that almost none of the models aiming to connect seniors and students is self-sustaining, simply because the demand and willingness to adopt the model is so low. Having been confronted with constant invalidation and the realization that our business would constantly depend on charity and government support, we felt a deep disappointment.

On October 4th, we made the decision to pivot to a different field. When we first approached the project, we chose GenerationalLiving because we believed we lacked the ability to pursue

our other idea, coffee cups made from coffee grounds. However, in early October a new opportunity presented itself: We received funding from the Prototyping Fund, as well as contacts at BioLab and FabLab, where we could speak to experts and develop our own material. This opportunity motivated us to pursue our second project.

Even though the pivot was quite extreme – shifting from addressing multiple societal issues to working with waste streams – and again facing great uncertainty, we saw this as a chance to tackle a problem we were passionate about and capable of solving.

3. Cafeco

Starting with this chapter, the thesis focuses exclusively on Cafeco. After GenerationalLiving, we turned to a product-oriented idea: making reusable coffee cups more sustainable by incorporating coffee grounds into their material composition. The following chapters present the idea in detail and outline our validation process.

3.1 Methodology

This chapter describes the research methods applied to validate key assumptions and inform the development of our solutions and actions for Cafeco. It is divided into three sections: Primary Research, which focuses on primary data collection; Secondary Research, which outlines how literature and existing data informed our hypotheses and testing methods; and Entrepreneurial Framework, which explains the entrepreneurial approach we used to guide our research, testing, and decision-making. Together, these components form the foundation of our systematic and iterative approach to planning, executing, and steering our venture.

3.1.1 Primary Research

For our primary research, we employed a combination of qualitative and quantitative methods to collect data and validate the key assumptions underlying our venture. We began with interviews to better understand customer needs and gather initial feedback on our product concept. Based on these insights, we designed and conducted targeted validation experiments

to systematically test our hypotheses and critical assumptions. These experiments addressed different aspects of the venture - *Product Development & Partnerships, Customer Discovery, and Marketing & Sales* - and are discussed in detail in their respective chapters in the individual parts.

3.1.2 Secondary Research

Secondary research played an important role in making sure Cafeco's concept and validation experiments can be benchmarked with existing knowledge and informed by valid and relevant data.

Our secondary research focused on the environmental impact of spent coffee grounds and disposable coffee cups. Beyond problem analysis, we reviewed current sustainability trends, industry reports on the global coffee market, and specifically the coffee cup market, backed by statistical sources and scientific papers. Additionally, we conducted a competitive analysis of existing brands in the reusable coffee cup market to identify best practices, market gaps and areas of differentiation and improvement**.** This research informed our hypothesis development and the specific metrics we used for testing.

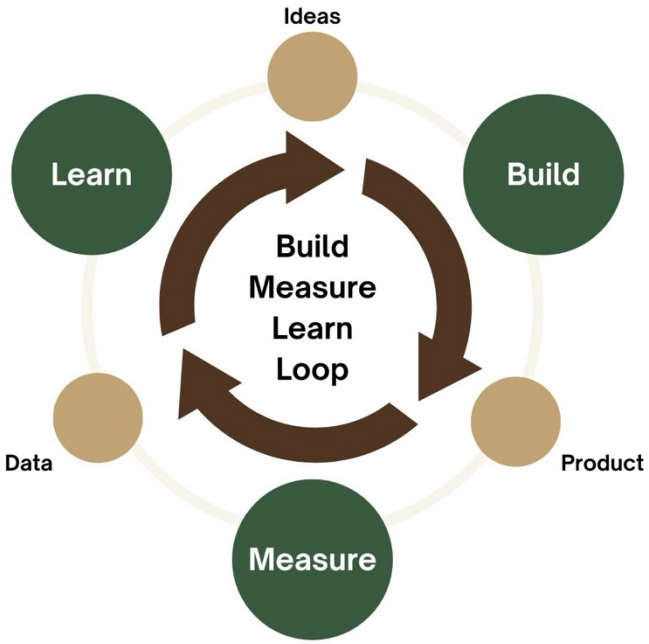
3.1.3 Entrepreneurial Framework

Starting a new venture involves navigating significant uncertainties, making a structured approach essential for success. Entrepreneurial frameworks provide a systematic method to address challenges, such as validating assumptions and testing hypotheses, and help making informed decisions. A framework enables entrepreneurs to tackle problem-solving and product development in a methodical way, ensuring that lessons learned are applied effectively. By applying a framework, entrepreneurs can mitigate risks and avoid common pitfalls. In contrast to GenerationalLiving, Cafeco innovates an existing solution - coffee cups made from spent coffee grounds. While the market for reusable coffee cups demonstrates a clear demand for sustainable alternatives, our project focused on validating the unique value and feasibility of

our solution. When selecting an entrepreneurial framework, we considered the 24 Steps of Disciplined Entrepreneurship and Eric Ries Build-Measure-Learn framework. Ultimately, we chose the latter, because it aligned with our need for speed and flexibility, focusing on validating key hypotheses and adapting to market demand rather than following the sequential and comprehensive structure of the 24 steps.

The Lean Startup Methodology is an entrepreneurial framework developed by Eric Ries (2011). It focuses on creating and managing startups in an intentional and iterative way. Its core principle is the Build-Measure-Learn (BML) cycle, which provides entrepreneurs with a structured approach to rapidly developing products or services by building a minimum viable product (MVP), gathering data from customer feedback, and using that feedback to refine their ideas and assumptions in continuous iterations. This method focuses on validating key hypotheses early to minimize waste and increase the chances of building something that meets market demand.

Figure 4: Build-Measure-Learn Framework



3.2 Problems and Opportunity

In "*The Lean Startup*", Eric Ries (2011) stresses the importance of learning whether a product solves a significant customer problem, for which he recommends using validated learning. In this section, we aim to showcase an overview of the problems and opportunities Cafeco is built on, and what market gap it fills. First, we will outline the environmental toll of coffee grounds

as a waste product and then explain how this aligns with the growing consumer demand for sustainable products.

3.2.1 Environmental Problems

The environmental problems Cafeco aims to address are multi-faceted. One significant issue is the disposal of spent coffee grounds (SCGs). The term "spent coffee grounds" refers to the grinds remaining after the desirable compounds in coffee have been extracted during the brewing process (McNutt and He 2019). SCGs are typically discarded as trash and end up in landfills, where they pose environmental challenges. Being organic material, SCGs require large amounts of oxygen to decompose (Franca and Oliveira 2022). This decomposition not only releases a substantial amount of greenhouse gases (GHGs) (Santos et al. 2017) but also risks contaminating soil and groundwater with bioactive compounds (Mahmoud, Atabani, and Badruddin 2022).

Table 1: SCGs and resulting CO_2 emissions, (Mussatto et al. 2011; San Martin et al. 2021)

	Europe	**Globally**
Total SCGs in million tons (Mt)	5,04 Mt	19 Mt
Landfilled SGCs in million tons (Mt)	2,32 Mt	8,74 Mt
Emitted CO2eq / year in million kg (Mg)	650 Mg	2479 Mg

The second waste problem Cafeco aims to tackle is the issue of disposable coffee cups. Not only do these cups often contain plastics and potentially harmful chemicals (Ranjan, Joseph, and Goel 2021), but they also emit significant amounts of GHGs. A mere 0.25% of these cups are estimated to be recycled, with the vast majority ending up in landfills or being improperly disposed of. Global disposable paper cup CO2 emissions are estimated to reach 7.5 Mt CO2eq, which is comparable to the annual emissions of approximately 1.5 million EU inhabitants (Foteinis 2020). To provide a more concrete perspective on the scale of waste: at Nova School

of Business and Economics, approximately 15,400 disposable paper cups were discarded between January 2024 and November 22, 2024 (Appendix7).

In summary, both SCGs and disposable coffee cups are detrimental to soil, water, and air when disposed of in landfills.

3.2.2 Consumer Shift towards Sustainable Products as an Opportunity

Not only science has recognized the problems of waste and GHGs, but consumers have as well. Environmental awareness creates an ongoing need for sustainable products. According to (Capgemini Research Insititute 2020), a significant percentage of consumers (79%) are changing their purchase preferences based on sustainability, with 72% personally concerned about their environmental footprint. Furthermore, a report by McKinsey and NielsenIQ (2023) identifies a clear correlation between sustainability-related claims and increased consumer spending. Brands with sustainable attributes often experience higher growth rates as a result.

This trend is particularly evident among Gen Z, a demographic that is becoming increasingly important to the consumer market. While interest in sustainability spans all age groups, Gen Z demonstrates a stronger inclination toward sustainable purchases (Frey et al. 2023).

3.3 Solution

As Eric Ries describes, building a solution is an iterative process that adapts during the validation phases (Ries 2011, chap. 8). Therefore, our business model and solution should not be seen as fixed pillars but rather as a basis and assumption for the subsequent validation steps.

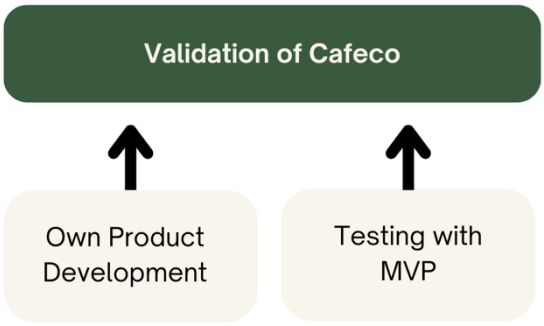
3.3.1 Our Targeted Solution & Value Proposition

Our targeted solution is a reusable coffee-to-go cup that is largely made from recycled coffee grounds. The cup is designed to be heat-resistant and reusable in the long term, promoting sustainability while keeping the environmental impact as low as possible.

Cafeco creates sustainable, reusable coffee cups by upcycling discarded coffee grounds, offering an eco-friendly alternative to single-use paper and plastic cups. By transforming waste into value, we align with circular economy principles and cater to the rising consumer demand for environmentally responsible products.

3.3.2 Parallel Approaches to Product Validation

Figure 5: Parallel Validation Strategy - Product Development and MVP



Although the Prototyping Fund provided us with financial resources and access to expertise, the limited time frame and the naturally time-intensive nature of production processes made it unrealistic to develop a fully marketable physical product within these constraints. Furthermore, it is inefficient and risky to develop a product directly and in its entirety without testing it on the market first (Ries, 2011, chap. 8). In order to obtain as much validated customer feedback as possible while also testing the feasibility of such a product, we have on the one hand, initiated product development and, on the other hand, obtained a Minimal Viable Product (MVP) through a partnership with 'Kaffeeform' - a German impact start-up. This enables us to obtain customer feedback directly and to pursue our validation goal on several levels.

Figure 6: Sizes and Colors of Cafeco

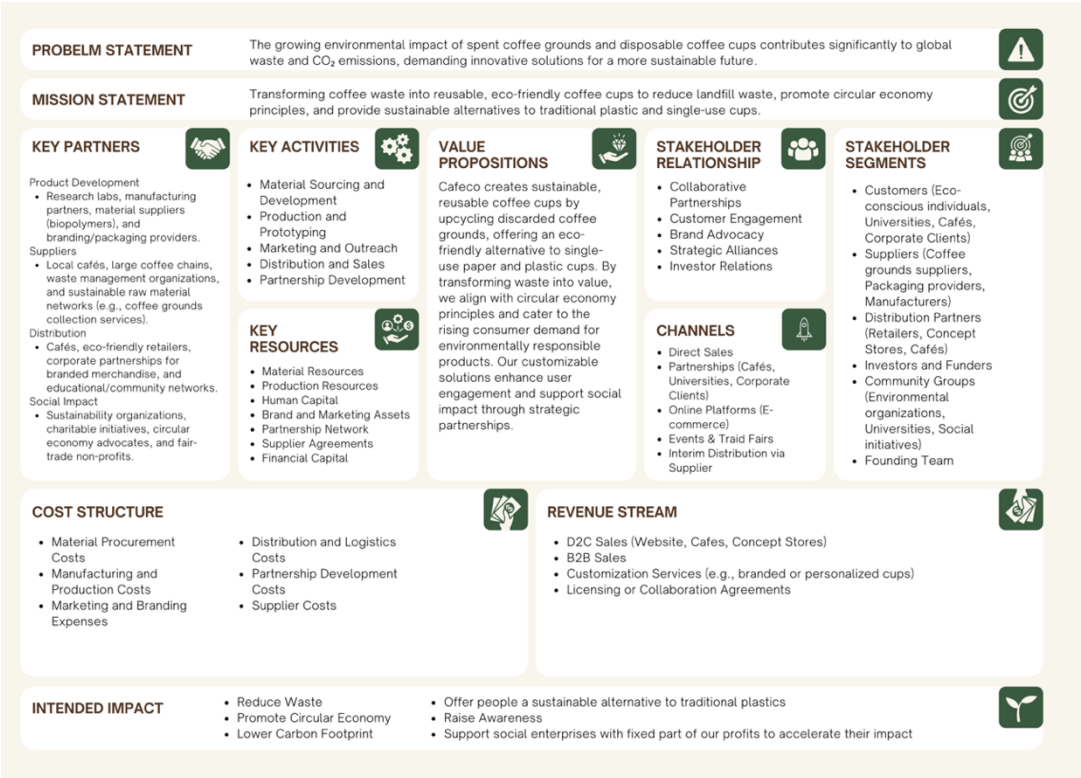
Our MVP comes in two different sizes, 250ml and 350ml, and in three different color types: "Cayenne", "Cardamon", and "Nutmeg". We know through our partnership with 'Kaffeeform'

that the wholesale prices of the cups are between €10 and €12. 'Kaffeeform' itself sells its cups for between €17 and €19. However, since our current focus is quick validation, we have set a competitive target price of €15 for a future Cafeco cup (*see Chapter 3.4.2: Competition Analysis*). In addition, we offer the option to personalize the cups with a logo through low-cost laser engraving. This has been made possible by our partnership with the FabLab Lisbon (Appendix 8).

