

Business Plan REYVER

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REYVER

Go vertical.



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Executive Summary

REYVER is the global vertical farming as a service solution, that through virtually accessible farms in urban areas provides consumers the opportunity to rent a garden, from which they can source food, which is then delivered to them.

Targeting all age groups of urban and sustainably thinking customers, we will serve urban consumers and overcome current challenges in the (organic) food supply chain at the same time.

Starting our offering in Berlin, we are able to combine an attractive market with our experiences to build the foundation for our future expansion. On a mid-term perspective, we want to expand to the Asian and North American cities with a comparable demand to Berlin.

The REYVER operational approach relies majorly on automation and proximity to the customer to foster our reputation and ensure economical attractiveness.

Our management team is a divers and cross-functional team that is passionate to start the business.

Within the first three years, we want to capture around 1% of the Berlin vegetable consumption market leading to double-digit million revenues for our business and more than recouping the investment.

Sustainability is a key pillar of our vertical farming business, as there are proven advantages around water savings, food supply security, energy consumption and more.

1. Product and service / Organizational Plan

There is nothing like taking a bite from something truly fresh and organic, knowing that it is grown sustainably by yourself. REYVER is the global vertical farming as a service solution, that through virtually accessible farms in urban areas provides consumers the opportunity to rent a garden, from which they can source food, which is then delivered to them. You will have the unique opportunity to become a farmer without owning a plot of land. Right on your device you are in control of what you plant, monitor every step of your crop's growth process, and have them delivered right to your doorstep from our farm near your home.

The journey to your own garden with your self-grown crops starts with a few simple steps. To begin the journey, you register an account through our app or website, select the crops in our animated virtual farm and plant them through simple drag and drop – we do the rest! We provide you year-round availability of your preferred crops which can be monitored 24/7 through our installed video cameras. Planting and watching your crops grow will give you a sense of pride and accomplishment that can't be matched by walking through a supermarket aisle. You can be certain that you provided the best veggies for yourself and your family while doing your part to save our planet.

Through our daily monitoring of data points within the farm, we can accurately plan the harvest and ensure on-time delivery, directly to your home. Your crops travel only a few kilometers, right after the harvest, which prolongs shelf life and protects the crops' nutritional value and flavor they would have lost along the thousand kilometers journey. From our farm to your table, we are committed to ensure the clean, safe, and sustainable journey of your produce. And more than that, we give you the opportunity to feel the satisfaction of having participated in the process of producing your own food.

This is your organic experience, started by you and executed by REYVER.

2. Market analysis

The market for organic food grows rapidly around the world, with vegetables making up the majority of this. We begin by targeting the German market as a testing ground for our service, as we are well connected here. In Berlin, we have an ideal city to prototype but will expand to the Asia and North American markets within three years, with Los Angeles and Singapore as high priority targets.

Germany is ideal, because over 50% of Germans wish to have an own garden, and over 20% would love to have one to supply themselves with vegetables. As the core reason for not owning one they name the fact that it is too much work and far too expensive, or impossible, due to living in a big city. What's more, 83% of Germans want to buy organic food, but are put off by labels, prices and uncertainty regarding sustainability.

For an initial market analysis, we used Berlin, as Germany's largest city. Berlin has around 3.6 million inhabitants, with a total of 1.3 million households which are inhabited by people below 65. By splitting the households into our 3 main target groups, we arrived at the customer types A (Singles), B (Couples) and C (Families). Given, that the average German consumes 92kg of vegetables per year, we took conservative estimates, that our customers would order at a lower factor of their average consumption from us (c.f. Appendix 3), resulting in a total market of over 175 thousand tons per year. It is reasonable to assume this comparison for all large cities in the world, as Berlin is a relatively small example with a population in the average wage segment.

Our customer groups are defined over three parameters:

1. Tech affinity: In large urban cities this is a given, almost everyone below the age of 65 is able to – and regularly using smart devices, ordering via Amazon.
2. Health and environmental awareness: With a growing consciousness on the factors that influence our own wellbeing, as well as that of our earth, the majority of urban consumers factor this into their decisions.
3. Financial stability: As our product will be priced above the cheapest, low-end vegetables, we won't be able to target the lowest-earning group of consumers. In Western urban areas this, however, doesn't pose an issue, as they make up just a small percentage of households and tend to account for less of the vegetable consumption.¹

Through surveying 100 people (c.f. Appendix 2), we were able to confirm that interest in locally produced organic food was high to very high. What stood out was that over 80% of interviewees said they had already bought food in a subscription and over 70% of those enjoyed it. With trust, delivery of the product and sustainability at the core of our USP we directly distinguish ourselves from our competitors. Furthermore, there is a proven lack of trust in conventional organic labels, which we overcome through our possibility to watch your farm live.

