

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

*omilk - The future of plant-based milk - A business plan exploring the market opportunity for on-demand plant-based milk with a focus on the B2B sector*

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16-12-2021

## **Abstract**

*Coffee shops like end-consumers source plant-based milk in one liter Tetra Pak's. The paper's findings suggest that this does not cater to business clients' needs in a cost-efficient and sustainable way. Omilk will provide an oat milk powder and an accompanying machine, enabling the on-demand production of oat milk, reducing both costs and waste. A financial feasibility analysis for the proposed business model is conducted, and a roll-out plan is defined. Furthermore, marketing activations and a suitable founding team are outlined. Overall, the findings suggest a significant business opportunity for the on-demand plant-based milk production for business clients.*

**Keywords:** Entrepreneurship, Innovation, Sustainability, Beverage Industry, Coffee, Marketing & Sales strategy, Financial feasibility, Team, Roll-Out

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# Group Part

## 1. Introduction

The plant-based food and beverage market has experienced significant growth over the past decade due to growing consumer demands for vegetarian and vegan options (Aschemann-Witzel et al. 2020). Within that market, plant-based milk products experience the broadest overall acceptance among consumers, accounting for 15 percent of all dollar sales of retail milk in the USA (Mount 2021). Indeed, over the past decade, the offer for plant-based, Ready-To-Drink (RTD) milk alternatives has steadily increased, developing the substitute milk market into a \$16bn industry (Franklin-Wallis 2019). The industry's projected CAGR of 14.5% from 2020 to 2028 is mainly driven by more health-conscious consumers, rising environmental concerns connected to the dairy industry, and an increased share of lactose intolerance (iCrowdNewswire 2021).

Available plant-based RTD milk alternatives ship in a standardized one-liter Tetra Paks consisting of roughly 90% water and 10% plant-based ingredients. Indeed, one may raise concerns about the sustainability of given supply chain. 90% of the RTD alternative consists of a resource readily available to consumers, both the businesses and end customers. In addition to their supply chain inefficiencies, current plant-based offerings are on average 40% more expensive than organic bovine milk. Given that plant-based ingredients readily used in the production of substitute milk need less space, less water, and no food to grow, concerns about the necessity of these price discrepancies have arisen.

Using Eisenmann's (2014) framework for business model analysis, this paper aims to analyze one hypothesis for plant-based milk substitutes in the entrepreneurial business context.

*H1: B2B clients are not catered by current market offerings in a cost-efficient and sustainable way*

Adopting the scientific approach of connecting cause-and-effect relationships in the context of entrepreneurship, we will ensure **omilk** to operate a sound business model. Adopting this more structured approach of following straightforward questions will help the founding team to understand the business opportunity deeper without overseeing essential business model elements.

**omilk** sets out to develop an oat-milk powder mix that can be used by everyone, both coffee shops, and end-consumers to create their oat milk on-demand. Using 900ml of water and 100gr of **omilk's** oat milk powder, a tasteful and fresh product can be crafted in a matter of seconds. Indeed, we find that our product can reduce waste and shipped weight of about 90% while being 20% cheaper than all existing RTD alternatives.

Primarily targeted at B2B clients, **omilk** utilizes our existing network of coffeeshop and coffee roasters in Germany to test the business hypothesis, gaining valuable partners for the adopted "evolutionary" prototyping strategy. **Omilk's** connection to Dr. Gaukel from the Karlsruhe Institute of Technology (KIT) and Prof. Dr. Kohlus from the University Hohenheim, specialists on freezing and drying processes and food-powder development, respectively, will significantly benefit the MVP development, set to be market-ready by mid-2022. **Omilk** estimates a German, Serviceable Obtainable Market (SOM) of 2700 clients and a per unit (100gr – leading to 1 liter of milk) contribution margin of EUR 0.95 (~60%).

The main identified limitations to the mainstream oat-powder acceptance remain switching costs between RTD alternatives and manual oat-powder to oat-milk blending processes. While we see a significant business opportunity in oat-powder production, we believe that **omilk's** solution can only come into mainstream adoption when accompanied by a fully automated, on-demand machine. We perceive this as the edge between academic entrepreneurial analysis to validate a business idea and

the true rollercoaster of an entrepreneurial journey.

The following business plan will give a detailed breakdown of the plant-based milk market, leading competitors, target customers, *omilk's* product specification and operational plan, our financials, and ultimately our roll-out strategy.

## **2. Market analysis**

The following section gives a general overview of the plant-based milk market, presenting its size and current trends followed by a detailed analysis of direct and indirect competitors.

### **2.1. Overview of plant-based milk market**

Overall, we experience a rising interest among consumers to switch to a plant-based diet amidst concerns about the overconsumption of animal-based food products. This trend is motivated by sustainability, health, and ethical concerns. Plant-based products, free of hormones or, in the case of plant-based milk, lactose, are acceptable to all and generally supplement the trend to go veggie or vegan.

The market for milk alternatives is rapidly growing as more people choose plant-based options over cow milk. Over the past decade, the plant-based milk market has reached mainstream acceptance, developing into a \$16bn industry. Its growth is continuously outperforming and negatively impacting the traditional cow milk industry. For instance, the rise of plant-based alternatives in the UK caused 1000 dairy farms to close between 2013 and 2016 (Franklin-Wallis 2019).

In figures, the overall plant-based food market in the US was worth \$7bn in 2020, growing +27% from

2019. The plant-based milk industry accounts for the largest share of the overall plant-based food market, realizing a turnover of \$2.5bn in 2020. Within the plant-based milk category for the US market, almond milk is the leading substitute (Mount 2021). In Germany, the largest European consumer, the market for plant-based milk is experiencing higher growth rates, mainly arising from the vastly increasing demand for oat milk. While the overall plant-based milk market grew +22% (from € 228 to € 279 million) from 2018 to 2019 and 42% (from € 279 to € 396 million) from 2019 to 2020, the demand for oat milk tripled during the same timeframe (Ritoe 2021).

There are some differences in consumer preferences between the US and Germany; almond milk being the most popular choice in the US, and oat milk being the most popular substitute in Germany. However, there is a clear trend towards plant-based milk, with more and more consumers and businesses substituting cow milk with plant-based alternatives. The reasons for the continued growth of the already popular plant-based milk category are manifold. Over the past years, general health and environmental concerns have motivated consumers to shift their consumption behavior.

Furthermore, prices for these products continue to decrease, making them more accessible to a broader audience. Indeed, plant-based milk is the most accessible vegan substitute, widely available across almost every European grocery store. The realization of health concerns originating from cow-milk consumption has become more prominent, with discussions about cow-milk allergies or lactose intolerance becoming somewhat mainstream. The latter is estimated to affect around 68 percent of the world's population, most common in Africa and Asia, making up a substantial part of the world's population (NIH 2021).

In Germany, around 15% of people are estimated to be lactose intolerant. This group of consumers pushes the rise of new innovative products as they shift their consumption behavior to consuming more milk alternatives in their private lives, demanding businesses, and restaurants to provide their

products and meals with substitute milk (Institut für Medizinische Diagnostik Berlin-Potsdam 2021). Further, many health-conscious consumers have shifted their mindsets from believing that cow milk provides health benefits. A belief that was somewhat embroidered into people's minds for the last century. While cow milk was marketed as an essential product for children, teenagers, and adults, today's science claims that milk is not essential after infancy as it is possible to have the nutrients from other dietary sources. Especially among teenagers, milk is less and less associated as a healthy product (Kemper 2018).

On the environmental side, any plant-based milk emits fewer carbon emissions than dairy milk. Animal products' water and land use are much higher than that of plant-based substitutes, making plant-based milk an attractive alternative for environmentally conscious people. Indeed, while every liter of cow milk requires the use of 8.9 square meters per year, oat- (0.8), soy- (0.7), almond- (0.5), and rice-milk (0.3) present much better options (Bogueva & Marinova 2021). Further, a study by Poore and Nemecek (2018) finds cow-milk to produce up to three times more greenhouse gas emissions than the next, plant-based substitute. With water becoming a more and more scarce resource, it is remarkable to see that the production of one liter of cow milk requires 628 liters of water compared to 371 for almond, 270 for rice, and 48 for oat options (Bogueva & Marinova 2021).