3.3.3 Business Model

Our business model serves as a strategic tool to define and illustrate how Cafeco works. It shows how value is created, communicated, and monetized, and it helps to test, optimize, and successfully implement the business idea. To make our business model comprehensible and focus on the essential aspects, we used the Impact Business Model Canva (IBMC), an extended version of the Business Model Canvas developed by Alexander Osterwalder (Soule 2019). We chose this framework because it is specifically geared towards integrating social, ecological, and sustainable values into the business model. It also offers a strong focus on strategic partnerships and stakeholders, which are central to Cafeco's mission and scaling. Combined

Figure 7: Impact Business Canvas - Cafeco



with the iterative principles of the lean startup approach, the IBMC thus became the ideal foundation for the iterative development and validation of central business areas. A full page of the IBMC can be found in (Appendix 9).

Special elements of our business model:

Impact focus: for-profit with a social mission

Cafeco combines a profit-oriented business model with a clear social mission. In addition to the direct impact of recycling coffee waste and thus promoting the circular economy, a percentage of its revenues is donated to social organizations. This dual objective strengthens the brand identity and appeals to conscious consumers. The business model consistently represents sustainability, from the selection of materials to partnerships with organizations that also pursue similar ecological and social goals, which strengthens Cafeco's credibility in the market and achieves long-term customer loyalty.

B2B Sales with the option to individualize the Product

By offering B2B sales, we enable economies of scale and reduce production cost (cost per unit) due to higher order numbers. Through personalization, we allow business customers to tailor the product to their specific brand identity or functional needs, enhancing our overall value proposition and set ourselves apart from competitors.

Accelerated market entry through external product partners

In order to validate demand and willingness to pay as early as possible, Cafeco plans to source and distribute finished products from external partners in parallel with its own product development initiatives. This strategy enables a rapid market launch without high initial investments in production technology and resources and enables us to test customer demand immediately. Furthermore, it establishes a flexible production model that facilitates the transition to in-house manufacturing once sufficient market validation and capital are available.

3.4 Market Analysis

We chose Germany and Portugal as Cafeco's initial target markets due to their strong coffee cultures, growing environmental awareness, and practical advantages. Germany, one of Europe's largest coffee consumers, with 5.2 kg annual per capita consumption (ISN Magazine 2024), and Portugal, with similarly high coffee consumption (International Coffee Organization 2023), offered a solid foundation for introducing Cafeco's upcycled coffee cups.

Strategically, both markets provided unique advantages, given the location of our team members. With Moritz based in Lisbon and Anton and Ji in Germany, we leveraged our networks to engage local stakeholders, customers, and partners. Germany's eco-conscious mindset and larger consumer base allowed us to validate demand and assess scalability. At the same time, Portugal's community-driven market and Nova SBE's support—offering funding, prototyping facilities like BioLab and FabLab, and entrepreneurial guidance—enabled efficient product development and testing, more details follow in *Chapter 4. Product Development & Partnerships.*

Focusing on both markets allowed Cafeco to test its value proposition across complementary environments. For the market size and growth potential calculations we focused on Germany, as a more significant and data-rich market with higher purchasing power, offering robust insights for future scaling, while Portugal offered direct engagement with early adopters, providing critical validation for Cafeco's approach.

3.4.1 Market Size and Growth Potential

The Total Addressable Market (TAM), Serviceable Addressable Market (SAM), and Serviceable Obtainable Market (SOM) frameworks are applied to assess the market opportunity in Germany. The market size analysis identifies significant opportunities for Cafeco in Germany's reusable coffee cup market. The Total Addressable Market (TAM) is €300 million**,** representing Germany's 25% share of the €1.2 billion European market. Targeting eco-

conscious millennials and Gen Z consumers, the Serviceable Available Market (SAM) is €105 million**.** The Serviceable Obtainable Market (SOM), reflecting Cafeco's realistic early-stage market share, is €1.05 million**.** This analysis highlights strong growth potential driven by rising demand for sustainable products. A more detailed explanation of this calculation can be found in (Appendix 10).

Figure 8: Reuseable Coffe Cup market size in Germany (TAM, SAM, SOM)

3.4.2 Competition Analysis

The primary purpose of our competitive analysis is to identify market gaps, inform strategic decisions, and highlight Cafeco's unique value proposition. By understanding the competitive landscape, we are able to better differentiate ourselves, adapt to market dynamics, and ensure alignment with customer expectations and industry trends (White 2022). This analysis focused on businesses operating in the sustainable, reusable coffee cup market, as they align most closely with Cafeco's mission, target audience, and product offering. While the reusable coffee cup market includes a wide range of players, such as companies producing glass, metal, and plastic cups, Cafeco positions itself specifically within the sustainable-material segment, where competitors emphasize environmentally friendly materials like bamboo fiber, coffee husks, and recycled plastics. This segment is particularly relevant as it targets eco-conscious consumers who prioritize sustainability and innovation in their purchasing decisions. The following analysis identifies Cafeco's key competitors (HuskeeCup, Ecoffee Cup, and Circular&Co)

which were selected based on their material innovation, sustainability focus, and market presence. By comparing their business models, material choices, distribution channels, and unique selling points (USPs), we try to highlight Cafeco's unique differentiation within the circular economy. A detailed breakdown of this comparison can be found in Appendix 11.

Table 2: Competition Analysis - HuskeeCup

HuskeeCup	
Origin	Australia
Business Model	B2B and B2C
Sales Channel	Online, cafes, retail stores
Mission	Reduce coffee industry waste by repurposing coffee husks into durable, reusable cups.
Product Range	Reusable coffee cups, saucers, lids
Material	Recycled coffee husks
Price	€18

(HuskeeCup 2024)

Table 3: Competition Analysis - Ecoffee Cup

Ecoffee Cup	
Origin	UK
Business Model	B2C
Sales Channel	Online, retail chains, eco-stores
Mission	Eliminate single-use cups with lightweight, biodegradable bamboo fiber alternatives.
Product Range	Reusable bamboo fiber coffee cups
Material	Bamboo fiber
Price	€14

(Ecoffee Cup 2024)

Table 4: Competition Analysis - Circular&Co

Circular&Co	
Origin	UK
Business Model	B2B and B2C
Sales Channel	Online, B2B, sustainable product retailers
Mission	Drive the circular economy by creating reusable coffee cups from recycled and recyclable materials.
Product Range	Reusable coffee cups, bottles, circular products
Material	Recycled single-use paper cups
Price	€20

(Circular&Co 2024)

To conclude, there is competition in the market that Cafeco must carefully navigate moving forward. However, the presence of established players in the sustainable coffee cup market serves as proof of concept and market validation, demonstrating that there is a growing demand for eco-friendly alternatives. With this competitive overview, Cafeco has gained valuable insights into the strengths and approaches of key players in the sustainable coffee cup market. By leveraging this knowledge, Cafeco can refine its value proposition, focusing on its unique selling point—upcycling coffee grounds—and align its strategy to effectively differentiate from competitors, build brand loyalty, and capture market share in both Germany and beyond.

Figure 9: Competitive market analysis and USPs

	Huskee.	ecoffee cup	circular &co.	cafeco
Use of upcycled material	✓	✗	✗	✓
Focus on circular economy	✓	✗	✓	✓
Strong focus on sustainability storytelling	✗	✗	✓	✓
Personalization	✓	✓	✓	✓
Donating to charity	✗	✗	✗	✓
Competitive pricing	18€	14€	20€	15€

3.5 Intended Impact

We aim to have a positive impact in several areas.

Reducing the Amount of SCGs in Landfills

Using this waste stream benefits the environment in multiple ways. First, it reduces the amount of carbon dioxide (CO_2) and methane (CH_4) emitted during the biodegradation of spent coffee grounds (SCGs). Binding this CO_2 in a solid form prevents further biodegradation. While the exact amount of CO_2 emissions from landfill disposal is unclear, research by Birkenberg and Birner (2018) estimates it could be up to 0,26 kg CO_2eq per kg of SCGs.

Additionally, binding SCGs reduces the release of toxins into the soil and groundwater, as described in *Chapter 3.2.1: Environmental Problems*.

Reducing the Amount of Waste Generated by Disposable Coffee Cups

Offering a more sustainable alternative to disposable coffee cups reduces waste and CO_2 emissions in the long term. A study by Fetner and Miller (2021) found that the environmental payback period for reusable cups is about 43 uses compared to disposable paper cups. This means that after approximately 43 uses, reusable plastic cups reach a breakeven point, where their cumulative environmental impact, particularly in terms of greenhouse gas emissions (Global Warming Potential or GWP), becomes equal to or less than that of disposable paper cups with plastic lids. Beyond this point, every additional use of the reusable cup decreases its environmental impact per use compared to single-use cups.

Donating to a Social Organization

Cafeco aims to donate 5% of its revenue to a social organization. The exact details of building a donation partnership are discussed in *Chapter 4.2: Partnerships.*

A summary of the impact we have created between October 7th and December 17th can be found in *Chapter 7: Created Impact.*

3.6 Leaps of Faith and Hypotheses

When starting a new venture, it is important to define the most crucial hypotheses. These most crucial hypotheses are termed leaps of faith because the success of the venture relies heavily on their validity, and if disproven, they may require a significant pivot or could jeopardize the venture altogether (Ries 2011, chap. Steer). Clarifying these leaps of faith provides structure to the venture, identifies key areas to test, and forms the foundation of the Build-Measure-Learn loop. Once these assumptions are clear, hypotheses can be derived and tested through experiments (Ries 2011, chap. Steer).

In the following, we will describe the four leaps of faith identified for Cafeco, the corresponding hypotheses we chose to test, and the respective success metrics. It is important to note that we consciously selected hypotheses that could be realistically tested within a 9-week timeframe, from Cafeco's launch on October 7th to the week of December 9th.

3.6.1 Leaps of Faith

The following four leaps of faith form the foundation of our business model:

(1) There Is Market Interest and Demand for Upcycled Coffee Cups

Cafeco assumes there is a sufficient demand for sustainable, upcycled coffee cups to justify entering the market. This leap of faith is important because if proven to be wrong, there will be no significant sales, which results in no significant revenue stream and therefore no business survival.

(2) Customers Are Willing to Pay the Price for our Product

Having paying customers builds on having market demand. If there is demand, but no one willing to pay the price, the same scenario will happen as in the previous leap of faith. As mentioned before, price is a sensitive topics in our case, and is scientifically proven to be a purchase barrier (Liobikienė, Grincevičienė, and Bernatonienė 2017), making this leap of faith crucial to Cafecos survival.

(3) Our solution can be sustainably produced at scale and supported by key strategic partnerships such as suppliers and producers

This leap of faith refers to building solid partnerships with suppliers, producers, and other important partners, while implying that the product is producible and cost-efficient. This leap of faith is important because if disproven, Cafeco would be unable to meet market demand.