¹ French, S.A. et alt.

Our marketing approach is simple and focusing on core elements. Considering the marketing of other sustainable products, we want to position ourselves relevantly for our target group. Our young, urban customers will be attracted where they are via multiple touchpoints. Local ads in public transport and selected cooperation with sustainable-oriented supermarkets, bars and restaurants raise offline awareness of our brand, digital approaches will address the digitally savvy customer. Promotions with selected influencers (Instagram) and relevant complementary platforms (cooking platforms), will lead to more digital awareness and builds our main marketing channel.

We decided on these marketing tools to build our brand relevantly and not push our brand too aggressively, which will help us position our brand with a good-minded, sustainable reputation.

Through conversations with 3 companies in Germany, we found employee benefit programs at 6 USD / kg an interesting offering, that also them to further their carbon offsetting.

Combining these three approaches yields multiple touchpoints for customers from all our target groups and puts REYVER into the focus of consumers from all age groups.

3. Operational plan

Having understood, that the market for an experience-driven farming experience is yet untapped, the question of feasibility arrives in the operative structure. REYVER's operational plan is built around three cornerstones, that focus on the customer in the center of our decisions.

1. Customers want fresh, tasty and sustainable food.
2. They want service to be superior – delivered to them on demand and tailored to their wishes.
3. To address the mass market, the price must be competitive with comparable products

Solving this requires a heavily technology-driven concept. The crops are stacked vertically and horizontally in a controlled ecosystem.² The amount of light, temperature, CO2-levels, humidity, water, and nutrients are monitored through our cloud-based farming platform to ensure maximum yield and quantity. REYVER's vertical farms are aeroponic, meaning our crops will receive necessary nutrients and water from the mist through their roots in a closed system. This technique uses 95% less water than traditional farming and zero soil.³ Herbicides and pesticides become obsolete.

² Banerjee & Adenaauer (2014)

³ Aero Farms (2020)

When the customer subscribes via our app or website, the seeds are planted according to their growth estimations in intervals and continuously monitored. Depending on the order frequency and amount, the intervals will be adapted per order through smart algorithms.

The food will be fresh and sustainable, traveling just an hour from farm to table. But superior service goes further. If the user for example wishes to consume salad regularly, it must be delivered about once a week to maintain perfect freshness. We plan on using the rolling-planting method – a system in which each individual “garden” is not bordering directly to the next but has a small margin of movement into either direction. This allows to continuously replant crops around the garden and to harvest multiple times per month for each customer.

This directly leads to pricing, as this kind of service, if performed by humans is for one prone to errors and extremely expensive, especially if located in a country like Germany, with unskilled workers already earning up to 12 Dollars per hour. To achieve maximum cost efficiency and plannability, we strive to maximize automatization of planting, watering and harvesting within the vertical farm, to set the baseline for our extremely environmentally friendly farming process.

After farming, the food is delivered right to the doorstep of our customers in the most sustainable transportation locally available. As soon as drones are suitable and cost-effective transport alternatives, we plan on winding up the majority of transportation by drone.

Our initial focus on Berlin led us to consider the Central European vegetable consumption behavior. We chose only demanded vegetables and those with a certain profitability to gain a competitive position. Although the customer decides the grown crops eventually, we expect a certain split within the following categories.

We clustered the vegetables in *salads* (typical salad ingredients, e.g. tomatoes), *herbs* and *others*.

From a demand perspective, we see “salads” as the most-consumed vegetables in Germany.⁴

The sales and profitability perspective includes an analysis of the price in German supermarkets and specified markets (“Biomärkte”) as well as growth and harvesting specific characteristics, mainly influencing the feasibility of vertical cultivation. Lastly, personal interviews with farmers and agriculturists resulted in recommendations for our offering.⁵

⁴ Statista (2021)

⁵ AgriFarming (2019)

Aggregating the results from both analyses, we came up with an expected split of our cultivable space. Making this our starting point, we'll be able to cover the majority of urban consumers.

Salads have the highest demand and therefore are expected to make up for the highest share of space. This category consists of basic ingredients, which have a high harvest frequency. It includes lettuce, (cherry) tomatoes, kales, beets and collard greens. This category is not only valuable from a demand perspective, but as cherry tomatoes are also highly profitable, it lays the foundation for a solid economic basis and enables further expansion. Salads will stand for the majority of the cultivation space.

Herbs are small portions to complement our offering. While boosting our profitability, a local offering of herbs also offers us the opportunity to position ourselves as a real alternative to widely travelled herbs.