Due to the growing and quickly developing nature of the given market, *omilk* sees its business hypothesis further motivated. We will thus present an in-depth analysis of current market offerings to understand the gaps a new market entrant can fill.

## **2.2. Competitor analysis**

Looking at the market for plant-based milk products, one realizes that competition is fierce, with many new players entering the industry over the past five years. We adopt a three-step approach to analyze given offerings, segmenting the market into our direct, indirect, and anticipated indirect



competitors.

- **Direct competitors:**

- Businesses with similar product offerings.
- Interchangeable to our product.
- First-mover advantage.
- **Companies:** NuMilk, ChefWave

- **Indirect competitors:**

- Products closely related or direct substitutes to ours.
- **Companies:** Oatly, Vly, Sproud, Alpro, Minor Figures, Hofgut Stoerzl, Brief, Moelk, Bluefarm, Reben-Kitchen, Rise

- **Indirect anticipated competitors:**

- Companies anticipated to be able to move into the market at any given time.
- **Companies:** Marco Bevearge Company, Puqpress, 3Stemp, Trumpf Group, WMF, Siemens, Uebermilk, AEG, ECM

While conducting the market segmentation, we found many companies offering RTD milk substitutes delivered in tetra packs. Fewer companies offer their solutions in a powder form (soluble in water to produce a similar product as the shipped tetra packs). Only one company (Numilk) from the United States is building a product very similar to what we are prototyping. The competition on a secondary level (indirect) in the form of RTD or powder providers is significant and will present the foundation of our tests and benchmarking activities presented in *Section 5* of the Business plan. Most of the competitors from a secondary level pursue a business model of shipping pre-packaged plant-based milk substitutes either in tetra packs or in the form of powder to their clients around the world. We understand that most, if not all, commercial customers (*survey presented in section 4.1*) currently use products provided by competitors from the secondary level. We will thus go into a deeper

analysis of the price, taste, sustainability, and foamability of plant-based milk later in this section. Additionally, we will conduct a SWOT analysis for both our direct competitor Numilk and indirect competitors, to point out respective strengths and weaknesses.

We start by dissecting Numilk’s business model and value proposition, to understand its innovation and weaknesses. We will then look at the producers of plant-based milk products (indirect competitors) selling to European clients, conducting an analysis of their key features. Due to Numilk’s new market entry into the professional sector we have no possibility of obtaining their product to benchmark the milk quality against the existing market leader Oatly (DEE-ANN DURBIN THE ASSOCIATED PRESS 2021).

### 2.2.1. Direct Competitors

**Numilk**, a US startup founded in 2018, presents a novel business model and value proposition in the plant-based milk market. It offers a machine that can produce all kinds of plant-based milk substitutes at the push of a button by inserting pouches containing the ingredients. The company initially started producing larger machines for use in supermarkets and has only recently started developing solutions for smaller businesses like coffee shops and end-consumers. As of December 2021, these solutions are not publicly available for purchase, yet News from June this year indicates the testing phase of their B2B model in coffee shops (Zlatopolsky 2021). Taking all publicly available data, we created a general factsheet for Numilk’s offering (Tolwin 2021) (Numilk 2021).

*Figure 1: Factsheet summarizing information on Numilk*

Location	United States
Founding date	2018
Product	<ul style="list-style-type: none"> <li>● Fresh non-dairy milk with the push of a button.</li> <li>● Machinery for supermarkets (8SqFeet)</li> </ul>

	<ul style="list-style-type: none"> <li>● Home and professional appliances working with pads (Nespresso principle). Add bag and water and produce one litre of fresh plant-based milk on the push of a button</li> <li>● Not processed</li> <li>● 7–10-day shelf-life</li> </ul>
Price	Supermarket machinery: Home appliance: \$249 Professional appliance: \$699 (\$300 to produce) Pouch: \$3 - \$5 depending on the pouch / discounts for subscriptions
Funding	<ul style="list-style-type: none"> <li>● Kickstarter (funded 05.09.2021) - \$241.328</li> <li>● Shark-Tank (05.2021) - \$1 million equity, \$1 million loan (Mark Cuban)</li> <li>● Other investors</li> <li>● Current valuation (Nov. 2021) = \$55M</li> </ul>

Numilk’s value proposition is making milk what it should be: Plant-based, less waste. The product is described as delicious, nutritious, with no food waste. A product free from gums, fillers, and preservatives, more environmentally sustainable, without all the packaging waste and carbon footprint of traditional pre-packaged groceries (Tolwin 2021). The images of Numilk’s products can be found in *Appendix 1*.

Numilk is undoubtedly highly innovative, being the first mover to manufacture a machine able to produce high-quality milk at the press of a button. Further, they state to already be testing five versions of the professional model with coffee shops. However, the one-press feature, requiring a new pouch for each serving of one-liter plant-based milk, could become a disadvantage when approaching professional clients or end-consumers. Customers with sustainability concerns might scrutinize the company for excessive waste production. We have found the first evidence of this by looking at the comments below Numilk’s YouTube campaign. Commenters ask for the possibility of having a solution without the pouches or with less waste.

Further, looking at the difference between the home vs. professional machine, it is not clear why

there is a price difference of \$450. Both machines still utilize the same pouches, capable of producing one liter of milk at the click of a button. Looking at this from a professional perspective, this seems unviable for most coffee-shop scenarios – a topic which we will explore more in-depth in Section 4.1 and Section 5 when conducting the survey and interviews. Figure 2 depicts an analysis of Numilk’s business by applying the SWOT framework (GÜREL 2017).

Figure 2: SWOT analysis on Numilk’s business

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- First mover advantage into the on-demand production of plant-based milk products</li> <li>- Relevant knowledge of the food and beverage industry by the two founders (Ari Tolwin and Joe Savino)</li> <li>- Supermarket product already in the market for over 2 years – recipes for plant-based milk drinks are thus already developed</li> <li>- Smaller B2C and B2B units are already in the active testing phase</li> <li>- Kickstarter goal of \$100.000 significantly outperformed (\$222.353)</li> <li>- Significant VC funding with over \$12m since 2018 (Locke 2021)</li> <li>- Cash gives room to hire talent and invest into R&amp;D</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Pouch system is unsustainable and more expensive than current market offerings</li> <li>- one pouch can only produce one litre of milk</li> <li>- Significant cash-burn of \$7M over the first 3 years of the business (Locke 2021)</li> <li>- Weak sales numbers from supermarket sales</li> <li>- Little coffee shop knowledge to push their smaller B2B units</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Since recipes developed and additional funding secured a move into the possibly more lucrative B2B market aimed at coffee shops can be conducted</li> <li>- Easing of the COVID-19 situation should help the supermarket business to pick up in sales volume</li> <li>- Value proposition of on-demand production is much stronger than shipping pre-packaged one litre Tetra Paks</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Existing market alternatives are widely known and accepted</li> <li>- Increased spending into R&amp;D due to localization in the United States</li> </ul>

A second direct competitor, **ChefWave**, launched a plant-based milk maker a couple of years ago, targeted at the home use customer. One of the clients and leading specialty coffee specialists (Backyard Coffee GmbH – client of green coffee trading business Ocafi GmbH) tested the given solution in 2020 and was underwhelmed by the result. Due to the machine's design of not using active filtration, slight residues of the oats or nuts are left in the final milk product. Making the outcome makes unpleasant to drink and useless in a commercial, coffee-shop environment. However, even the quick analysis of the given machine shows us the importance of a residue-free drink.

### **2.2.2. Indirect Competitors**

We see two different approaches to offering milk substitutes within the indirect competitors. The first group offers RTD options in the form of pre-packaged tetra packs; the second offers powders mixed with water to create the plant-based substitute on-demand. Latter being substitutes only recently introduced into the market, therefore still in the early stages of its development. The RTD alternatives are those that we all know from our visits to the supermarket or local coffee shop. Nevertheless, over the past two years, more and more powder alternatives have appeared in the market and, in our opinion, present a compelling alternative worth looking out for.