(4) Our Business Model is Able to Have a Positive Impact while Remaining Financially Self-Sustaining

For us, success is defined as maintaining a viable business that simultaneously drives meaningful impact. While creating positive impact does not always directly increase costs, it often raises production expenses due to ethical sourcing, sustainable materials, or other impact-driven practices. This challenge led us to define our fourth leap of faith: that our business model can balance these priorities and remain sustainable over the long term.

3.6.2 Hypotheses and Key Metrics

To make the leaps of faith tangible, we derived initial hypotheses that can be tested through experiments. Unlike a leap of faith, the outcome of a single hypothesis is not decisive for the survival of the venture. If proven wrong, learnings can be generated, and the venture's direction can be adapted. Only if multiple hypotheses are consistently proven wrong does the leap of faith itself come into question, potentially indicating the need for a fundamental reassessment of the idea. According to Ries' Lean Startup Methodology (2011), the most critical leaps of faith are validated through two types of hypotheses: the Value Hypothesis and the Growth Hypothesis. A Value Hypothesis confirms that the product solves a customer problem or need, validating its core purpose and appeal. A Growth Hypothesis ensures that the product can be scaled, demonstrating its potential to attract and retain a larger customer base over time. In addition, because our business model seeks to create a positive impact, we introduced two impact hypotheses to address this goal. The testing of the hypotheses is described in the individual sections.

Table 5: Hypotheses and Types, Key Success Metrics

Leap of Faith	Related Hypotheses	Related Key Success Metrics	Hypothesis Type
1. Market Interest and Demand	H1: If Cafeco posts sustainability-focused and visually engaging content on Instagram and TikTok, it will achieve a 3% engagement rate (likes, comments, shares) and gain 50 new followers within the first month.	Engagement Rate and Follower Gain	Growth
	H2: Until December 17th, Cafeco can get at least 2 meetings scheduled with organizations, indicating interest	Answers, Requested Information, Meetings Scheduled	Growth

2. Willingness to Pay	H3: At least 30% of those who took the survey are willing to pay at least €15 for the product.	Percentage of respondents indicating WTP	Value
	H4: Cafeco can make 5 sales by December 17th.	Sales / Timeframe	Growth
3. Product Development	H5: At least one material can be identified by the final showcase of the Prototyping Fund on November 25, 2024, that, in combination with coffee grounds, forms a mass capable of being shaped and holding hot liquids for at least 10min.	Identification of Material that meets criteria for shape ability and heat resistance	Value
	H6: Written agreements, such as Letters of Intent (LOI) or formal offers, are received from at least one partner in each area until 17. Dezember 2024.	Number of written agreements received from partners	Growth
4. Positive Impact	H7: The cumulative weight of coffee grounds used in all sold products is recorded and verified to meet or exceed 2,5 kg by December 17th	Total recorded weight of coffee grounds used in sold products (in kg) within timeframe	Impact
	H8: By integrating charitable giving into our business model, we will be able to donate at least 25€ of our revenue to a charitable organization by December 17, 2024.	Total amount donated to a charitable organization (in €)	Impact

Part II: Individual Part

Introduction and justification of individual parts

The following section explains the focus of each individual part, highlighting the critical issues addressed and their importance to the key leaps of faith being validated.

Product Development & Partnerships: The first part examines the technical feasibility of our product and establishing strategic partnerships. Critical issues include identifying a durable and heat-resistant material for the upcycled coffee cup and securing formal agreements with potential partners. The guiding leap of faith validates whether a suitable material can be developed and whether partnerships can support scalable production and affordable acquisition of our products to meet demand.

Customer Discovery: The second part addresses whether there is genuine market interest in Cafeco's upcycled coffee cups, if customers are willing to pay the target price, and the building of initial customer archetypes. It tests the leap of faith around demand validation and

willingness to pay through surveys, interviews, and engagement with organizations, ensuring alignment between Cafeco's offering and customer wants and needs.

Marketing & Sales: This part focuses on testing our ability to reach and convert our previous part's defined target audience through marketing campaigns. The critical issues include building brand awareness, driving engagement, and generating initial pre-sales. The to-be-validated leap of faith includes achieving market interest through social media performance and proving demand and willingness to pay through pre-orders.

4. Product Development & Partnerships

The following section covers the topics of product development and partnership strategy as two important pillars of Cafeco's validation actions. Both areas aim to validate the feasibility of our product, with product development focusing on research into suitable materials and the pure development of a prototype and partnerships rather on the feasibility and theoretical scalability of our targeted business model. To systematically evaluate the progress in validating these two areas, the central goal of this section is to examine the third leap of faith, which is to be validated based on suitable hypotheses.

Table 6: Leap of faith & Hypothesis Product Development & Partnerships

Leap of Faith	Hypotheses
(3) Our solution can be sustainably produced at scale and supported by key strategic partnerships such as suppliers and producers	H5: At least one material can be identified by the final showcase of the Prototyping Fund on November 25, 2024, that, in combination with coffee grounds, forms a mass capable of being shaped and holding hot liquids for at least 10min
	H6: Written agreements, such as Letters of Intent (LOI) or formal offers, are received from at least one partner in each area until 17. Dezember 2024.

The methodology in this section is based on Eric Ries' Lean Startup principles. In this context, we applied the Build-Measure-Learn framework to make informed decisions and to iteratively validate our hypotheses (Ries 2011, chap. 7-8).

4.1 Product Development and Iterative Testing

4.1.1 Objectives

Product development plays a central role in impact-driven startups such as Cafeco because it is at the core of value creation and has a direct influence on how effective and sustainable a desired solution actually is. Therefore, the overall objective of Product development of an impact venture is to create a product that meets both functional and ecological requirements. Such ecological requirements include the use of renewable or recycled materials, biodegradability or circular economy compatibility, a low carbon footprint, and durability of the product. Considering the early stage in which Cafeco currently operates, Cafeco's goal in the area of

product development is to find a suitable material composition and develop an MVP. This approach is a common step for early-stage startups, as an MVP makes it possible to test core functions on the market early on, thereby reducing the risk of investing time and money in an unsuitable product (Ries, 2011, chap. 6-8). To achieve the validation of our Leap of Faith 3, we are testing Hypothesis H5, which focuses on identifying a material that combines functional performance, such as heat resistance and structural stability, with ecological sustainability to ensure the feasibility of Cafeco's product solution.

4.1.2 Methodology

In **'**The Lean Startup**'**, Eric Ries emphasizes the importance of the iterative development approach. The 'Build-Measure-Learn' cycle serves as the methodological foundation for our product development: a prototype is created (Build), tested and assessed (Measure), and the insights gained are directly applied to optimizations (Learn). This method enables us to test hypotheses regarding the material composition and functionality of the product based on data and to validate them step by step (Ries 2011, chap. 8).

4.1.3 Prototyping Fund – Financing our first steps of product development

Our first success on the road to the sustainable coffee cup was our acceptance into the Prototyping Fund, a joint program of the DESIS Lab from Nova SBE and the Haddad Entrepreneurship Institute. It was established as part of the European Union-funded project 'Shaping the World by Innonexus' to provide interdisciplinary student teams with financial support, resources, workshops, and mentors to help them implement their innovative ideas. Teams participating for the first time can receive grants of up to €600 for the development of hardware, software, or engagement prototypes. Particular emphasis is placed on interdisciplinary teams that promote sustainability and impact.

As Cafeco we have been awarded with a total grant of 500€, which plays a central role in our product development. This fund enabled us to finance both material research and crucial experiments. Moreover, having access to the network of the DESIS Lab, we were able to develop strategic partnerships such as those with the FabLab and the BioLab in Lisbon, specialized facilities that provided us with essential resources and expertise for experimenting with materials and advancing the development of our sustainable coffee cup prototype.

Figure 10: Prototyping Fund Poster - Cafeco

4.1.4 Experiments

Experiment 1: Initial Binder Testing with Gelatin and Coffee Grounds

Build: After initial research and consultation from Rafael Calado, the leading professor of the Biolab, we hypothesize that galantine, due to its natural, biodegradable, and biocompatible properties, could serve as an effective binder to produce a strong and robust material. The established use of gelatin in materials science, particularly for its adhesive and cohesive properties in biodegradable composites, supports this assumption (Khan and Sadiq 2021). For these reasons, we have decided that the first test phase of the prototype development should focus on evaluating gelatine as a potential binder in combination with coffee grounds to achieve a solid material composition for our reusable coffee cup.

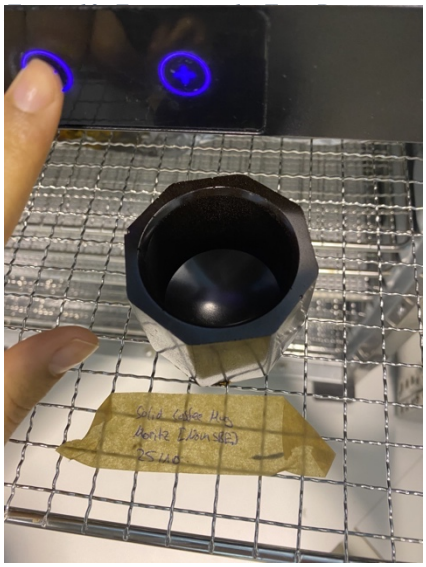
In the first experiment, we tested different ratios of galantine, dried coffee grounds and water. The mixtures were heated in a water bath to liquefy the galantine and homogenize it with the other components. We used an iterative approach and, after discussing with our contact at the BioLab, started with 1. 50% Coffee Grounds, 20% Galantine, 30% Water. The heated mixture was then poured into a silicone mold, cooled, and dried in a drying oven for 24 hours to evaluate their curing and structural stability as well as their capability to contain liquids at different temperatures.

Figure 11: Experiment 1 - Gelantine & Coffee Grounds

Measure: To verify the stability and ability of the prototypes to retain hot liquids, we carried out a stability test and a water absorption test. The stability test consisted of manually deforming the prototypes with moderate force and dropping them from a height of 30cm onto a hard surface to assess their structural integrity. The water absorption test was carried out by pouring 15ml of cold, lukewarm, and boiling water into each prototype to observe liquid absorption and reactions over time. After testing, we continued the process with 2. 40% Coffee grounds, 40% Galantine, 20% Water and then with 3. 33% Coffee grounds, 33% Galantine, 33% Water. The following results were recorded:

Table 7: Test Results - Experiment 1

No	Composition	Stability Test	Liquid Test
1.	50% Coffee Grounds, 20% Gelatine, 30% Water	Too dry and brittle; broke during drop test	Dissolved completely in cold, lukewarm, and hot water
2.	40% Coffee Grounds, 40% Gelatine, 20% Water	Stable but too soft; passed drop test, slight deformation	Dissolved quickly in cold, lukewarm, and hot water
3.	33% Coffee Grounds, 33% Gelatine, 33% Water	Most stable; passed drop test without breaking	Passed with cold water; dissolved in lukewarm and hot water



Learn: The first test phase showed that galantine is basically suitable as a binder for the stabilization of coffee grounds. The ratio of 33% galantine, 33% coffee grounds, and 33% water resulted in a promising consistency and strength. The cured prototype showed the desired hardness and stability at room temperature. However, significant weaknesses occurred: Upon contact with water, especially hot liquids, the material started to dissolve and lost its structural integrity.

The observed disadvantages regarding water and heat resistance clearly showed that galantine alone does not meet the requirements to confirm the hypothesis. Therefore, we decided to conduct a further experimental phase in which we will test the combination of coffee grounds with a different material. After further research and discussions with Professor Calado, we decided to continue the tests with bioplastics (polylactic acid), a thermoplastic bioplastic made from renewable resources such as corn starch or sugarcane, as these are known for their water resistance and heat resistance, which address the limitations observed in the experiments with galantine. Furthermore, bioplastics are widely used in applications requiring structural integrity and durability, making them a promising candidate for creating reusable coffee cups that meet both our functional and sustainability goals.