The last category is *superfoods*. Increasingly popular due to their healthiness and immune-boosting abilities, superfoods are growing in demand, especially in urban areas. As they have a high price tag, we position ourselves in an attractive competitive position. This is meant to improve our competitive advantage to set us apart from similar offerings and to be able to test and adapt our offering to regional preferences and trends.

4. Management team and organizational plan (c.f. appendix 1)

In the role of strategy lead is David Muuss, a strategic thinking enthusiast with a background in buy-side M&A, strategy consulting and a network of PE contacts within Central Europe. His knowledge of financial markets and his experience in scaling firms in the multi-million-dollar revenue range through M&A activities will allow the continuous growth of the company.

Florian Böhme will be taking over the role of financial planning. Through his experience in Venture Capital, as well as his vast knowledge of the IT and Start Up market, he will be responsible for capital planning. Throughout operations, his Bachelor of Psychology and work experience within IT allows an agile execution method and an understanding of customers.

Malte Röpcke is an ex-national league handball player and will take over the sustainable agricultural planning. His network enables us to shorten our time to market significantly and his experience in the medical sector will yield us a better understanding of our health-aware customers.

For the marketing department, Fabian Schröder has gained valuable insights within corporate development and brings the necessary skillset to supervise international projects in fast moving environments.

Nanticha Koapanichkul is a people's person, with strong intercommunication skills and volunteering experience in multiple sectors. She will be in the lead of HR, corporate social responsibility and expansion planning, with her understanding of the Asian market allowing us to expand internationally and access the attractive mega-cities there.

5. Financial plan and investment potential

By specifically catering our services to three household groups, and our customer-centric approach which focuses on both experience and ease of use, we aim to capture between [REDACTED] of the Berlin vegetable market within [REDACTED]. At an average kg price of [REDACTED], this would result in yearly revenues of up to [REDACTED]. The pricing is placed just below any high standard organic label – at far better sustainability metrics and with the addition of experiencing one's own garden.

To put these numbers into perspective, this goal would require just below [REDACTED] throughout our 3 customer groups, divided at around [REDACTED] per customer type.

We have decided to go with a rather conservative approach regarding our financial planning. Being demand-dependent, as produce will be grown just as it's ordered by our customers, facilities can be seen through a modular lens, as new vertical farming technology will be deployed as needed.

To arrive at our financing estimates we reverse-engineered the expected demand for our Berlin venture and used data of state-of-the-art facilities of peers, namely BrightFarm and AeroFarms, for our assumptions.⁶ As REYVER will not have the capacity to rely on its own technology for the start, the biggest investments of around [REDACTED], will be for the machinery. We estimate the investment between those two peers, but it can be considered conservative as the necessary produce for REYVER will be [REDACTED]. We have applied the same logic towards rent calculations, aiming towards the upper boundary, even though BrightFarm uses different and more space-intensive technology, which leads us to rent cost of around [REDACTED] if we assume an average price of [REDACTED] for

⁶ Tasgal (2019)

an industrial warehouse in the Berlin proximity. This could be reduced by finding a facility that offers the possibility to aggressively expand rather than renting out the projected space for 2023.

Other main cost factors include personnel (hired on the go), maintenance, energy costs, and marketing. Overall, the Berlin facility will have paid for itself within [REDACTED] in the optimistic scenario, which is still a conservative estimate at only [REDACTED] in the base scenario with significantly slower customer acquisition. Marketing is calculated on a worst-case basis, though the costs for the virtual farming technology dwarfs most of the other financial positions within the model. REYVER plans to invest in R&D which will begin once the Berlin facility is up and running, to improve the technology in-house.

That being said and being in a still very conceptual phase of our endeavor, it is still entirely possible that it proves to be more efficient to rely on 3rd party technology & equipment and focus on scaling the business, opening up facilities all around the globe, and giving our customers access to the sustainable and organic food they deserve.

6. Sustainability

According to the United Nations, the world's population is expected to reach 9.7 billion in 2050. The rising demand for food requires us to double the number of crops we grow, ultimately resulting in environmental disaster and climate change. We must find a new approach towards food production that is sustainable and able to meet the growing food demand.

Sustainability is at the core of REYVER. We adopt the "Sustainability in Food Systems" framework from the Food and Agriculture Organization to encompass our approach to our business. In order to develop a business that is truly sustainable, we must ensure that we generate positive value along three dimensions simultaneously: environmental, social and economical.

On the *environmental dimension*, vertical farming significantly improves sustainability. We will touch on three main topics: water conservation, energy consumption and land and soil usage.