While the RTD alternatives are still more popular, we find the powder market highly interesting. To produce 1 liter of milk-substitute, roughly 100gr of powder is needed (Bluefarm 2021). This implies that for a one-liter Tetra Pak of plant-based milk that is purchased, 900ml of water is shipped around the globe. This supply-chain inefficiency creates unnecessary pollution and additional costs in addition to the waste created by the tetra packs. Because water is a readily accessible resource both at home and at every coffee shop, objectively looking at the given offerings, we see that shipping

water cannot make sense. However, much of the plant-based milk market is catered for by RTD suppliers such as oatly or Alpro. *Appendix 2* presents the key facts about the central RTD and powder suppliers.

*Figure 3: SWOT analysis on RTD oat milk*

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Larger market share + readily accepted alternative to dairy milk</li> <li>- Comfortable product / ready to consume on the spot</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Ships 90% of water from production facility to consumer</li> <li>- Tetra pak cartons are made 75% of paperboard, 20% of polyethylene and 5% of aluminium, hence creating unnecessary waste</li> <li>- Consumes unnecessarily much space</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Could introduce more environmentally friendly options such as oat-milk powder easily due to existing market power</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>- First movers in the powder and on-demand machine market could push into the market quickly</li> </ul>

*Figure 4: SWOT Analysis on oat milk powder*

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- 90% less transport weight</li> <li>- Due to production on the spot, less additives are needed</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- RTD brands have a strong market presence</li> <li>- RTD brands could quickly enlarge their brand portfolio with a powder-based solution</li> <li>- Little brand awareness</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- First-movers into a young market</li> <li>- Plant-based consumer are more open to innovation</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Easily copyable</li> </ul>

### **2.2.3. Anticipated future indirect competitors (machine manufacturers)**

In addition to the direct and indirect competitors, we see that machine manufacturers such as Marco Beverage Systems, Puqpress, Trumpf, Siemens, AEG, or Uebermilk could enter the market of producing machines either able to produce oat milk from oats themselves or a provided powder. These companies are well-known within the coffee shop market for their quality products tailored to optimize the coffee shop experience. Thus, we identify them as *anticipated future indirect competitors*. However, given that powder-based plant-based drinks are not mainstream yet, we do not perceive them as a severe threat and will not invest in more profound analysis. Given that we produce a fully functioning machine later, we could consider finding a suitable partner among one of the listed companies.

After a careful analysis of the current market, we understand that while the production of plant-based milk presents excellent environmental benefits, the current distribution model leaves room for further improvement. We see two market participants in the oat-powder sector. However, they have little adoption by a wider audience, possibly due to the remaining switching barrier of the manual process of blending the powder with water before consumption. Given that current RTD suppliers lack of supply-chain sustainability, a business opportunity bridging the comfort of RTD and supply-chain efficiency of powder suppliers should be given.

## **3. Idea Validation**

We will proceed with understanding the market and the needs of market participants on the B2B and B2C sectors. In this effort, we conducted two surveys: one addressed coffee roasters and coffee

shops, and the second end-consumers. Additionally, we conducted ten interviews with medium-/ to high-frequency coffee shops in Lisbon and Germany. The survey design and interview questions can be found in *Appendix 3.1* and *3.2*, respectively. The section will first present the findings from the B2B survey and interviews and then proceed with the results of the B2C survey. Lastly, we will use the collected data to further motivate our business hypothesis, market & product specifications.

### 3.1. Interviews with coffee shops and coffee roasters

For a market assessment in the B2B market, we collected both quantitative data through the survey and qualitative data through in-person interviews. While we sent out 334 surveys were to coffee roasters across Germany, we received 23 responses (~7%). This response rate lies within the expected range for B2B surveys (Willott 2019). A summary of the results is depicted in *figure 5*.

*Figure 5: summary of B2B survey results*

Survey question	Summary of responses
Do you offer plant-based milk as a substitute to cow milk?	Yes: 91.3% No: 8.7%
If yes, which plant-based milk do you offer?	Oat: 95.7% Soya: 43.5% Almond: 21.7% Pea: 4.3% Others: 8.7%
From which brands do you source your plant-based milk?	Oatly: 52.2% Alpro: 39.1% Minor Figures: 8.7% Vly: 4.3% Others: 43.5%
How many litres of plant-based milk do you use?	Average: 5.81 liters
How much do you pay for one litre of plant-based milk in purchase?	Average: 1.88 EUR/net



What aspects are most important to you when buying plant-based milk? Rank the following aspects by importance: sustainability, taste, ability to foam, price	<ol style="list-style-type: none"> <li>1. Taste</li> <li>2. Ability to foam</li> <li>3. Sustainability</li> <li>4. Price</li> </ol>
Do you know of any machine producing on-demand plant-based milk?	<p>No: 83%</p> <p>Yes: No commercial machine</p>
Are you interested in a solution that allows you to produce on-demand plant-based milk by the press of a button?	<p>Yes: 30%</p> <p>No: 52%</p> <p>Maybe: 17%</p>

In an ambition to understand customer needs further, we went into a deeper analysis of the survey data, relating the daily used amount with the interest to use an on-demand plant-based milk machine. Indeed, we find a positive correlation between the amount of milk used and the willingness to use a respective machine. Looking at the responses of the survey, we see that participants that own a roastery and a coffee shop were more likely to reply with a yes, than participants that own a coffee-roastery with, e.g., only a tiny bar sale. This is expected behavior as in a coffee-shop setting, the amount of plant-based milk used is significantly higher than in a bar model (up to 25 liters among the responders). Coffee roasters not operating a coffee shop in-house tend to focus their offerings more towards B2B clients, so they cater to fewer end consumers. Furthermore, we observe a significant standard deviation in the amount of plant-based milk consumed by looking at the data. While the mean is 5.81, the standard deviation (SD) is 7.23, with a maximum of 31 liters per day.

Given the findings from the first survey, we conducted personal interviews with coffee shops to further explore the need for a solution to have plant-based milk on-demand in coffee shops. These interviews were predominantly conducted in Lisbon, Portugal (Fabrica, Malabarista, Copenhagen Coffee Lab), Tübingen, Germany (Südhang), Frankfurt, Germany (Holy Cross, Backyard Coffee), Freiburg, Germany (Guenter Coffee Roasters, 5 Senses). The German interview partners are current customers of the Ocafi GmbH.

The consensus among the interviewees was that the demand for plant-based milk has vastly increased over the past three years from around 5-10% to 50% or more of overall milk consumption. The main reason for the coffee shops to stick to given market offerings was that producing top-quality milk in terms of taste and foamability in-house proves complicated. Nevertheless, all the coffee-shop owners complained about sustainability concerns and missing transparency of the current market players. Indeed, they were dissatisfied by the existing packing size: one-liter Tetra Paks, which proves highly unpractical in a professional context. Further, produced packaging waste does not align with their overall image of sustainable coffee production, sourcing, and serving.

Generally, the interviewed coffee shops were also unsatisfied with the pricing. They confirmed the results from our survey as they are paying around EUR/net 1.90 - 2.00 for one liter of plant-based milk, presenting a markup of approximately 40% in comparison with conventional offerings. This is enabled by the strong branding and few alternatives in the market. Oatly, the most significant player in the market for plant-based milk managed to build a somewhat synonymous branding. It connects the Oatly brand name with a unique taste and excellent foamability. 7 of the 8 interview partners used oat milk solely, with one also offering pea-based milk from a company named vly.

Overall, all interview partners were highly interested in an on-demand solution. However, we learned that switching costs between the on-demand and RTD alternatives are apparent. When developing the on-demand machine, **omilk** must keep additional features in mind, further enhancing the usefulness of the given machine. One such feature could be to portion the plant-based milk in the required amounts for the respective drink sizes (Latte: ~210ml; Flat white/ Cappuccino: ~120ml) to reduce waste even further.