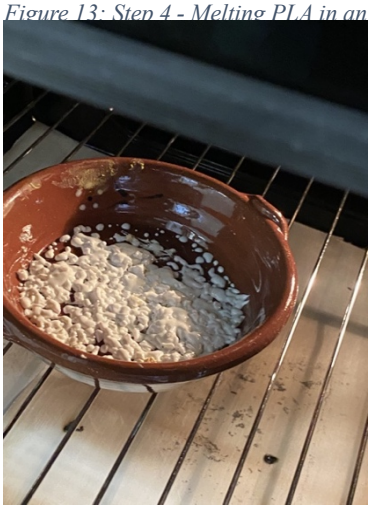
Experiment 2: Testing Bio-Plastic and Coffee Grounds Mixtures

Build: Based on the findings from the first experimental phase, polylactic acid (PLA) was investigated as an alternative binder to overcome the limitations of galantine in terms of water and heat resistance. We began by exploring various approaches to find a solution that successfully melts the PLA to be able to mix it with the coffee grounds:

Table 8: Experiment - 4 Steps of Melting PLA

Step	Method	Outcome
1.	Heating PLA in a pot	Material softened but did not melt completely.
2.	Melting PLA in an oven (160°C)	Temperature insufficient to fully liquefy PLA and bind coffee grounds.
3.	Testing acetic acid as a solvent for PLA	Solution was unstable and did not effectively bind the coffee grounds.
4.	Using an industrial oven (300°C)	PLA melted completely, enabling tests with different mixing ratios of PLA and coffee grounds.

Figure 13: Step 4 - Melting PLA in an



After finding a way to melt the PLA properly, we started our first attempt of mixing it with the dried coffee grounds. Since our goal was to maximize the proportion of sustainable material and thus the positive impact, but without compromising on the functionality and quality of the product, we started with a high proportion of coffee grounds: 1. 80% Coffee grounds; 20% PLA. After melting the PLA and adding the dried coffee grounds, we molded the resulting material (as far as possible) into a vessel-like form and cooled it down to test their suitability for the intended use.

Measure: After attempting to mold the mixture, we carried out the same tests as in the first experimental phase to assess stability, water, and heat resistance. After analyzing the results, we iterated and repeated the process with different material constitutions: 2. 70% Coffee grounds; 30% PLA; 3. 60% Coffee grounds; 40% PLA; 4. 40% Coffee grounds; 50% PLA. The tests have led to the

following results:

Table 9: Test Results - Experiment 2

No	Composition	Stability Test	Liquid Test
1.	80% Coffee Grounds, 20% PLA	Brittle, failed drop test; cracked and shattered under stress	Failed with all liquid temperatures; significant dissolution.
2.	70% Coffee Grounds, 30% PLA	Improved stability; minor cracks during drop test	Passed with cold and lukewarm water; softened with hot water.

3.	60% Coffee Grounds, 40% PLA	Stable, passed drop test without visible damage; robust	Passed with cold, lukewarm, and hot water; no dissolution or weakening.
4.	50% Coffee Grounds, 50% PLA	Stable, passed drop test without visible damage; robust	Passed with cold, lukewarm, and hot water; no dissolution or weakening.

Learn: The results showed that the composition of 60% coffee grounds and 40% PLA is a promising basis for our coffee cups, as it is both heat-resistant, robust, and can hold liquids at different temperatures for more than 10 minutes without dissolution or structural weakening. Furthermore, testing revealed a consistent trend: increasing the proportion of PLA improved the overall performance in terms of stability and water resistance. However, this improvement plateaued at a 60/40 ratio of Coffee grounds and PLA. Compositions with higher PLA content (e.g., 50%), showed no additional enhancement in functionality.

4.1.5 Conclusion

The various prototyping phases showed that it is possible to form coffee grounds in combination with PLA into a mass with basic properties such as heat resistance, formability, and water resistance. The iterative approach of the Build-Measure-Learn framework was crucial to gain insights and continuously improving our approaches systematically. The experiments thus validate a central part of the hypothesis that at least one material can be identified by the final showcase of the Prototyping Fund on November 25, 2024, that, in combination with coffee grounds, forms a mass capable of being shaped and holding hot liquids for at least 10min. This represents an important milestone in validating the third Leap of Faith.

Figure 14: Final Showcase - Prototyping Fund

At the same time, we encountered significant limitations: the limited time of the prototyping fund, limited financial resources, and limited access to professional production methods, such as injection molding and precise heat treatment, prevented the development of a marketable prototype. Further tests and strategic partnerships with specialized manufacturing companies are needed to assess actual production.

Nevertheless, to test initial market reactions to a sustainable coffee-to-go cup, we have established a partnership with Kaffeeform, which will enable us to evaluate potential market demand through a market-ready MVP and gain important insights for future product development and scaling.

4.2 Partnerships

The following section deals with Cafeco's partnership strategy. On the one hand, it explains the importance of strategic partnerships in various areas for Cafeco. On the other hand, we describe the basic approach to establishing contact with potential partners and show the different results we have achieved in different areas. Finally, the challenges and limitations that have arisen in the process are discussed. As in the product development section, the central goal of this chapter is to validate the third leap of faith and the subordinate hypothesis. Both are presented below:

Table 10: Leap of faith & Hypothesis Partnerships

Leap of Faith	**Hypotheses**
(3) Our solution can be sustainably produced at scale and supported by key strategic partnerships such as suppliers and producers	H6: Written agreements, such as Letters of Intent (LOI) or formal offers, are received from at least one partner in each area until 17. Dezember 2024.

4.2.1 Partnerships – The importance for Cafeco

Partnerships are an essential part of Cafeco's success, as they form the basis for realizing and scaling the product. Without strategic partnerships, neither producing a sustainable coffee cup from coffee grounds nor validating market demand would be possible. These partnerships not

only facilitate the practical realization of key processes but also serve as external validation of the business model by confirming the feasibility and attractiveness of the product. To clarify the acquisition process, we have categorized the acquisition of relevant partners into (1) Product Development and Manufacturing, (2) Suppliers, (3) Distribution, and (4) Impact. We selected these four areas because successfully acquiring partners in each of them lays the foundation for building and sustainably scaling Cafeco.

Product Development and Manufacturing: This area includes partners that provide access to specialized production processes and technologies, such as injection molding, as well as research and development facilities. It encompasses prototyping laboratories such as FabLabs or BioLabs, along with toolmakers and plastic processors. These partnerships are crucial to enable the transition from laboratory experiments to large-scale production. Research and development facilities offer the infrastructure for material testing and continuous improvement. However, without access to advanced production methods like injection molding, it would not be possible to develop prototypes that meet the requirements for functionality and scalability or to facilitate subsequent production.

Supplier: Suppliers include local coffee shops, large coffee chains, and companies that have already established networks for collecting coffee grounds. In addition, bioplastics manufacturers and packaging suppliers also fall under this category. A reliable supply chain is essential to ensure a sustainable supply of coffee grounds and other biodegradable materials. These partnerships not only guarantee the constant availability of raw materials but also strengthen Cafeco's credibility as a company actively working with the circular economy. Furthermore, collaborating with suppliers offers an opportunity to manage the quality and sustainability of raw materials.

Distribution: Distribution partners include cafés, concept stores, retail chains, and social and environmental organizations. They enable Cafeco to reach its target group efficiently and

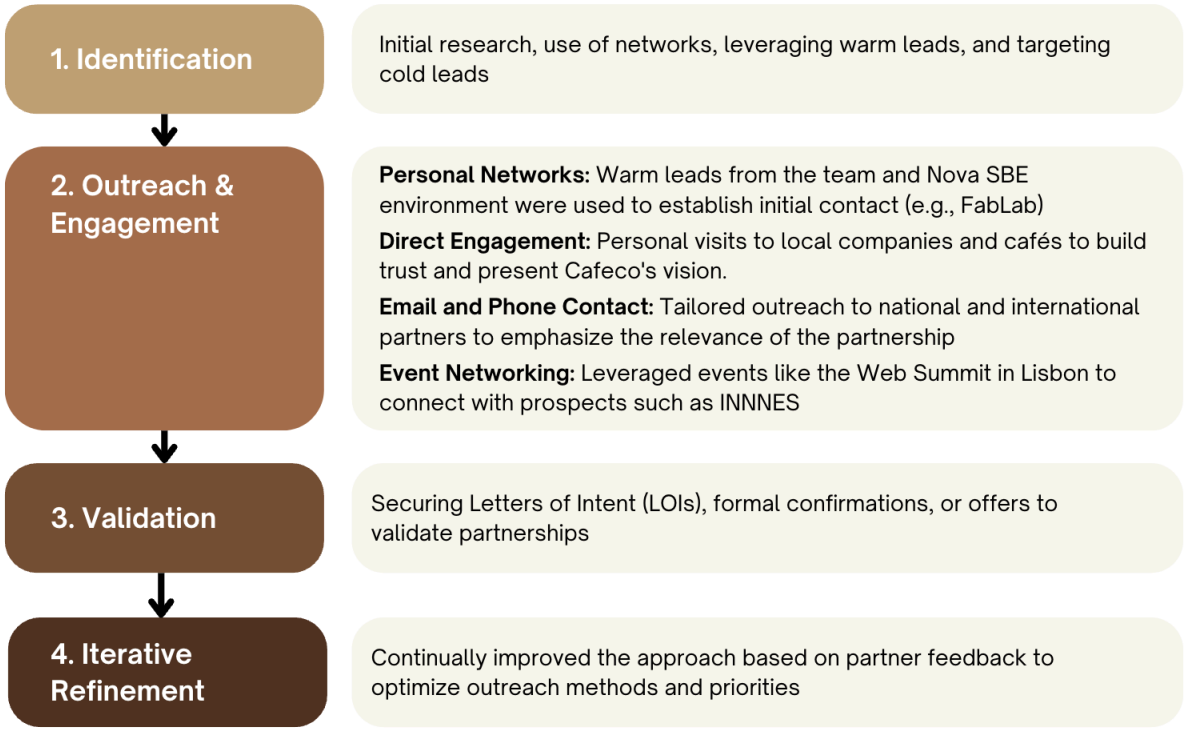
facilitate market access. Placing sustainable coffee cups in cafés or concept stores increases visibility and gives end customers the opportunity to experience the product directly. In addition, such partnerships help validate demand for the product and secure market share.

Impact: Collaborations with environmental organizations and social initiatives align with Cafeco's mission to promote sustainability and circular economy principles. These partnerships strengthen the brand identity, expand reach, and foster positive societal impact.

4.2.2 Methodology & Approach

Partnerships and external validation can play a central role in creating a scalable business model (Ries, 2011, chap. 8). Building on the previously introduced Lean Startup principles by Eric Ries, this approach was particularly relevant for Cafeco, as it allowed for real-time strategic adjustments based on feedback from potential partners. The use of the Build-Measure-Learn framework enabled the identification of effective communication channels, the prioritization of potential partners, and the validation of critical assumptions. To attract strategic partnerships in the previously defined areas, a systematic and iterative approach was developed:

Figure 15: Approach to Partnership Acquisition



We have targeted our partner acquisition in Germany and Portugal because we have the strongest networks and local connections in these countries. At the same time, both markets are characterized by a strong coffee culture and a growing focus on sustainability, which makes them particularly attractive (*see Chapter 3.4: Market Analysis*). Moreover, to ensure that our sustainability and impact goals are consistently reflected throughout our partnerships, we placed a strong emphasis on evaluating the mission, sustainability commitments, and corporate objectives of potential partners. This allowed us to align with organizations that share our values and reinforce Cafeco's vision of a circular and socially responsible economy.

4.2.3 Key Achievements

This chapter summarizes the main successes in the areas of Product Development and Manufacturing, Suppliers, Distribution, and Impact. These successes illustrate the progress made through strategic partner acquisition and its importance for implementing Cafeco's business model. Details of the partners contacted, the current status of the partnerships, and the evidence can be found in the corresponding tables in the appendix (Appendix 12 -16).

Product Development and Manufacturing

A key success in this area was our collaboration with laboratories such as FabLab and BioLab Lisboa and Hamburg, which gave us access to modern equipment and scientific expertise (Appendix 17).These partnerships were crucial in helping us to conduct initial material testing and gain important insights into the feasibility of our sustainable coffee grounds material. Another highlight was our collaboration with Kaffeeform, which enabled us to test the market demand for reusable coffee cups and to realize our first sales (Appendix18). This provides us with valuable insights into market acceptance and supports further validating our concept. In addition, an important milestone has been reached with the official offer from ‘Mayweg Kusntoff-Technik GmbH’, a German toolmaker to produce injection molds and manufacture

our own Cafeco cups in the future (Appendix 19). This opens up the possibility of making the transition from experimental prototypes to industrial production processes.