Water conservation: It is estimated that approximately 3,000 liters/person/day are needed for producing food in Europe.⁷ According to The National Center for Biotechnology, conventional agriculture uses water inefficiently. Aeroponic-based vertical farms, the most water-efficient farming method, allow us to severely improve this metric. To put this into perspective, a recent

⁷ Kalantari et al. (2018)

study shows that conventional agriculture needs 250 times the water per kg of lettuce, that vertical farms use.⁸

Energy consumption: Transportation makes up the majority of fossil fuel consumption in agriculture. Crops grown in conventional agriculture travel 3,220 km on average. Fossil fuels are also used in production such as plowing and harvesting, causing both local and global air pollution. With local vertical farms, long-distance transport and the use of heavy machinery become obsolete.⁸

Land and soil consumption: The World Resources Institute states we will need nearly twice the size of India in farmland to feed the projected population in 2050. Vertical farms are not limited to one plane, achieve higher crop yield and do not require soil to grow crops. Vertical farms can produce up to 30 times more lettuce per year per square meter.⁹

On the *social dimension*, we do not only aim to achieve sustainable farming, but we must also serve society. We will touch on three main topics related to the social dimension of sustainability: food security, job opportunity and education.

Food security: According to The Intergovernmental Panel on Climate Change, global warming effects lead to yield losses and diminished crop quality. Low-income consumers are facing increasing food prices and less access to fresh food. Vertical farms can be operated in any location and provide year-round crops.

Job opportunity: Our farm provides job opportunities to underserved urban areas. The main jobs involve farmworkers, lab researchers, IT personnel and management. According to CropOne, unlike conventional agriculture, vertical farms operate year-round, which enables stable employment and income to the community.

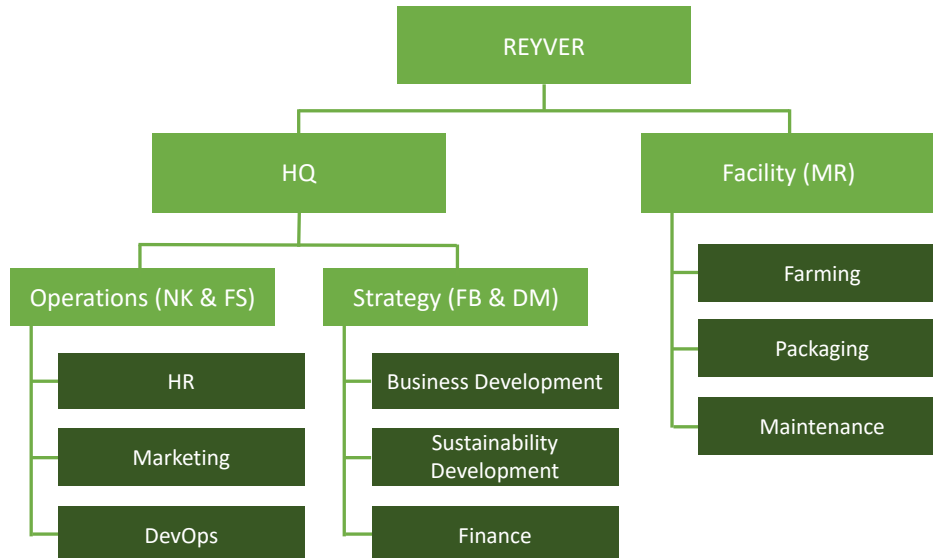
Education: Our vertical farm can be a platform for teaching and learning about a sustainable method of farming. We plan to collaborate with universities, local schools and hospitals to provide opportunities to the local community for all processes involved in food production.

On the *economic dimension*, as a highly profitable business that will be present in less-active areas of cities, we provide tax returns to local governments, profits to our shareholders and serve as a customer to local research institutions, as well as an investing into green startups.

⁸ Naus (2018)

Appendix

Appendix 1: REYVER organizational plan



Appendix 2: REYVER survey

REYVER Survey

	Strongly disagree	lightly disagree	neutral	slightly agree	Strongly agree	n/a
I would consider buying vertical farming products	6	12	24	33	46	0
I have bought food in a subscription and believe it is a good solution	14	14	13	29	32	19
I trust conventional Organic labels	31	46	24	17	3	0
I want to own a garden but can't.	12	29	24	24	27	5
It is important to me, where the vegetables I consume come from	10	8	30	34	39	0
I want to take part in my food's production process	13	18	14	35	41	0
At the same price, I would always prefer the fresher and more sustainable product	1	12	17	42	49	0
I would pay a premium for locally grown food	19	18	16	39	26	3
I enjoy having full flexibility and transparency in my vegetable consumption	9	19	22	33	38	0
	Trust	Delivery	Sustainability			
What is the most important factor for buying organic food in a subscription?	38	24	59			

n/a = No response

Appendix 3: REYVER P&L

Profit and Loss Report	Rollout Phase		Traction Phase		Stable Phase	
	2021		2022		2023	
	H1	H2	H1	H2	H1	H2
Revenue	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]