### **3.2. Survey for end-consumers**

The survey for end consumers is less critical for validating the need for our product as coffee shops

will be our direct clients. Still, it aims to explain what consumers value most from their local coffee shop and what they think about self-made plant-based milk.

The survey was conducted with 70 respondents, of which 52 are regular coffee drinkers (43 daily and 9 two to three times a week). We will only focus on the regular coffee drinking group and exclude the occasional or non-coffee drinkers from the analysis.

Firstly, we aimed at finding out the preferences on cow milk and different plant-based milk substitutes. A rating system with a scale from 1 to 5 (popularity) was implemented, with oat milk being the most popular choice with a rating of 3.5, followed by cow milk with 3.2. The other alternatives have a rating of 2 or lower.

Secondly, respondents had to rank the most important aspects when choosing a coffee shop. In figure 6, there is an overview of the aspects and the results. The highest importance was given to the coffee quality with a score of 4.2, followed by location and price. The sustainability of products sold represents the overall median with a score of 3.3. Home-made plant-based milk is not a critical aspect for choosing a coffee shop as it was given the lowest score with 2.1. However, people care about the availability of plant-based milk as they gave an average score of 3.15. Therefore, there is some importance to the plant-based offering in coffee shops.

*Figure 6: Scores of survey question regarding importance of aspects when choosing coffee shop*

Aspect	Mean score	Standard deviation
Coffee Quality	4,2	0,8
Location	3,8	0,9

Price	3,4	0,9
Sustainability of products	3,3	1,0
Availability of plant-based milk	3,2	1,3
Organic offering	3,0	1,0
Home-made plant-based milk	2,1	1,0

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Thirdly, we checked whether respondents buy plant-based milk for home usage and whether they do so from their local coffee shop. Our findings show that two-thirds of the respondents buy plant-based milk for home usage; however, only one respondent does so from his/her local coffee shop. This person indicated that the coffee shop resells the milk from other brands. All other respondents buy their milk substitutes at regular shops or grocery stores.

Lastly, respondents were asked about their likelihood of buying plant-based milk from their local coffee shop if it was fresh and homemade. Only a small percentage of respondents indicated that they would start buying their milk substitutes from their local coffee shop.

Our primary learning from the survey for end-consumers is that consumers do care about sustainability and plant-based milk alternatives but not as much as they care about the quality of the coffee or the location of a coffee shop. Also, most consumers prefer convenience over an effort to go to a coffee shop to buy a freshly prepared plant-based milk. Ultimately, people still buy their milk substitutes in grocery stores like everything else. However, there is a minority willing to change habits when the market offers more fresh and sustainable products. Given the trend towards more sustainability, this minority has the potential to grow.

### **3.3. Discussion of results and findings**

The results of the surveys are two-fold. On the one side, we have the coffee shops excited to have an

alternative solution to buying one-liter paper packages of plant-based milk. On the other side, we have customers who care about sustainability and plant-based products to some degree but are indifferent about homemade or bought plant-based milk. Thus, the main benefiting party is the coffee shop. Coffee shops would reduce their packaging waste, have a fresher product and benefit from possible cost savings. However, they would likely not benefit from marketing the on-demand milk product to their customers.

Our findings suggest that coffee shops expect vast advantages from the on-demand milk production over buying RTD plant-based milk. While sustainability plays a critical role, an expensive but sustainable solution will eventually not find critical adoption rates as smaller coffee shops often operate on the edge of profitability. They are unlikely to pay more for an on-demand solution than what they are used to pay. Furthermore, the quality aspect is critical and should be equal to competing products such as the widely adopted Oatly Barista.

While very few customers were interested in purchasing freshly made oat milk from their coffee shop, we will likely experience a shift in customer purchase behavior in the mid-run. More consumers will be concerned about sustainability which could create a new revenue source for coffee shops as they could resell the on-demand produced plant-based milk in glass bottles to their customers. We will not investigate this opportunity further as it is not in our control, but the coffee shop has to make these decisions.

All in all, the results are conclusive and confirm our *H1* as our idea addresses a problem in the B2B market of coffee shops. We have seen throughout our idea validation that coffee shops are excited to contribute to sustainable actions further. However, they have a vital interest in reducing their cost or keeping them similar.

# Individual Part

## 4. Marketing and Sales Plan

The following section will propose a marketing and sales plan to an oat powder manufacturer, focusing on business clients seeking to enter the German market. The B2B target group definition requires a marketing plan and sales activities targeting cafés and coffee shops. Though sales and marketing efforts will initially leverage an existing Germany network<sup>1</sup> to business clients, we have identified several activations to supplement this strategy accordingly.

First, B2B sales activities will target hot and warm leads within the network. Cold leads will be left out during the first year of operations. Our network of several hundred contacts to coffee roasters and coffee shops makes this strategy possible. Initially, the founders will conduct sales activities themselves to better understand the client's requirements. We plan to use Guerrilla marketing strategies to create fast virality once our products (powder-mix and machine) are launch-ready (Behal et al. 1970).

First, we will start setting up a Shopify website and a social media presence. We will push the *omilk* account to gain initial traction using our existing channels. First activations will include sending a sample box consisting of 500gr of our oat-powder recipe, a shaker bottle with our branding, and a printed description of the product. The printed description and the oat-powder packaging will contain a QR code linking to a YouTube video with a 30-second short pitch of our solution and short preparation instructions. Ultimately, the activation aims

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<sup>1</sup> Ocafi GmbH focuses on green coffee trade between Brazil and Germany and was founded by Niklas

to motivate leads to give our oat-powder solution a try and compare it to existing market offerings. The video will stress the key unique selling points being sustainability and cost savings.

Furthermore, we will supplement these more traditional sales methods with more aggressive Guerrilla strategies. Unknown to many, in 2019, Oatly set out a campaign that 100% subsidized all coffee drinks consisting of oatly milk in many larger German cities for one weekend. This relatively small activation ultimately led many people to see the brand for the first time, making it synonymous with a quality plant-based alternative. Since we have witnessed the effectiveness of the given activation, we will adopt a similar strategy focused on the five larger German cities (Berlin, Munich, Hamburg, Cologne, and Frankfurt).

In addition to this initial activation, we seek to build *omilk's* brand through ambassadors consisting of baristas.<sup>2</sup> These baristas will be actively linked to the brand, promoting our products, receiving a share of each sale conducted by them. Beyond a share of the initial sale, we will pay them a small retainer on every subsequent purchase made by a new customer. Activating a network of ambassadors who directly work in our potential client base, carrying purchase decision-making power, keeping them hooked through the retainer will be vital to building a partner network.

Though the B2B sector will present our target market, we will play small activations over our Instagram channel to activate early adopters in the B2C sector. However, no significant marketing budget nor sales activities are planned for the given sector within the first two years of operations.

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<sup>2</sup> Professional coffeeshop employees

## 5. Financial feasibility analysis

This section is dedicated to conducting a financial feasibility analysis for an oat powder and on-demand oat milk machine producer (*omilk*'s business hypothesis). We present a ten-quarter, 2.5-year financial plan starting on the 1. January 2022. The given plan provides a detailed overview of the development costs, expected marketing spending, calculated unit economics, and general assumptions.

### 5.1. Baseline Numbers & Assumptions

The financial modulation of our business is based on quotes by future partners, our experience, and several key assumptions. The following section will give a detailed breakdown of each. First, we will present the initially incurred costs to develop the first, production ready version of our oat-milk powder. We assume that the development of our first oat milk powder will take up to 6 months starting at the beginning of January 2022. Hence our startup and testing period, expecting no revenues during given timeframe.