Supplier

In supply, we have established partnerships with several local cafés, such as Café Fabriksken and 'Hello Coffee' (Appendix 20). Both have expressed their interest through letters of intent (LOI), while other cafés have verbally agreed to work with us. These partners are willing to provide their coffee grounds free of charge, which ensures the supply of raw materials. In addition, we were able to establish contacts with NAM Mushrooms, an established player in the circular economy (Appendix21). This collaboration potentially offers access to an extended network for coffee grounds, thus supporting the long-term availability of raw materials.

Distribution

The interest shown by concept stores and cafés is an important step forward for distribution. Some have verbally agreed to display or sell our cups, while two of the partners, 'Café Fabriksken' and 'The Coffee', have even confirmed their interest in the form of letters of intent (LOI) (Appendix 20). Furthermore, the printing company Grafe Druck has supported us by providing marketing materials free of charge and has signaled its interest in continuing to support us with branded packaging material in the future (Appendix 22). In the area of social organizations, we have reached a remarkable milestone with Rotary International, which has purchased 50 branded cups for a fair-trade project (Appendix 37). In addition, we were able to pitch our project to the CEO of INNNES, Iceland's largest wholesale distributor, and it has sparked a great deal of interest (Appendi15).

Impact

In the area of impact, we are in advanced discussions with the Thirst Project Portugal to finalize an official partnership (Appendix 16). The aim of this collaboration is to promote access to

clean drinking water in developing countries through joint campaigns. The discussions to date also include the possible integration of a fixed portion of our sales as a donation component.

4.2.4 Learnings & Limitations

The acquisition of partnerships for Cafeco showed that there is a general interest and enthusiasm for the product, which underlines the relevance of the business model. The approach used in the partner acquisition proved to be effective because it allowed for constant optimization of the approach methods. For example, positioning ourselves as an impact startup was particularly successful, generating a higher response than if we had introduced ourselves as students. However, it turned out that the acquisition approach could not be applied equally successfully in all areas. While personal contact with cafés was significantly more effective than contacting them by email, producers preferred either a direct phone call or an email with detailed information. In the area of social partnerships, LinkedIn and e-mails were the most effective methods. The focus on two countries proved to be valuable for network development, but it also added complexity because the question of the future production location has not yet been decided, which is crucial for the targeted acquisition of suppliers and production partners. The biggest limitations in partner acquisition were the long response times, significantly delaying the process.

4.2.5 Conclusion

The success in acquiring partnerships clearly shows that strategic collaborations play a crucial role in realizing Cafeco's mission and goals. By applying the iterative and data-driven approach of the Lean Startup Framework, we have continuously optimized our methods and built significant connections in key areas. On the one hand, they prove the product's technical feasibility and market acceptance, thus creating the basis for sustainable scaling. On the other hand, suppliers ensure a sustainable and reliable supply of raw materials, which is essential for production. Partners around distribution show that Cafeco is well-received by both retailers and

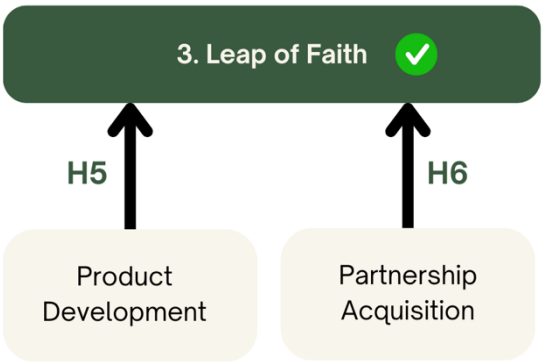
organizations. We also strengthened our brand identity as a socially and environmentally committed company around impact. Even if official confirmation is still pending in the area of impact, our partnership strategy has largely confirmed the hypothesis that strategic partnerships are possible in the areas of product development, supply, distribution, and impact.

4.3 Validation of the Third Leap of Faith

Cafeco's efforts in product development and partnership acquisition pursued the overarching goal of validating the viability of our product, with product development focused on materiality research and partnerships on the theoretical scalability of our targeted business model. Both combined as the 3rd Leap of faith.

The success of the product development process shows that the material combination of coffee grounds and PLA fulfills the required functional properties such as heat, formability, and water resistance. This validated the central hypothesis (H5) of the product development and showed that sustainable, functional cups made of these materials are possible. On the other hand, our success in acquiring strategically important partners in all defined key areas helped us to largely validate the H6. Written and verbal commitment of Suppliers and Distributors, Partnerships, and official offers for the production of our Cafeco Cups and Packaging, as well as great interest in our product and our vision signaled by Social Organizations, showed that the vision of Cafeco is feasible in practice.

Figure 16: Validating Leap of Faith 3



Furthermore, Eric Ries' Build-Measure-Learn framework has played a central role not only in prototyping but also in acquiring partners. The iterative approach allowed us to efficiently test our hypotheses and continuously adapt our strategy to achieve targeted progress. This data-driven process helped us to make informed decisions and to create both the technical and strategic basis for validating our leap of faith.

Nevertheless, the validation of Leap of Faith was complicated by several factors:

Table 11: Limitations in Validating Leap of Faith 3

No	Limitation	Decription
1.	Time and Resource Constraints	The limited timeline of the project and restricted funding hindered extensive material testing and iterative development of a functional prototype.
2.	Lack of Production Site Determination	The absence of a defined production site made it difficult to engage suppliers and production partners effectively, delaying critical validation steps.
3.	Limited Access to Professional Equipment	The lack of access to advanced production technologies such as injection molding prevented the creation of a market-ready MVP (Minimum Viable Product).
4.	Response Delays	Slow response rates from potential partners, delayed partnership acquisition and hindered hypothesis testing.

In conclusion, the validation of the third leap of faith, ‘Our solution can be sustainably produced at scale and supported by key strategic partnerships’, can be largely confirmed. However, additional investments in professional production processes and strategic decisions, for example, regarding the production location, are essential for final validation.

Part III: Group Part

5. Created Impact

In the 10 weeks we have worked on Cafeco, we sold 66 reusable cups (60 to organizations and 6 to LPs). Assuming these cups are made of approximately 60% coffee grounds (48g per cup), we have repurposed 4,75 kg of spent coffee grounds, successfully validating hypothesis 7: *"The cumulative weight of coffee grounds used in all sold products is recorded and verified to meet or exceed 2,5 kg by December 17th".* Additionally, we generated €804,60 in revenue so far. Donating 5% of this revenue to social organizations amounts to €40,23, validating hypothesis 8: "*By integrating charitable giving into our business model, we will be able to donate at least 25€ of our revenue to a charitable organization by December 17, 2024*".

6. Limitations

Every scientific study is subject to certain limitations that can influence the interpretation and generalizability of the results. Several limitations were identified in the course of this work project, which are explained in more detail in the following sections. The present project is based on the M.Sc. of Impact Entrepreneurship and Innovation Field Lab, which differs from traditional scientific research projects. Although great emphasis was placed on methodology and accuracy, the data and results collected may not fully reflect reality. The methods used were designed to gain quick insights within the given timeframe, which may lead to compromises in scientific rigor.

The hypotheses formulated during the field lab are less scientifically rigorous and do not provide definitive statements about the validation of Cafeco's solution. These hypotheses primarily served to identify valid indicators for the success of the business model within the specified time frame and to create a basis for the development of further hypotheses. A future

evaluation of the success of Cafeco's solution requires longer periods of time and further validation as well as long-term experiments.

The validation experiments were conducted over short time intervals due to a necessary pivot towards a new idea. This time constraint meant that fewer outreach activities and resources were available to collect more comprehensive data. As a result, the depth and breadth of the data collected might be impacted, underscoring the importance of further future validation experimentation.

The primary research conducted during the project could be biased and overrepresent certain social groups, while others are less represented or not represented at all. Despite the attempt to depict a realistic market picture, there is a possibility of response and non-response biases. Personal access to certain groups has influenced the representativeness of the sample, which limits the generalizability of the results. To strengthen the representativeness of future experiments, more diverse outreach strategies should be adopted. This could include partnering with a range of community organizations, utilizing a broader set of channels, and implementing stratified sampling techniques to ensure all relevant social groups are adequately represented.

Because of different countries of residence of the team members validation experiments were conducted in Germany and Portugal. This geographical focus may limit the validity of the data, as there are differences between the two countries that could affect the transferability of the results to other markets. What is successful in one country does not necessarily work in the other, which further limits the generalizability of the research results. On the positive side, conducting validation experiments in both countries have provided comparable insights about the two different countries and may inform future expansion strategies.

7. Key Learnings

Looking back on our various projects, our entrepreneurial journey has been very diverse. After three projects, setbacks and pivots, we finally found a venture that we can consider successful

not only in the context of our work project, but also personally. During this journey, we have learned valuable lessons - both as a team and individually. Below, each team member shares their two most important insights, followed by our two key learnings as a founding team:

Table 12: Individual Key Learnings

Moritz Joachim Basse	(1) It is not always necessary to have expertise in every area to develop a product or prototype. Instead, passion for the problem and building the right strategic partnerships are key success factors. (2) Challenges, such as a lack of responses or rejections, should not be seen as failures but as opportunities to learn and improve. Each setback offers valuable insights to refine strategies, enhance communication, and optimize approaches for better outcomes in the future.
Anton Schwarberg	(1) Customers want very different things than you. Discovering what customers want and why they want it requires great openness and a willingness to consider others' perspectives. (2) Entrepreneurship is never perfect. The best you can do is give your best and learn from your mistakes.
Ji Yen	(1) Flexibility and adaptability are key to navigating challenges and focusing on the most promising opportunities. (2) A strong marketing strategy requires platform-specific content and continuous testing to identify the most effective channels for reaching and converting target audiences.
Team Learnings	(1) Perseverance and trusting the process and in our own abilities is of key importance. Facing setbacks is disappointing, but they are valuable for learning and doing better next time. (2) Clear communication, defined roles, and leveraging each team member's strengths are essential for maintaining alignment and efficiency, especially when operating in dynamic and resource-constrained environments.

8. Conclusion and the Future of Cafeco

The overarching goal of Cafeco was to validate our key assumptions, the defined leaps of faith of Cafeco, to see if a reusable coffee cup made from recycled coffee grounds could evolve into a sustainable business.

At this point in our entrepreneurial journey, we can fundamentally confirm this. We have managed to establish comprehensive partnerships in various areas that enable the implementation of Cafeco. This has already led to us selling our first 66 cups, which can be seen as a great success in external validation. Through the sale of the cups, we created real impact and recycled 4,75 kg of coffee grounds, which adds up to a total of 1,24kg CO_2eq captured from the atmosphere (*see Chapter 3.5: Intended Impact*). In addition, thanks to our impact focus on the business model, we were able to generate over €40 in donations. Our

successes and insights from *Product Development & Partnership Acquisition, Customer Discovery & Validation, and Marketing & Sales* led us to largely validate all of our Leaps of Faith and thus achieve our goal. We also achieved our personal goal with Cafeco and found a problem that personally resonates with all three team members, allowing us to build a venture we genuinely believe in.

The insights gained from our previous entrepreneurial journey, such as the need for an iterative and practical approach instead of a purely theoretical analysis, have been crucial in helping us to implement this project. In particular, the use of lean startup approaches, such as the build-measure-learn framework, made it possible to conduct real-world tests, validate hypotheses step by step, and gain valuable insights. This was a critical success factor in the development of Cafeco.

In the future, we will continue to use an iterative approach and the Build Measure Learn framework. In addition, we have identified the following focus areas for the future:

Table 13: Next Steps for Cafeco

Next Step	**Explanation**
1. Material and Product Optimization	Explore alternative materials such as recycled ocean plastic instead of PLA to further strengthen the circular economy aspect of the product and brand identity. The trade-off between cost, sustainability (non-biodegradable), and brand positioning must be evaluated. In addition, further Prototyping & testing.
2. Finalizing the Production Location	Gather additional offers for the production of molds and cups from different locations. This step is essential for optimizing costs, partnerships, and impact.
3. Building a Supply and Logistics Network	Once the production location is determined, build an efficient supply and logistics network for coffee grounds and materials close to the production site, to maximize efficiency and minimize environmental impact.
4. Finalizing Partnership with Thirst Project	Conclude an official partnership with Thirst Project Portugal or similar organizations to strengthen Cafeco's impact sector and demonstrate social responsibility.
5. Customer Discovery and Validation	Conduct targeted customer discovery tests to better understand customer needs, focusing on customer archetypes, product validation (e.g., preferred color like pink), and feedback on product design.
6. Marketing Optimization	Develop data-driven marketing strategies informed by customer discovery and validation results. Focus on campaigns that increase visibility and product acceptance.
7. Strengthening Brand Identity	Enhance brand identity by focusing on Instagram (targeted content), creating platform-specific short videos on TikTok, expanding to LinkedIn to target organizations, and optimizing the website to improve conversion rates.