Experience suggests that *Omilk* should get registered as a GmbH, driven by liability concerns of selling a food product to businesses. The minimum capitalization of a GmbH in Germany is EUR 25.000 which can be used to fund business activities. The required capital will be invested by the founders. The legal and registration costs amount to around EUR 1.000. Having spoken to Dr. Gaukel and Prof. Dr. Kohlus, we understand that to have a professionally formulated recipe, *omilk* will have to spend up to EUR 15.000. Though a more considerable upfront investment, Prof. Dr. Kohlus ensured us that given professional formulation in a lab environment would save us from going through several iterations with manufacturing partners at later stages. The brand development for the launch and first small marketing activations are estimated to cost around EUR 5.600. A first quote by Ocafi's



marketing agency Bruno & Gaspard has been obtained. The initial travel expenses around Germany to meet partners we estimate at EUR 3.000 for the first six months of 2022. The overall start-up expenses, therefore, amount to roughly EUR 25.000. An overview is provided in *figure 8*.

*Figure 8: breakdown of start-up costs*

Cost point	Costs (in EUR)
Company registration (GmbH) + Legal costs	1.000
Development of the final recipe	15.000
Brand development + First marketing	5.600
Initial travel expenses	3.000
<b>Total startup costs</b>	<b>24.600</b>

As recommended per Eisenmann (2011), we have conducted a detailed analysis of our powder unit economics to understand our contribution margin. Unit costs are estimated at around EUR 0.65 per 100gr of powder which equals to one-liter of oat milk. A summarized overview is given in *figure 9*. Given these unit economics and our market understanding, we will price our solution at EUR 1.60 per 100gr, thereby 20-25% cheaper than current RTD and powders in the market. This should satisfy customers beyond their sustainability concerns and reduce switching barriers. Within the first six months of operations (hence Q3 and Q4 2022), we will offer a manual dosing machine to those clients signing a 6-month subscription for free and put it up for sale at EUR 175. Our purchasing costs for given machine lie at EUR 100. Doing so, we expect switching costs to be reduced only marginally. A significant mass-market adoption can only be obtained post automatic machine development and deployment.

Figure 9: unit economics of 100g oat milk powder

Cost Point	Cost (in EUR)
Oatmilk powder	0.45
Fat powder	0.05
Outsourced services (mixing and packaging)	0.10
Packaging	0.05
<b>Total costs</b>	<b>0.65</b>

We will obtain the first seed funding after the first two quarters dedicated to developing the powder MVP. A large share of our first funding will be invested in developing the automatic, on-demand machine. A smaller share of the funding will enable us to start hiring first employees, which will initially consist of 1 full-time food technician (EUR 3700 monthly), 1 Intern (EUR 1500 monthly), and the founding partners (EUR 4000 x 3 monthly). After the first two quarters of operations, the initial team will be supplemented by an additional intern and two sales & marketing representatives (each EUR 4500 monthly). All other expenses covering rent, accounting, and legal topics are estimated to amount to on average EUR 2.200 a month for the first eight quarters of operations.

Given the breakdown of the *Serviceable Obtainable Market* of 24.786.000, hence 2.700 clients conducted in *Section 4*, we predict a break-even sales volume of 1100 clients – 40% of our SOM and 3% of the TOM. A detailed breakdown of the assumed consumption numbers, respective market share, and churn rates can be found in *figure 10*. This seems viable given large, expected expenditures in the machine development and employment costs during the first ten quarters. We believe that *omilk* could become cash flow positive during the 11th quarter.

Figure 10: consumption, market share and churn rates of SAM

Category	Small Coffeeshop	Medium Coffeeshop	Large Coffeeshop
Daily consumption	5	15	30
Share of serviceable obtainable market	35%	50%	15%
Monthly churn rate	30%	30%	30%

Key to our solution's success and exponential adoption will be a successful seed-funding round to be conducted after the first two-quarters of development time. The funding will be necessary to develop a machine capable of producing the oat milk from the powder in a simple, consistent, and clean manner. Given machine development, we expect to take around 12 months, hence being ready at the end of the fourth operating quarter (6th quarter after the company's establishment). We forecast the development of the machine to require EUR 500.000 in seed funding. These EUR 500.000 are expected to be burned within a year (until the End of Q2 2023), after which we will thrive for a larger funding round of around EUR 3.000.000 to finance the manufacturing plant and scaling operations.

## 5.2. Key Performance Indicators

We use five Key Performance Indicators (KPIs) to guide our decision-making process. First, the overall number of customers, the Customer Acquisition Cost (CAC), the average Customer Lifetime Value (CLV), the net profit margin, and the overall cash burn. Given our focus market and its SAM of 2.700 clients, we expect exponential growth after the 3rd quarter of operations. In the first two operating quarters, we expect a slower growth given the believe that a machine will make coffeeshops overcome the switching costs of changing to our solution. Nevertheless, we are confident that using our oat powder and the powder dispenser,

we will attract around 85 clients within the first four operating quarters until the fully functioning automatic machine is market ready. We will attract significant momentum once the machine is launched due to further cost-saving possibilities and a more sustainable approach.

Initial customer acquisition costs (CAC) are assumed to lie around EUR 180 due to the directly approachable network of Ocafi. This lies within the range for retail/ B2B products (Bailyn 2021). After the first four quarters of operations, give a fully functioning machine, we will hire two marketing & sales representatives. Figure 11 provides a short overview of the key KPIs.

*Figure 11: overview of most critical KPI's*

Year	1 Year of Operations	2 Year of Operations
Number of customers	84	1073
CAC	180	180
CLV (average) <sup>3</sup>	5220	9000
Net profit Margin <sup>4</sup>	3%	23%
Cash Burn <sup>5</sup>	-575.610	-57.883

### **5.3. Profit & Loss**

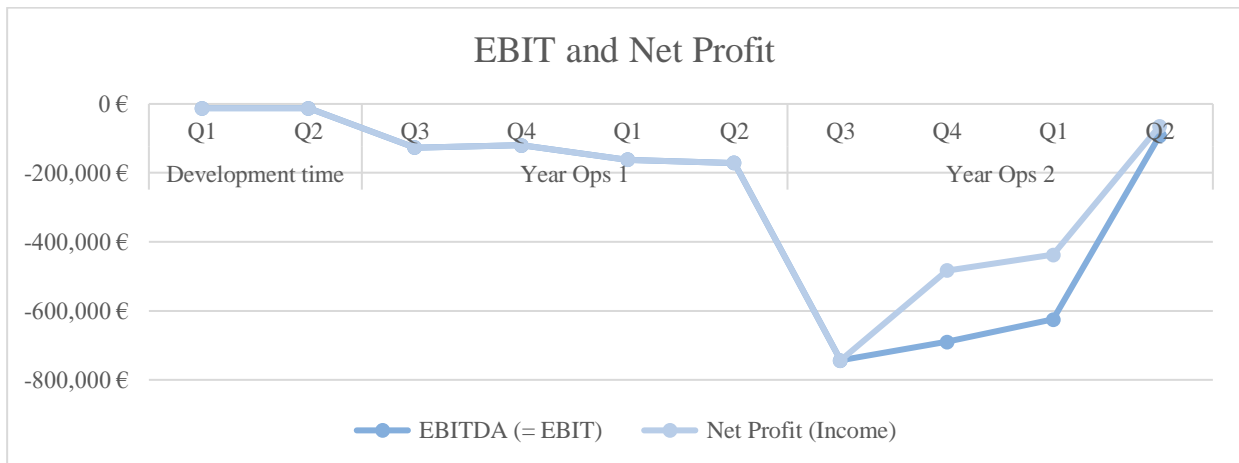
Given our research and adopted assumption we forecast our net profit and EBIT for the first two years of operations as illustrated in *figure 12*.

<sup>3</sup> Monthly churn rate of 30% expected

<sup>4</sup> End of period

<sup>5</sup> End of period

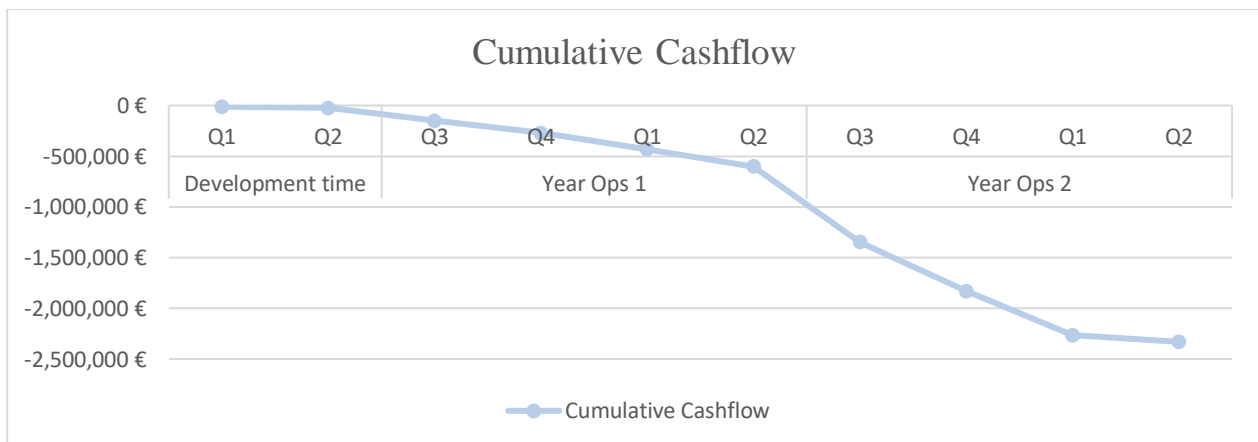
Figure 12: EBIT and net income in the first 10 quarters



#### 5.4. Cashflow and Investment

Over the first ten quarters in business, the cumulative cash flow will reach the bottom of the Death Valley in the 10th quarter – hence, the fourth quarter after launching the machine into the market. The expenditures are due to our initial investment into powder development, machine development, and the build-up of crucial manufacturing infrastructure and marketing expenditure.

Figure 13: cumulative cashflow for the first 10 quarters



## 6. Team

The following section will shortly present the founding team that can be considered diverse given the diverse background of the founders. This will help in the process of idea generation and implementing new ideas into new products (Kristinsson 2016).

**Niklas** will be the company's CEO, responsible for the sales and finance-related topics at *omilk*. He gained multiple years of experience in the coffee industry, building his coffee trading company Ocafi and his coffee roastery in Sao Paulo (Cafezambu). This has led him through the ups and downs encountered when embarking on the entrepreneurial journey, making him well equipped to make *omilk* a success story. Prior to his entrepreneurial endeavors, he conducted several internships in M&A boutiques, sharpening his understanding of company financials and KPIs. Prior to his Masters in "Business Analytics" at Nova SBE, he completed a Masters in "Political Science and Political Economy" at the London School of Economics and a Bachelors in "International Business Administrations – Major Finance".

**Puya** will be responsible for the operations at *omilk*, which includes the development of both the food- and hardware product from a business perspective. Furthermore, he will oversee the supply chain and work closely with strategic partners. Through his experience in fintech and operations, he faced several sourcing and logistic challenges in which he negotiated contracts and optimized supply chain processes. He created significant savings for the companies he worked for. Puya has gained experience in early-stage start-ups growing from 10 to 100 employees and in later-stage ventures growing from 500-1500 employees. In addition, he was heavily involved in the founding process of a legal-tech start-up for one full year. Prior to his work experience, Puya was doing a bachelor's in international business in Maastricht.

**Third Co-Founder** – the engineering mastermind and CTO. Omilk seeks a third co-founder equipped with the necessary knowledge to lead the development of the automated oat-milk machine. A person who brings the tech innovation angle to the table can articulate the business needs to a development team, bridging between the business and engineering sides.

## 7. Roll-out plan

Given our past entrepreneurial experience, we know that planning for a new venture significantly differs from planning for an existing company. Using a clearly defined rollout plan connected to set milestones helps maneuver these uncertainties. Setting milestones upfront enables us to connect our experience gained throughout the entrepreneurial journey to *omilk's* viability, adjusting our strategy based on what we experience (Block 2014).

The analysis for this report has put us in a position to test several hypotheses in the real world surrounding. However, to validate or invalidate taken assumption, we must embark onto the rollercoaster of any start-up founder. Evolutionary prototyping, a term we already mentioned in *Section 5*, will help us to stay agile, pivoting our business model along the way. We have decided to split the upcoming ten quarters into 4 phases, constantly reassessing our performance as we go.

### 7.1. Phase 1: Kick-off with MVP development & customer feedback

**Timeframe:** 1<sup>st</sup> and 2<sup>nd</sup> Quarter of 2022

**Product:** We will invest into the professional development of the oat-milk powder using our connections to Dr. Gaukel and Prof. Dr. Kohlus. Furthermore, we seek to

build a connection to a company named IDM dispensers<sup>6</sup> to source our first manual dispenser.

**HR:** At the start of the 1<sup>st</sup> Quarter, we set out to find an engineer to join **omilk** as a 3<sup>rd</sup> founding member.

**Sales:** We will use Bruno & Gaspard as a marketing agency to develop a first brand book, setup our social media presence and build the first version of our shopfiy webshop. Furthermore, we will setup a blog within our webshop to document our entrepreneurial journey from day one.

**Partner:** We will contract with a strategic partner for the development of our oat milk powder. Additionally, we will select a fulfilment provider that manages all our

## 7.2. Phase 2: Launch of oat powder, Team building, VC funding

**Timeframe:** 3<sup>rd</sup> and 4<sup>th</sup> Quarter 2022

**VC funding:** Given the successful formulation of our MVP, we seek EUR 500.000 in VC funding to back the development of the fully automatic, on-demand machine.

**Product:** We will launch our MVP into the German market and use the VC funding to develop the automated on-demand oat-milk machine. We expect the development of the machine to take up to 12 months.

**HR:** During phase 2, **omilk** will hire 1 full-time food-technician, and 1 intern for business development.

**Sales:** Ocafi's hot leads will be approached, creating first sales. Our set target are 26 active clients at the end of the 4<sup>th</sup> quarter. We will furthermore create several activations using the network of brand ambassadors.

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<sup>6</sup> [https://www.idm-dispenser.com/collections/protein-powder-dispenser?utm\\_source=Search\\_PT\\_Shopifi&utm\\_medium=google\\_search={keywords}&gclid=CjwKCAiA78aNhAlEiwA7B76p0Kvec\\_3eGpazKkbjeqKpLdc3VToSxy7d9JGEPVsnhlgqDVnhD66uxoCX\\_AQAvD\\_BwE](https://www.idm-dispenser.com/collections/protein-powder-dispenser?utm_source=Search_PT_Shopifi&utm_medium=google_search={keywords}&gclid=CjwKCAiA78aNhAlEiwA7B76p0Kvec_3eGpazKkbjeqKpLdc3VToSxy7d9JGEPVsnhlgqDVnhD66uxoCX_AQAvD_BwE)



### 7.3. Phase 3: Finish machine prototyping, Shift into scaling

**Timeframe:** 1<sup>st</sup> and 2<sup>nd</sup> Quarter 2023

**VC funding:** We seek to secure EUR 3M in funding at the end of the 2<sup>nd</sup> Quarter allowing us to setup manufacturing in Germany and conduct aggressive marketing activations during Phase 4.

**Product:** Finish the machine prototyping and shift into manufacturing.

**HR:** We seek to enlarge the team, adding four sales & marketing representatives and one additional intern.

**Sales:** We will conduct the roll-out of an aggressive brand ambassador referral program, starting first activations with an almost ready machine prototype.

**Partner:** *Omilk* will find a manufacturing partner in Germany.

### 7.4. Phase 4: Manufacturing plant & growth

**Timeframe:** 3<sup>rd</sup> and 4<sup>th</sup> Quarter 2023

**Product:** We seek to add further plant-based powder options and start the development of a cheaper B2C version of the machine.

**HR:** *Omilk* will hire 4 additional sales & marketing representatives and start hiring a team for the manufacturing plant.

**Sales:** We will launch the on-demand oat-milk machine into the German market, and prepare the entrance into other interesting markets such as the UK. Furthermore, we will find first brand ambassadors in the United States.