Our journey with Cafeco confirms that true entrepreneurship lies in tackling real-world problems with passion and persistence. With each step forward, we move closer to transforming waste into value, making Cafeco a symbol of sustainable progress and entrepreneurial impact. This paper might come to an end here, but Cafecos Journey has just started.

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List of Abbreviations

BML ..... Build-Measure-Learn

B2B ..... Business To Business

B2C ..... Business To Consumer

CTA ..... Call To Action

GHG ..... Greenhouse Gas

IBMC ..... Impact Business Model Canvas

LOI ..... Letter Of Intent

MIEI ..... Master of Impact Entrepreneurship & Innovation

MVP ..... Minimum Viable Product

PLA ..... Polylactic Acid

SAM ..... Serviceable Addressable Market

SCG ..... Spent Coffee Grounds

SOM ..... Serviceable Obtainable Market

TAM ..... Total Addressable Market

USP ..... Unique Selling Point

WTP ..... Willingness To Pay

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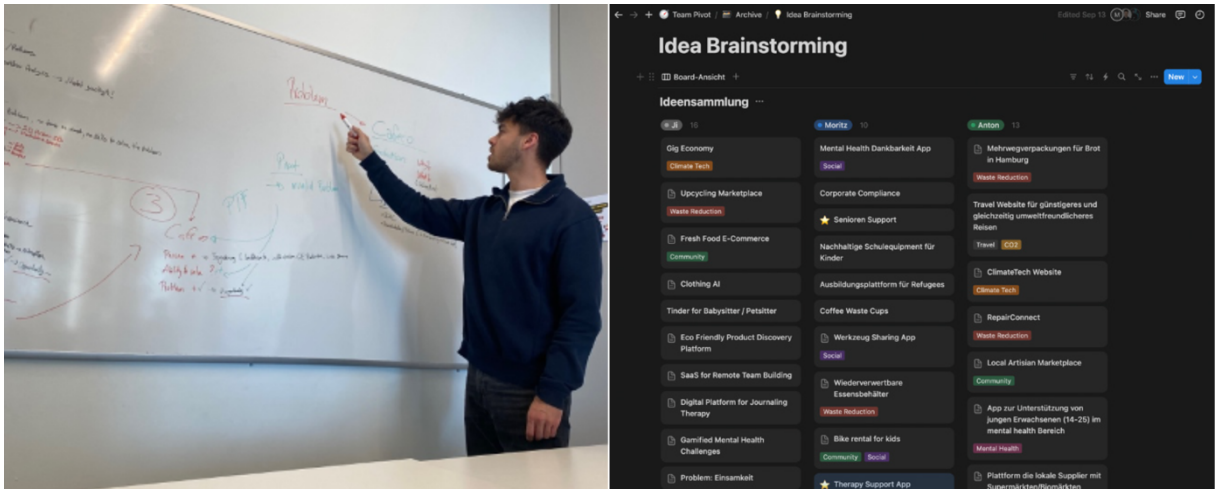
Appendix

Appendix 1: Brainstorming *Session*



Appendix 2: Focus Group with Seniors

Appendix 3: Introduction Flyer about our Project for recruiting elderly Interviewees

GENERATIONWOHNEN

Gemeinsam leben, Generationen verbinden

Moin,

ich bin Anton, 26 Jahre alt und schreibe gerade meine Masterarbeit an der NOVA SBE, zusammen mit meinen Teamkollegen Ji und Moritz.

Worum geht's? Wir entwickeln ein Projekt, bei dem ältere Menschen mit ungenutztem Wohnraum Studenten als Mitbewohner aufnehmen können. Du profitierst von zusätzlichem Einkommen, Gesellschaft und Unterstützung im Alltag – eine wertvolle Verbindung für beide Seiten!

Wer? Menschen ab 65 Jahren, die allein leben und offen für ein Gespräch über das Thema Wohngemeinschaft sind.

Interessiert? Ob Du selber interessiert bist oder nicht – wir möchten Deine Meinung hören!

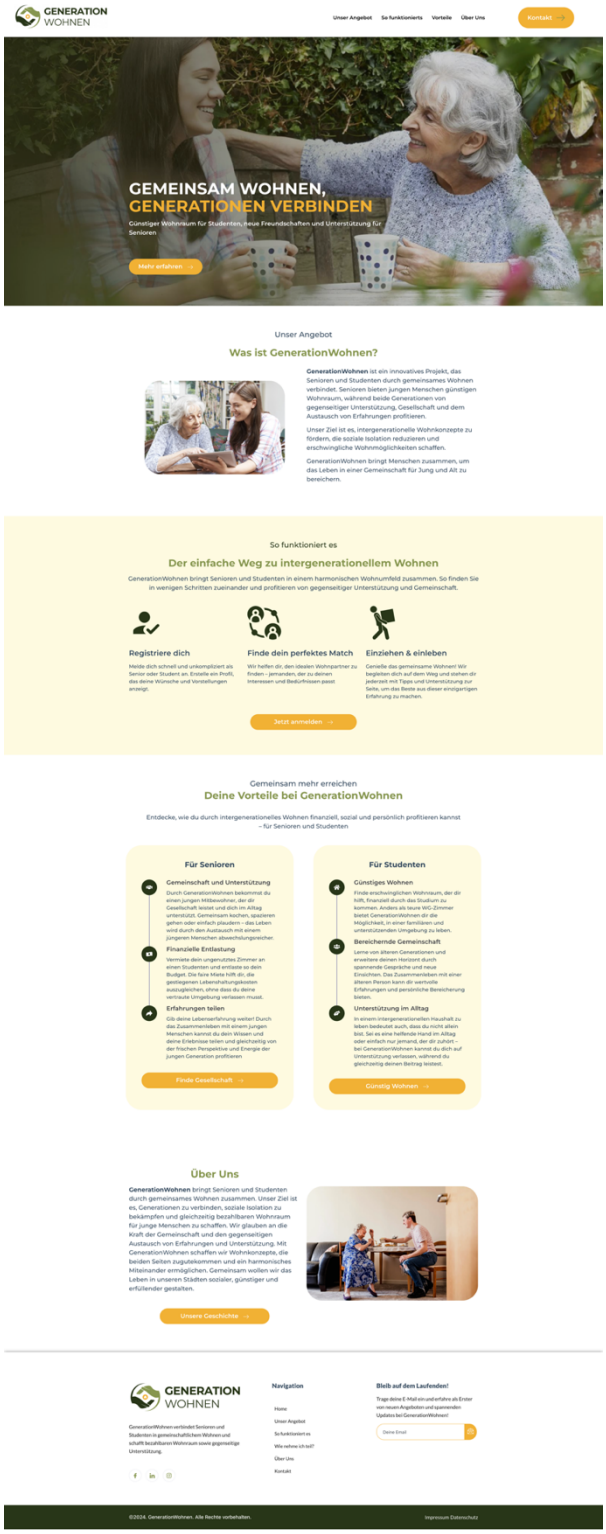
Kontakt

Anton Schwarberg

+49 1575 7147843

anton.schwarberg@outlook.com

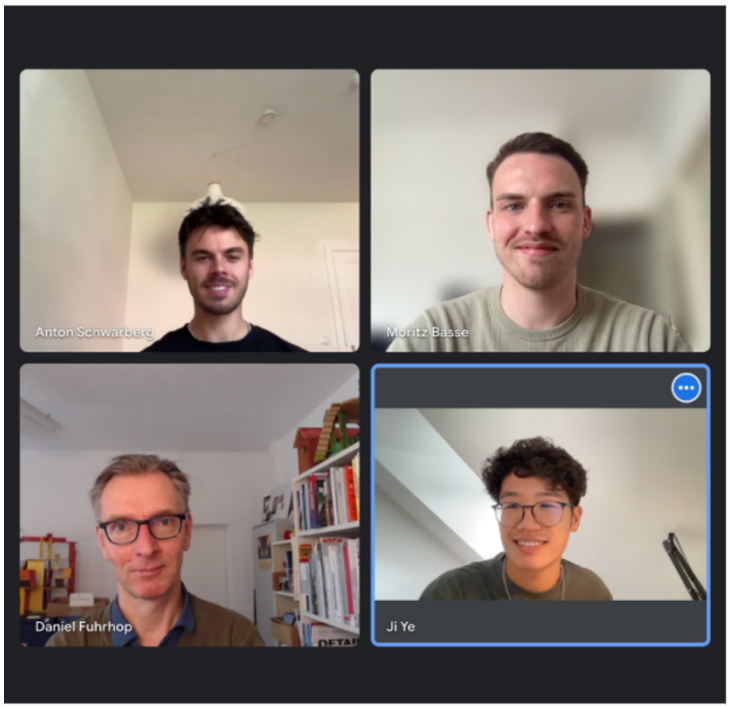
Appendix 4: Prototype Platform for GenerationalLiving



Appendix 5: Call with Sally Bird, Homeshare International

Sally Bird is one of the key figures associated with Homeshare International, an organization that promotes and supports "homeshare" programs worldwide. She is part of the charity's leadership team and has a network of a variety of homesharing initiatives.

Appendix 6: Call with Daniel Fuhrhop, Author, Politician & Expert for Intergenerational Living

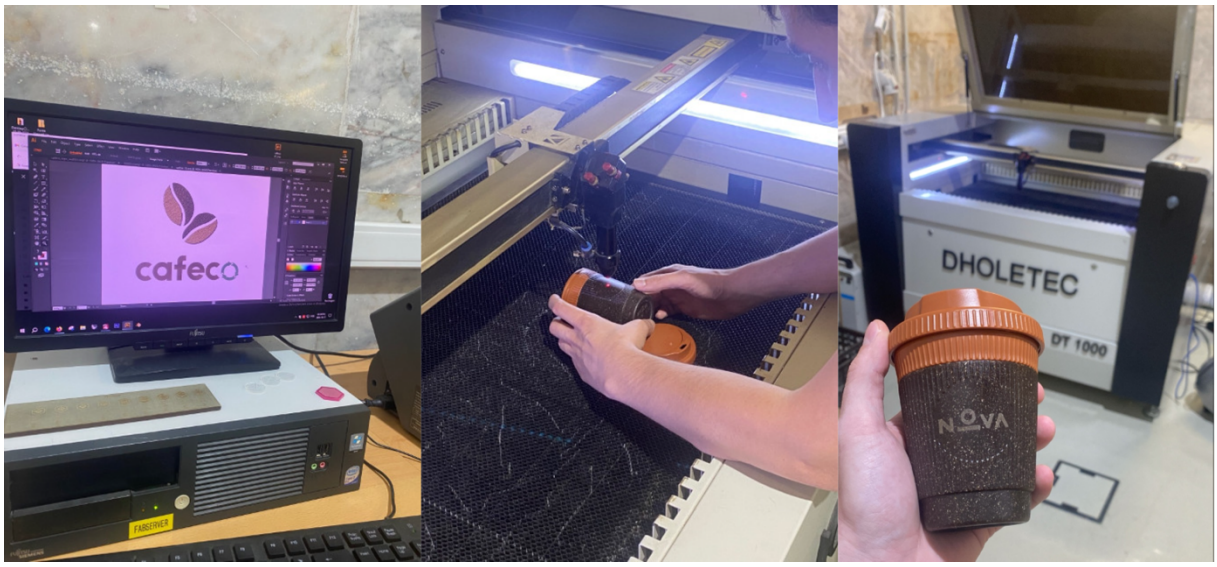


Daniel Furhop is a German author, economist, politician and former publisher known for his advocacy of sustainable urban development and efficient housing utilization.