## 8. Conclusion

This paper's main objective was to investigate the need and feasibility of an oat-milk powder connected to an on-demand oat-milk machine. We put a particular emphasis on examining the

current market offerings and respective B2C and B2B client demands. We find that all current market offerings are targeted towards end-consumers (B2C). Indeed, no sustainable and affordable solution exists for business clients. Our research results show the need for the on-demand production of plant-based milk in a professional café or coffeeshop surrounding, confirming the overall business hypothesis.

One of the significant limitations of analyzing *omilks* business hypothesis is that while we can outline a detailed plan of how to approach this project, the actual entrepreneurial execution bears many uncertainties. Looking at our ideation process, we have pivoted our solution several times, and we cannot rule out further changes along the process. This also applies to the project's financial feasibility, which is based on several assumptions that are not fixed but are heavily dependent on the decisions we make. Indeed, while our research proves the need for a new solution, we cannot simulate the switching costs for professional clients perfectly. Ultimately, the test of a given solution and understanding of these switching costs in a real live scenario can only be examined with a fully functioning on-demand machine. This creates a significant entrepreneurial risk for the founding team and should thus be carefully evaluated during further, in person, oat-milk powder tests with cooperating coffee stores.

Given that our overall business hypothesis is confirmed, the following proposed steps are to go into the professional development of the recipe. The founding team will search for a suitable engineer to complete the team and identify a small manufacturer of specialized machinery in Germany. Overall, *omilk* sees a significant opportunity in the plant-based milk market, and the founding team feels ready to embark on the entrepreneurial journey.

## 9. Appendices

### 9.1. Appendix 1: Numilk product impressions

*Left: consumer product, Middle: professional version, Right: on-demand milk machine placed inside grocery stores*



## 9.2. Appendix 2: Factsheet RTD and powder-based plant-based milk brands

Criteria	Oatly <sup>7 8</sup>	Vly <sup>9 10</sup>	Sproud <sup>11 12</sup>	Alpro <sup>13</sup>	Minor Figures <sup>14 15</sup>	Brief	Moelk <sup>16</sup>	Rebel-kitchen <sup>17</sup>	Rise <sup>18</sup>	Bluefarm <sup>19 20</sup>	Organic Labs <sup>21</sup>
Type	RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	Powder	Powder
Location	Sweden	Germany	Sweden	Belgium	UK	Germany	Germany	UK	USA	Germany	USA
Founding Date	1990	2018	2018	1980	2014	1985	2020	2014		2019	
Product	Oat	Pea	Pea	Oat, Cashew, Hazenut, Rice, Almond, Soya	Oat	Soya, Oat, Hemp, Rice, Spelt, Cashew	Oat	Oat	Oat	Oat powder	Oat
Price per Liter	2.19	2.5	2.1	1.99	2.19	2.47	2.19	2.6	2.25	2.20	2.49
Strength	Brand, First-mover, World-Wide	Pea focus	Pea focus	Brand, Infra-structure	Trans-parency, Social	Brand, Infra-structure				Powder concept, First-mover	Powder concept
Weakness	Ingredient transparency processed	processed	processed	Old processed	processed	processed	processed	processed	processed	Not foamable processed	processed
Funding	\$441.4M	\$9M	\$4.8M	NA	Pound147.9k	Family owned	NA	NA	NA	Seed Round	NA
Taste description	Smooth Creamy (possibly more than whole milk)				Smooth, yet sweeter than Oatly Not as creamy, less authentic oat flavor				Very sweet, somehow salty, somehow unpleasant		

<sup>7</sup> <https://www.crunchbase.com/organization/oatly>

<sup>8</sup> <https://www.oatly.com/stuff-we-make/oat-drink/oat-drink-barista-edition-11>

<sup>9</sup> <https://www.vlyfoods.com/>

<sup>10</sup> <https://www.crunchbase.com/organization/vlyfoods>

<sup>11</sup> <https://www.crunchbase.com/organization/sproud-66f8>

<sup>12</sup> <https://besproud.com/our-product/>

<sup>13</sup> <https://www.alpro.com/>

<sup>14</sup> <https://minorfigures.com/>

<sup>15</sup> <https://www.crunchbase.com/organization/minor-figures>

<sup>16</sup> <https://shop.moelk.co/en>

<sup>17</sup> <https://rebel-kitchen.com/>

<sup>18</sup> <https://risebrewingco.com/products/original-oat-milk>

<sup>19</sup> <https://www.crunchbase.com/organization/blue-farm>

<sup>20</sup> <https://en.bluefarm.co/>

<sup>21</sup> <https://organiclabs.de/>

### 9.3. Appendix 3.1: B2B survey design

The initial survey was sent in German but for the purposes of this paper, it was translated to English.

No	Question	Answer Choice
1	Do you sell plant-based milk?	Yes No
2	Which plant-based milk do you sell?	Oat Soy Almond Pea Rice Others – please specify
3	Which brands do you sell?	Oatly Vly Sproud Alpro Minor Figures Others – please specify
4	How many liters of plant-based milk do you use a day?	Slider between 0 and 80
5	How much do you pay for a liter of plant-based milk/ net?	Slider between EUR 1 and EUR 3 (0.1 increments)
6	Which aspects for plant-based milk is most important to you? (To be ordered from 1 to 4 by interviewee)	Sustainability Taste Foamability Price
7	Do you know of machines that enable the production of plant-based milk on-demand?	Yes (If yes dropdown asking interviewee to specify) Unsure No
8	Would you be interested in a solution to produce plant-based milk on-demand?	Yes Unsure No
9	What makes you interested or uninterested in such a solution?	Open text field

## 9.4. Appendix 3.2: B2C survey design

No	Question	Answer Choice
1	How old are you?	Scale from 0-99
2	Gender	Male Female Non-binary / third gender Prefer not to say
3	Which country are you currently living in	Germany Italy Portugal France Spain Other (text field)
4	How often do you consume coffee products (coffee, espresso, cappuccino etc.)	Daily 2-3 times a week Once a week Very occasionally I don't
5	If you consume a coffee product containing milk, what milk do you prefer to drink it with?	<i>Respondents gave each of the following a rating from 1-5:</i>  Cow milk Oat milk Almond milk Rice milk Coconut milk Other (text field)
6	Please choose the importance of the following aspects when choosing a coffee shop	<i>Respondents could rate each of the following from five-fold Likert scale from extremely unimportant to extremely important:</i>  Location Price Coffee quality Availability of plant-based milk Home-made plant-based milk Organic offering Sustainability of products
7	Do you buy plant-based milk for home usage	Yes No Other (text field)
8	Do you buy plant-based milk from your coffee shop for home usage?	No Yes, they produce it themselves Yes, they resell it from other brands Other (text field)
9	How likely are you to start buying plant-based milk from your coffee shop when it is self-made and fresh?	Scale from 0-100 indicating the likelihood