Appendix 7: Amount of disposable cups used at Nova between January 2024 and October 2024. Information provided by the Facilities and Services Department at Nova School of Business and Economics.

information | numbers until october 31 (january to october 2024)			
	N.º coffees served	N.º disposable cups	Obs:
MonCafé	**16377**	**1680**	*opened August 19*
MonBistro	-	-	
Poke House	-	-	*not selling*
Pingo Doce & Go	**13752**	**~13752**	*until November 22*
PowerUp Connection Zone	**380/day**	without cups	*average number of coffee/latte/hot chocolate/decaf*

Appendix 8: Laser engraving



Appendix 9: Impact Business Model Canvas

PROBELM STATEMENT

The growing environmental impact of spent coffee grounds and disposable coffee cups contributes significantly to global waste and CO_2 emissions, demanding innovative solutions for a more sustainable future.

MISSION STATEMENT

Transforming coffee waste into reusable, eco-friendly coffee cups to reduce landfill waste, promote circular economy principles, and provide sustainable alternatives to traditional plastic and single-use cups.

KEY PARTNERS

Product Development
- Research labs, manufacturing partners, material suppliers (biopolymers), and branding/packaging providers.

Suppliers
- Local cafés, large coffee chains, waste management organizations, and sustainable raw material networks (e.g., coffee grounds collection services).

Distribution
- Cafés, eco-friendly retailers, corporate partnerships for branded merchandise, and educational/community networks.

Social Impact
- Sustainability organizations, charitable initiatives, circular economy advocates, and fair-trade non-profits.

KEY ACTIVITIES

- Material Sourcing and Development
- Production and Prototyping
- Marketing and Outreach
- Distribution and Sales
- Partnership Development

KEY RESOURCES

- Material Resources
- Production Resources
- Human Capital
- Brand and Marketing Assets
- Partnership Network
- Supplier Agreements
- Financial Capital

VALUE PROPOSITIONS

Cafeco creates sustainable, reusable coffee cups by upcycling discarded coffee grounds, offering an eco-friendly alternative to single-use paper and plastic cups. By transforming waste into value, we align with circular economy principles and cater to the rising consumer demand for environmentally responsible products. Our customizable solutions enhance user engagement and support social impact through strategic partnerships.

STAKEHOLDER RELATIONSHIP

- Collaborative Partnerships
- Customer Engagement
- Brand Advocacy
- Strategic Alliances
- Investor Relations

CHANNELS

- Direct Sales
- Partnerships (Cafés, Universities, Corporate Clients)
- Online Platforms (E-commerce)
- Events & Traid Fairs
- Interim Distribution via Supplier

STAKEHOLDER SEGMENTS

- Customers (Eco-conscious individuals, Universities, Cafés, Corporate Clients)
- Suppliers (Coffee grounds suppliers, Packaging providers, Manufacturers)
- Distribution Partners (Retailers, Concept Stores, Cafés)
- Investors and Funders
- Community Groups (Environmental organizations, Universities, Social initiatives)
- Founding Team

COST STRUCTURE

- Material Procurement Costs
- Manufacturing and Production Costs
- Marketing and Branding Expenses
- Distribution and Logistics Costs
- Partnership Development Costs
- Supplier Costs

REVENUE STREAM

- D2C Sales (Website, Cafes, Concept Stores)
- B2B Sales
- Customization Services (e.g., branded or personalized cups)
- Licensing or Collaboration Agreements

INTENDED IMPACT

- Reduce Waste
- Promote Circular Economy
- Lower Carbon Footprint
- Offer people a sustainable alternative to traditional plastics
- Raise Awareness
- Support social enterprises with fixed part of our profits to accelerate their impact

Appendix 10: Reuseable Coffee Cups Market Size Calculations

The Total Addressable Market (TAM) for Cafeco targets the European reusable coffee cup market, valued at approximately €1.2 billion in 2023, with a projected CAGR of 4.8% through 2030 (Statista, 2023). This growth is fueled by EU sustainability policies, such as the ban on single-use plastics (European Commission, 2022) and increasing eco-conscious consumer demand for durable, reusable products (Ellen MacArthur Foundation, 2022). Germany, Europe's largest coffee consumer with an annual per capita consumption of 5.2 kg, accounts for roughly 25% of this market (International Coffee Organization, 2023; ISN Magazine, 2024). Consequently, Germany's reusable coffee cup market is estimated at €300 million. The SAM narrows this figure by focusing on Cafeco's core target demographic: eco-conscious millennials and Gen Z consumers. Research indicates that these groups, known for their strong preference for sustainable products and lifestyles, comprise approximately 35% of the reusable coffee cup market (Allied Market Research, 2022). As such, the SAM for Cafeco in Germany is approximately $105 million. Finally, the SOM represents the realistic market share Cafeco can capture in its early stages. Assuming a 1% penetration of the SAM during the initial phase, Cafeco's SOM is estimated at $1.05 million. This conservative estimation reflects our niche positioning as a sustainable upcycled product and our current operational capacity but, at the

same time, provides a foundation for growth, given that brand awareness, distribution, and customer adoption have increased over time.

Appendix 11: Detailed Breakdown of Comparison

The first main competitor is "**HuskeeCup**", an Australian brand, focuses on sustainability by creating reusable coffee cups made from upcycled coffee husks. Its business model combines D2C sales through its website with B2B partnerships with cafes and sustainable retailers globally. The product range includes stackable, lightweight cups in various sizes (6 oz to 16 oz) designed for everyday use. Priced between €12 and €18, the cups target eco-conscious consumers and businesses committed to reducing agricultural waste. HuskeeCup's main USP lies in its circular economy approach, transforming coffee byproducts into functional, durable products that appeal to sustainability-focused coffee enthusiasts (HuskeeCup 2024).

"Ecoffee Cup", a UK-based company, offers reusable coffee cups made from bamboo fiber**,** a renewable and biodegradable material. The brand's business model primarily relies on D2C channels and retail partnerships to distribute its products. Featuring vibrant, stylish designs, the cups cater to environmentally aware consumers seeking aesthetic and sustainable alternatives. Available in sizes ranging from 8 oz to 16 oz and priced between €12 and €20, Ecoffee Cup positions itself as both practical and fashionable. Its key strength is combining sustainability with unique, eye-catching designs that resonate with urban, style-conscious buyers (Ecoffee Cup 2024).

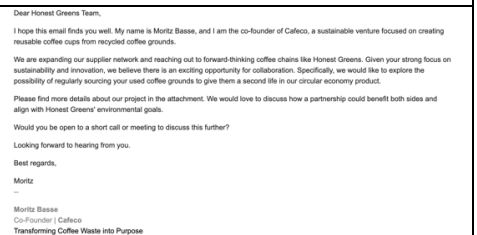
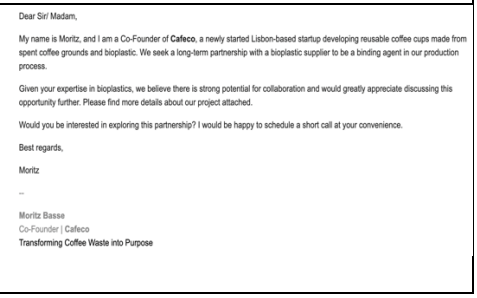
Lastly **„Circular&Co"**, another UK-based competitor, specializes in reusable coffee cups made from recycled single-use paper cups, aligning with circular economy principles. The business operates through D2C sales, B2B partnerships, and eco-friendly retailers, targeting both individual consumers and corporate clients. The product range includes insulated reusable

cups in 8 oz and 12 oz sizes, priced competitively between €10 and €15. Circular&Co's USP lies in its fully recyclable design and commitment to closing the waste loop, offering long-lasting, durable solutions for environmentally conscious customers (Circular&Co 2024).

Appendix 12: Product Development and Manufacturing Achievements

Category	**No. of Contacts made**	**Partners/ Achievements**	**Details**	**Current Status**	**Proof/ Reference**
Laboratories for Material Testing	3	FabLab Lisboa, FabLab Hamburg, BioLab Lisboa	Access to lab equipment and expert support for material research	Confirmed collaboration for all	(Appendix 5)
Molding & Production Partners	5	Mayweg Kunstoff-Technik	Offer received from German toolmaking company	Offer under review	(Appendix 7)
Product Supply Partners	3	Kaffeeform	Supply of testable product for validation purposes	Active supplier	(Appendix 6)

Appendix 13: Supplier Achievements

Category	**No. of Contacts made**	**Partners/ Achievements**	**Details**	**Current Status**	**Proof/ Reference**
Cafes	10	Café Fabriksken The Coffee	Signed LOI for Coffee Ground supply	Confirmed collaboration	(Appendix 8)
Circular Economy Networks	1	NAM Mushrooms	warm lead; Outreach conducted,	awaiting response	(Appendix 9)
Product Coffee Chains/ Supplier	2	Honest Greens (Café Chain), Delta Coffee	Personal outreach, referred to reach out via mail to discuss possible partnership	Interest expressed, no formal commitment yet	 Dear Honest Greens Team, I hope this email finds you well. My name is Moritz Basse, and I am the co-founder of Cafeco, a sustainable venture focused on creating reusable coffee cups from recycled coffee grounds. We are expanding our supplier network and reaching out to forward-thinking coffee chains like Honest Greens. Given your strong focus on sustainability and innovation, we believe there is an exciting opportunity for collaboration. Specifically, we would like to explore the possibility of regularly sourcing your used coffee grounds to give them a second life in our circular economy product. Please find more details about our project in the attachment. We would love to discuss how a partnership could benefit both sides and align with Honest Greens' environmental goals. Would you be open to a short call or meeting to discuss this further? Looking forward to hearing from you. Best regards, Moritz -- Moritz Basse Co-Founder | Cafeco Transforming Coffee Waste into Purpose
BioPlastic Producers/ Distributor	2	United Biopolymers	Outreach call, follow-up mail	awaiting response	 Dear Sir/ Madam, My name is Moritz, and I am a Co-Founder of **Cafeco**, a newly started Lisbon-based startup developing reusable coffee cups made from spent coffee grounds and bioplastic. We seek a long-term partnership with a bioplastic supplier to be a binding agent in our production process. Given your expertise in bioplastics, we believe there is strong potential for collaboration and would greatly appreciate discussing this opportunity further. Please find more details about our project attached. Would you be interested in exploring this partnership? I would be happy to schedule a short call at your convenience. Best regards, Moritz -- Moritz Basse Co-Founder | Cafeco Transforming Coffee Waste into Purpose

Recycled Plastic Organizations	1	Peniche Ocean Watch	outreach	awaiting response	Dear Peniche Ocean Watch Team, My name is Moritz, Co-Founder of **Cafeco**, a Lisbon-based startup developing reusable coffee cups made from spent coffee ground While we currently use bioplastic (PLA) as a binding agent, we are exploring using recycled plastics, such as ocean plastic, to furth strengthen the circular economy aspect of our product and brand identity. Given your commitment to ocean conservation and expertise in recycled plastic solutions, we believe collaboration has great potent would love to learn more about your materials and discuss the feasibility of a long-term partnership. Please let me know if this aligns with your mission, and I would be happy to arrange a brief call to discuss this further. Best regards, Moritz

Appendix 14: Partnership Outreach

Dear Sir/ Madam,

My name is Moritz, and I am a Co-Founder of **Cafeco**, a newly started Lisbon-based startup developing reusable coffee cups made from spent coffee grounds and bioplastic. We seek a long-term partnership with a bioplastic supplier to be a binding agent in our production process.

Given your expertise in bioplastics, we believe there is strong potential for collaboration and would greatly appreciate discussing this opportunity further. Please find more details about our project attached.

Would you be interested in exploring this partnership? I would be happy to schedule a short call at your convenience.

Best regards,

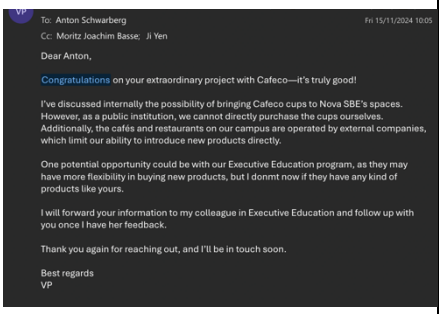
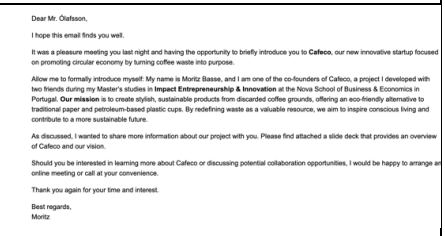
Moritz

--

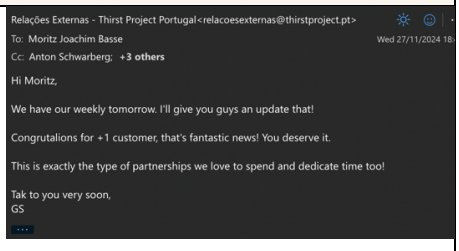
Moritz Basse
Co-Founder | **Cafeco**
Transforming Coffee Waste into Purpose

📧 **Email:** moritzbasse@gmail.com
📞 **Phone:** +49 173 5458325
🌐 **Website:** cafeco.pt
🔗 **LinkedIn:** Moritz Basse

Appendix 15: Distribution Achievements

Category	No. of Contacts made	Partners/ Achievements	Details	Current Status	Proof/ Reference
Concept Stores & Cafés	14	The Feeting Room, Café Fabriksken, The Coffee	Positive feedback, informal talks	Interest expressed, LOI	Appendix 8
Organizations	2	Rotary International, Nova SBE	Sold 50 branded cups, ongoing talks to different departments	Ongoing talks	 To: Anton Schwarberg Fri 15/11/2024 10:05 Cc: Moritz Joachim Basse; Ji Yen Dear Anton, Congratulations on your extraordinary project with Cafeco—it's truly good! I've discussed internally the possibility of bringing Cafeco cups to Nova SBE's spaces. However, as a public institution, we cannot directly purchase the cups ourselves. Additionally, the cafés and restaurants on our campus are operated by external companies, which limit our ability to introduce new products directly. One potential opportunity could be with our Executive Education program, as they may have more flexibility in buying new products, but I donmt now if they have any kind of products like yours. I will forward your information to my colleague in Executive Education and follow up with you once I have her feedback. Thank you again for reaching out, and I'll be in touch soon. Best regards VP
Wholesale Distributors	1	INNNES	High interest	ongoing discussions	 Dear Mr. Olafsson, I hope this email finds you well. It was a pleasure meeting you last night and having the opportunity to briefly introduce you to **Cafeco**, our new innovative startup focused on promoting circular economy by turning coffee waste into purpose. Allow me to formally introduce myself: My name is Moritz Basse, and I am one of the co-founders of Cafeco, a project I developed with two friends during my Master's studies in **Impact Entrepreneurship & Innovation** at the Nova School of Business & Economics in Portugal. **Our mission** is to create stylish, sustainable products from discarded coffee grounds, offering an eco-friendly alternative to traditional paper and petroleum-based plastic cups. By redefining waste as a valuable resource, we aim to inspire conscious living and contribute to a more sustainable future. As discussed, I wanted to share more information about our project with you. Please find attached a slide deck that provides an overview of Cafeco and our vision. Should you be interested in learning more about Cafeco or discussing potential collaboration opportunities, I would be happy to arrange an online meeting or call at your convenience. Thank you again for your time and interest. Best regards, Moritz
Packaging Suppliers	1	Grafe Druck	Provided free marketing material	Exploring future provision of branded packaging	Appendix 11

Appendix 16: Impact Achievements

Category	No. of Contacts made	Partners/ Achievements	Details	Current Status	Proof/ Reference
Social Organizations	3	Thirst Project Portugal, Rotary	Ongoing talks for collaboration, proposing fixed % of sales for events	Advanced talks, final details in discussion	 Relações Externas - Thirst Project Portugal<relacoesexternas@thirstproject.pt> To: Moritz Joachim Basse Wed 27/11/2024 18: Cc: Anton Schwarberg; **+3 others** Hi Moritz, We have our weekly tomorrow. I'll give you guys an update that! Congrutalions for +1 customer, that's fantastic news! You deserve it. This is exactly the type of partnerships we love to spend and dedicate time too! Tak to you very soon, GS

Appendix 17: Experimenting at FabLab & BioLab

Appendix 18: Kaffeeform Outreach

Re: Anfrage bzgl. Masterprojekt

KT

Kaffeeform Team <anja@kaffeeform.com>

An: Anton Schwarberg; Cc: Anton Schwarberg

Kaffeeform Katalog... 2,8 MB | Preisliste Händler D... 4,7 MB | Branding Guide.pdf 622,9 KB

Alle herunterladen · Vorschau für alle

Zum Schutz Ihrer Privatsphäre wurden einige externe Bilder in dieser Nachricht nicht heruntergeladen. Externe Bilder herunte

Hallo Anton,

danke für deine Nachricht und dein damit verbundenes Interesse!

Als sehr kleines Team sind wir zur Zeit voll ausgelastet und können daher leider keine Studienarbeiten betreuen. Das heißt, wir können dir zwar bedruckte Becher für den Verkauf an der Hochschule anbieten, allerdings nicht auf Detailfragen eingehen, Telefonate, Interviews o.Ä. anbieten. Wir bitten um Verständnis.

Solltest du dennoch an Bechern für den Verkauf interessiert sein, schicke ich dir hier gerne ein paar Infos.

Im Anhang findest du unseren Katalog, Infos zum Branding und Preise. Die Branding-Option bieten wir normalerweise erst ab 100 Bechern an, würden aber einmalig die Mindestbestellmenge auf 50 Becher herabsetzen.

Aktuell beträgt die Lieferzeit für Branding-Aufträge etwa 5 Wochen nach Auftragsbestätigung. Die Zahlungskondition für Neukunden ist Vorkasse.

Nenn mir bei Interesse gerne die gewünschte Bechervariante (Füllmenge und Farbe) sowie die Rechnungs- und Lieferadresse, dann erstelle ich dir gerne ein Angebot. Und schicke mir bitte das gewünschte Logo zu.

Ich freue mich auf deine Rückmeldung!

Viele Grüße,

Anja Schaller
Customer Communication | Branding Coordination

Appendix 19: Production offer from Mayweg Kunststofftechnik GmbH

MAYWEG
KUNSTSTOFF-TECHNIK

Richtpreisangebot	
Beleg-Nr.:	6368
Datum:	19.11.2024
Gültig bis:	17.12.2024
Ihre Kd-Nr.:	2001166
Bitte bei allen Rückfragen angeben!	
Kontakt:	Luca Jannack
Telefon:	+49 2353 9188-925
Fax-Nr.:	+49 2353 9188-18
E-Mail:	l.jannack@mayweg-gmbh.de

Mayweg GmbH Kunststoff-Technik - Daimlerstr. 7 - 58553 Halver

NOVA Business & Economics
Campus de
1099-085 LISBOA
PORTUGAL

Ihre Anfrage: Cafeco Cup
Angefragt am: 19.11.2024
Angefragt von: Moritz Basse

Ihre Tel-Nr.: +491735458325
Ihre E-Mail: 61365@novasbe.pt

Richtpreisangebot 6368

Sehr geehrter Herr Basse,

wir danken Ihnen für Ihre Anfrage vom oben genannten Referenzdatum und unterbreiten Ihnen nachfolgend das gewünschte Angebot.

Pos.	Bezeichnung	Einzelpreis (EUR)	Menge	Preis (EUR)
1	**RICHTPREIS!** **Werkzeugkosten Becher mit Gewinde 1-Fach** **Bitte technische Rücksprache halten!**	29.000,00	1 Stk	29.000,00
2	**Artikelpreis für "Becher"** Material: M000 - Materialbeistellung Artikelgewicht: 40,00 g/Stk. (netto); 40,00 g/Stk. (brutto) Verpackung: Schüttgut **Bitte beachten Sie, dass der Artikelpreis keine Frachtkosten enthält.**	31,27 / 100 Stk	ab 1.000 Stk	312,70
3	**RICHTPREIS!** **Werkzeugkosten Deckel mit Gewinde 1-Fach** **Bitte technische Rücksprache halten!**	26.000,00	1 Stk	26.000,00
4	**Artikelpreis für "Deckel"** Material: M000 - Materialbeistellung Artikelgewicht: 10,00 g/Stk. (netto); 10,00 g/Stk. (brutto) Verpackung: Schüttgut **Bitte beachten Sie, dass der Artikelpreis keine Frachtkosten enthält.**	20,90 / 100 Stk	ab 1.000 Stk	209,00

Appendix 20: Letter of Intends for Supply and Distribution

cafeco

Letter of Intent – Interesse an einer Partnerschaft mit Cafeco

An die zuständige Stelle,

hiermit bestätigen wir, Café 'The Coffee', unser Interesse an einer Zusammenarbeit mit Ihrem Team im Rahmen der Initiative, wiederverwendbare Kaffeebecher aus recyceltem Kaffeesatz herzustellen. Wie besprochen, sind wir begeistert von dem Potenzial dieses nachhaltigen Projekts und sehen darin eine innovative Möglichkeit, zur Umweltbewahrung und zur Förderung der Prinzipien der Kreislaufwirtschaft beizutragen.

Wir sind offen für die folgenden Bereiche der Zusammenarbeit:

- **Kaffeesatzlieferung** – Bereitstellung von gebrauchtem Kaffeesatz zur Unterstützung Ihres Produktionsprozesses.
- **Produktvertrieb** – Prüfung der Möglichkeit, Ihre nachhaltigen Kaffeebecher in unser Produktsortiment aufzunehmen, um unseren Kunden umweltbewusste Optionen anzubieten.

Diese **Absichtserklärung** ist nicht bindend und dient als formeller Ausdruck unseres Interesses an dieser Zusammenarbeit. Weitere Gespräche und Vereinbarungen werden notwendig sein, um den Umfang und die Bedingungen unserer Partnerschaft zu finalisieren.

Datum: 17.11.2024

Unterschrift:

cafeco

Letter of Intent - Interest in a Partnership with Cafeco

To whom it may concern,

We, Café 'The Coffee', hereby confirm our interest in collaborating with your team on the initiative to produce reusable coffee cups made from upcycled coffee grounds. As discussed, we are excited about the potential of this sustainable project and see it as an innovative way to contribute to environmental preservation and promote circular economy principles.

We are open to the following areas of collaboration:

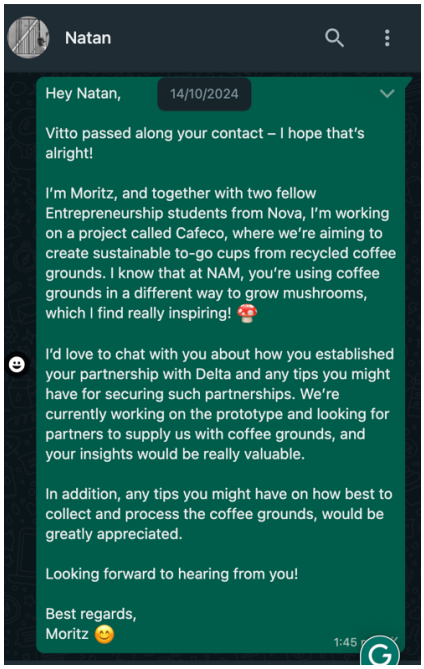
1. **Coffee Ground Supply** – Providing used coffee grounds to support your production process.
2. **Product Distribution** – Exploring the possibility of including your sustainable coffee cups in our product lineup to offer eco-conscious options to our customers.

This **Letter of Intent** is non-binding and serves as a formal expression of our interest in this collaboration. Further discussions and agreements will be necessary to finalize the scope and terms of our partnership.

Date: 01. Nov. 2024

Signature:

Appendix 21: Circular Economy Network NAM Mushrooms



Appendix 22: Marketing Partnership with Grafe Druck

Appendix 37: Rotary Order

Rotary Club
Lüdenscheid-Mark

Rotary Club Lüdenscheid-Mark, Reckenstraße 6, 58511 Lüdenscheid

NOVA Business & Economics
Campus de
1099-085 LISBOA
PORTUGAL

Lüdenscheid, 06.12.2024

Bestellung 50 Stück Kaffee-Becher

Sehr geehrter Herr Basse,

vielen Dank für Ihr Angebot.

Hiermit bestellen wir 40 Stück unbedruckte Kaffee-Becher und

10 Stück Kaffee-Becher bedruckt mit unserem ROTARY-Logo.

Die Druckvorlage haben Sie bereits erhalten.

Die Deckel bitte in der Farbe „Beige".

Lieferung bitte bis spätestens 20.01.2025.

Vielen Dank.

Mit freundlichen Grüßen

Oliver Scherff
Past-Präsident