## 10. Bibliography

- Armstrong, Martin, and Felix Richter. "Infographic: The Countries Most Addicted to Coffee." Statista Infographics. Statista, October 1, 2020. <https://www.statista.com/chart/8602/top-coffee-drinking-nations/>.
- Aschemann-Witzel, Jessica, Rebecca Futtrup Gantriis, Paola Fraga, and Federico J. Perez-Cueto. "Plant-Based Food and Protein Trend from a Business Perspective: Markets, Consumers, and the Challenges and Opportunities in the Future." *Critical Reviews in Food Science and Nutrition* 61, no. 18 (2020): 3119–28. <https://doi.org/10.1080/10408398.2020.1793730>.
- Bailyn, Evan. "Average Customer Acquisition Cost (CAC) by Industry: B2B Edition." First Page Sage. First Page Sage, May 12, 2021. <https://firstpagesage.com/seo-blog/seo-roi/average-customer-acquisition-cost-cac-by-industry-b2b-edition-fc/>.
- Behal, Vikas, and S. Sareen. "Guerilla Marketing: A Low Cost Marketing Strategy: Semantic Scholar." undefined, January 1, 1970. <https://www.semanticscholar.org/paper/GUERILLA-MARKETING%3A-A-LOW-COST-MARKETING-STRATEGY-Behal-Sareen/bbeb67d54ada7f051f41c0b96509294cb281a6ac>.
- Block, Zenas, and Ian C. MacMillan. "Milestones for Successful Venture Planning." *Harvard Business Review*, August 22, 2014. <https://hbr.org/1985/09/milestones-for-successful-venture-planning>.
- Bluefarm. "Der Herstellungsprozess Unseres Hafermilchpulvers." Blue Farm, 2021. <https://www.bluefarm.co/blogs/theblue/herstellungsprozess>.
- Bogueva, Diana, and Dora Marinova. "Which Plant-Based Milk Is Better for the Planet? This Is What the Science Says." ideas.ted.com, April 29, 2021. <https://ideas.ted.com/which-plant-based-milk-is-best-for-the-planet/>.
- Campbell, Heather R., Fahd M. Alsharif, Patrick J. Marsac, and Robert A. Lodder. "The Development of a Novel Pharmaceutical Formulation of D-Tagatose for Spray-Drying." *Journal of Pharmaceutical Innovation*, 2020. <https://doi.org/10.1007/s12247-020-09507-4>.
- CBI. "What Is the Demand for Coffee on the European Market?" CBI. Accessed December 16, 2021. <https://www.cbi.eu/market-information/coffee/trade-statistics>.
- Chi, Clifford. "Tam Sam Som: What Do They Mean & How Do You Calculate Them?" HubSpot Blog, July 26, 2021. <https://blog.hubspot.com/marketing/tam-sam-som>.
- Dee-Ann Durbin, The Associated Press. "Oat-Milk Producer Oatly Raises \$1.4 Billion in Wall Street Debut." *Arkansas Online*, May 21, 2021. <https://www.arkansasonline.com/news/2021/may/21/oat-milk-producer-oatly-raises-14-billion-in-wall/>.

- Eisenmann, Thomas R. *Business Model Analysis for Entrepreneurs*. Boston MA: Harvard Business School Publishing, 2011.
- Franklin-Wallis, Oliver. “White Gold: The Unstoppable Rise of Alternative Milks.” *The Guardian*. Guardian News and Media, January 29, 2019. <https://www.theguardian.com/news/2019/jan/29/white-gold-the-unstoppable-rise-of-alternative-milks-oat-soy-rice-coconut-plant>.
- Good Food Institute. “Retail Sales Data: Plant-Based Meat, Eggs, Dairy: GFI.” The Good Food Institute, July 30, 2021. <https://gfi.org/marketresearch/>.
- GÜREL, Emet. “SWOT Analysis: A Theoretical Review.” *Journal of International Social Research* 10, no. 51 (2017): 994–1006. <https://doi.org/10.17719/jisr.2017.1832>.
- iCrowdNewswire. “Plant Milk Market Is Expected to Grow at a CAGR of 14.5% from 2020 to 2028: Growing Number of Vegan Food Consumers Is Expected to Drive the Plant Milk Market.” *Business*, May 18, 2021. <https://ipsnews.net/business/2021/05/18/plant-milk-market-is-expected-to-grow-at-a-cagr-of-14-5-from-2020-to-2028-growing-number-of-vegan-food-consumers-is-expected-to-drive-the-plant-milk-market/>.
- Institut für medizinische Diagnostik Berlin-Potsdam. “Lactose Intolerance.” Lactose intolerance - IMD Institut für medizinische Diagnostik, Labor, 2021. <https://www.imd-berlin.de/en/special-areas-of-competence/food-intolerances/lactose-intolerance>.
- Kaffee Partner. “Milchalternativen Für Kaffeetrinker.” Kaffee Partner. Kaffee Partner, May 18, 2021. <https://www.kaffee-partner.de/de/magazin/lesen/milchalternativen-fuer-kaffeetrinker>.
- Kristinsson, Kari, Marina Candi, and Rögnvaldur J. Sæmundsson. “The Relationship between Founder Team Diversity and Innovation Performance: The Moderating Role of Causation Logic.” *Long Range Planning* 49, no. 4 (2016): 464–76. <https://doi.org/10.1016/j.lrp.2015.12.013>.
- Locke, Taylor. “This Company Is Making a Keurig-Type Gadget for Plant-Based Milk - and They Just Landed a \$2 Million Deal from Mark Cuban.” *CNBC*. CNBC, March 29, 2021. <https://www.cnbc.com/2021/03/29/shark-tank-plant-based-numilk-got-a-2-million-deal-with-mark-cuban.html>.
- Magazine Smithsonian. “Nut Milks Are Milk, Says Almost Every Culture across the Globe.” *Smithsonian.com*. Smithsonian Institution, August 15, 2018. <https://www.smithsonianmag.com/history/nut-milks-are-milk-says-almost-every-culture-across-globe-180970008>.
- NIH. “Definition & Facts for Lactose Intolerance.” National Institute of Diabetes and Digestive and Kidney Diseases. U.S. Department of Health and Human Services, 2021. <https://www.niddk.nih.gov/health-information/digestive-diseases/lactose-intolerance/definition-facts>.
- Numilk. “Numilk Website.” Numilk, 2021. <https://numilk.com/>.



- Oatly. Our process, 2021. <https://www.oatly.com/stuff-we-make/our-process>.
- “Personal Liability of Shareholders of a GmbH.” GLNS, 2013. <https://www.glns.de/en/news/newsletter/2013/personal-liability-of-shareholders-of-a-gmbh/>.
- Poore, J., and T. Nemecek. “Reducing Food’s Environmental Impacts through Producers and Consumers.” *Science* 360, no. 6392 (2018): 987–92. <https://doi.org/10.1126/science.aaq0216>.
- Prytulska, Nataliia, Iuliia Motuzka, Anna Koshelnyk, Olena Motuzka, Ludmila Yashchenko, Malgorzata Jarossová, Paulína Krnáčová, Joanna Wyka, Ewa Malczyk, and Marta Habánová. “Consumer Preferences on the Market of Plant-Based Milk Analogues.” *Potravinárstvo Slovak Journal of Food Sciences* 15 (2021): 131–42. <https://doi.org/10.5219/1485>.
- Ritoe, Sew. “The German Plant-Based Milk Market.” Future Grocery Shopping. Future Grocery Shopping, May 7, 2021. <https://www.futuregroceryshopping.com/blog/the-german-plant-based-milk-market>.
- SCA. “The SCA Publishes Updated Coffee Map of Europe.” Specialty Coffee Association News, December 17, 2019. <https://scanews.coffee/2019/12/17/the-sca-publishes-updated-coffee-map-of-western-europe/>.
- Sherrell, Linda. “Evolutionary Prototyping.” *Encyclopedia of Sciences and Religions*, 2013, 803–. [https://doi.org/10.1007/978-1-4020-8265-8\\_201039](https://doi.org/10.1007/978-1-4020-8265-8_201039).
- Tangyu, Muzi, Jeroen Muller, Christoph J. Bolten, and Christoph Wittmann. “Fermentation of Plant-Based Milk Alternatives for Improved Flavour and Nutritional Value.” *Applied Microbiology and Biotechnology* 103, no. 23-24 (2019): 9263–75. <https://doi.org/10.1007/s00253-019-10175-9>.
- Tolwin, Ari. “Numilk Home: Plant-Based Milk Machine.” Kickstarter, November 12, 2021. <https://www.kickstarter.com/projects/numilk/numilk-home-plant-based-milk-machine>.
- Willott, Lindsay. “Average Survey Response Rate - What You Need to Know.” Customer Thermometer. Lindsay Willott, July 12, 2019. <https://www.customerthermometer.com/customer-surveys/average-survey-response-rate/>.
- Zlatopolsky, Ashley. “With a \$2 Million Deal, Detroiter Allows Consumers to Create Plant-Based Milk at the Push of a Button - the Jewish News.” The Detroit Jewish News, June 10, 2021. <https://thejewishnews.com/2021/06/11/with-a-2-million-deal-detroiter-allows-consumers-to-create-plant-based-milk-at-the-push-of-a-button/>.