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Global Case Competition

Stage 2: Case Study

April 2025

Contents

Task description

As the strategy consulting team for your new client VinoBotics, your objective is to develop a revenue growth strategy that provides a clear, data-backed roadmap for scaling the company over the next 5 years. The strategy should balance short-term wins with long-term growth.

The deliverable, a presentation with up to 12 slides (excl. title, agenda slides, backup) for the leadership team at VinoBotics, should address four key areas: market & competitive analysis, revenue growth strategy, feasibility, and implementation roadmap.

Recommended structure

Item	No. of slides	Indicative topics
Executive Summary	1	Key findings & recommendation
Market Analysis	2	Target markets, barriers, key competitors
Growth Strategy Recommendations	2-3	Expansion roadmap, partnerships, revenue models
Financial & Operational Feasibility	2-3	Cost-benefit analysis, scalability, investment required
Implementation Roadmap & Risks	2	Execution steps & major risks
Total	**10-12**	**Please do not exceed slide limit of 12**

You are free to leverage openly available industry data to support your analysis. You can make assumptions, but please make it clear if you do. The final outcome should provide clear recommendations and solid reasoning on where to invest resources for the highest impact and how to position the company as a leading player in agritech.

Judgment criteria

Successful teams will present well-written slides that tell a proper story and address the challenge thoughtfully. Their submissions will excel at:

1. **Slide-writing**: clean, well-structured, and consistent format that is easy to read and understand, with visuals and charts that convey messages purposefully and efficiently. Brevity and concise messages are appreciated.
2. **Data storytelling**: present insights following a logical story or flow, with clear messages that build upon previous slides.
3. **Strategic thinking**: address key challenges, evaluate multiple growth options and trade-offs, and ensure recommendations are actionable and practical for VinoBotics.

Submission & support

Please submit your slides here by Sunday, April 13th end of day - you can submit an excel file in addition. We will offer an advanced think-cell training and general Q&A session on Monday, April 7th to support you.

We expect concise, thought-through, non-generic solutions.
We value quality over quantity.

Case

Company overview

- **VinoBotics** is a late-stage agritech startup specializing in **robotic solutions for high-value fruit crops**, particularly wine grapes, leveraging AI and precision agriculture to optimize harvesting and crop management.
- The company was acquired by **TerraGrowth Partners**, a growth private equity firm focused on technology and agribusiness innovation.
- Its core product is an **AI-powered robotic harvester**, capable of replacing up to five human workers per machine, improving efficiency and reducing labor dependency.
- Currently operates in **New Zealand and Australia**, with a customer base primarily in **premium vineyards** that emphasize quality and precision farming.

Navigating the future of wine-tech expansion

As you begin your assignment at VinoBotics, you embark on a trip to meet key customers in New Zealand. As your flight descends over the rolling vineyards of Marlborough, the heart of New Zealand's wine industry, you reflect on a recent tasting session of an exquisite Sauvignon Blanc, where a sommelier shared an intriguing insight – how this region, despite its relatively short winemaking history, became a global technological pioneer in viticulture.

With each passing vineyard on your drive through Marlborough, you recall how precision agriculture, AI-powered disease prevention, mechanized irrigation, and fermentation monitoring have reshaped wine production here. What was once an artisanal craft, now operates at the intersection of agronomy and cutting-edge technology, producing some of the world's most valuable white wines.

VinoBotics has successfully piloted robotic solutions designed to enhance wine quality, optimize yields, and reduce labour dependency. It is at a pivotal moment, transitioning from a late-startup phase to the expansion and growth stage. Naturally, scaling beyond its home market seems like the logical next step. After all, the three largest European wine-producing nations – France, Italy, and Spain – account for nearly 3 million hectares of vineyards, a market 100 times the size of Marlborough.

However, size is not the only factor at play. While New Zealand's winemakers embrace automation, AI, and data-driven viticulture, Europe's centuries-old wineries pride themselves on tradition, craftsmanship, and minimal technological intervention. For many, introducing robotics and AI into their vineyards would not just be an operational shift – it could be perceived as a threat to their heritage, values, and brand identity.

If Europe's resistance to technological adoption poses a major hurdle, what about other regions? Chile, South Africa, and parts of the U.S. and Australia share New Zealand's progressive approach to agritech, offering fertile ground for expansion. While their total vineyard areas are smaller than Europe's giants, their willingness to integrate robotics, IoT, and AI-powered solutions could make them low-hanging fruit for rapid scaling.

But is geographic expansion the only way forward? As you prepare to meet with local winemakers, you realize that this trip is more than a customer visit – it's the beginning of a strategic roadmap to define your client's future growth trajectory in the global wine-tech industry.

Harvesting the future: Scaling a pioneer

When the opportunity arose to VinoBotics, the decision was clear. The global private equity firm TerraGrowth Partners had built its reputation by backing the future of agribusiness – investing in companies that pushed the boundaries of sustainability and efficiency.

This 50-person late-stage startup, now a portfolio company, developed cutting-edge robotic solutions tailored for premium wine grapes. At its core was a robotic arm engineered with computer vision and multi-spectral sensors. It is capable of detecting fruit ripeness and plant health with a level of precision unmatched even by

the most experienced human harvesters. Using advanced algorithms, it could assess sugar levels and fruit firmness without puncturing the fruit, ensuring peak quality at harvest. The infrared cameras scanned leaf structures, detecting early signs of disease or nutrient deficiencies, while a soil probe analyzed nutrient content, offering AI-driven recommendations for intervention.

The market it served was equally sophisticated. Premium vineyards across Australia and New Zealand – renowned for their commitment to precision agriculture – were the company's primary customers. For them, the ability to optimize harvest timing and maintain consistent product quality wasn't just a technological convenience; it was a competitive advantage that supported the nuanced flavor profiles and premium positioning of their wines.

Financially, the company stood on solid ground (Figure 1). With robotic units priced at an average of $150,000, each machine could replace up to five human harvesters and a junior agronomist throughout the growing season, driving significant cost savings and operational efficiency for the clients. From its first pilot customer five years ago, the company had steadily scaled production. In 2024 alone, it delivered 70 robotic solutions. Meanwhile, manufacturing efficiencies improved, bringing the average production cost down to $25,000 per robot – a strong indicator of increasing margins and a path to profitability. 2025 sales are forecasted at 85 units, with the cost remaining the same; however, the production facilities reach their maximum capacity of 100 units per year.

Despite high R&D costs and a growing team, increasing revenues made VinoBotics profitable in 2022

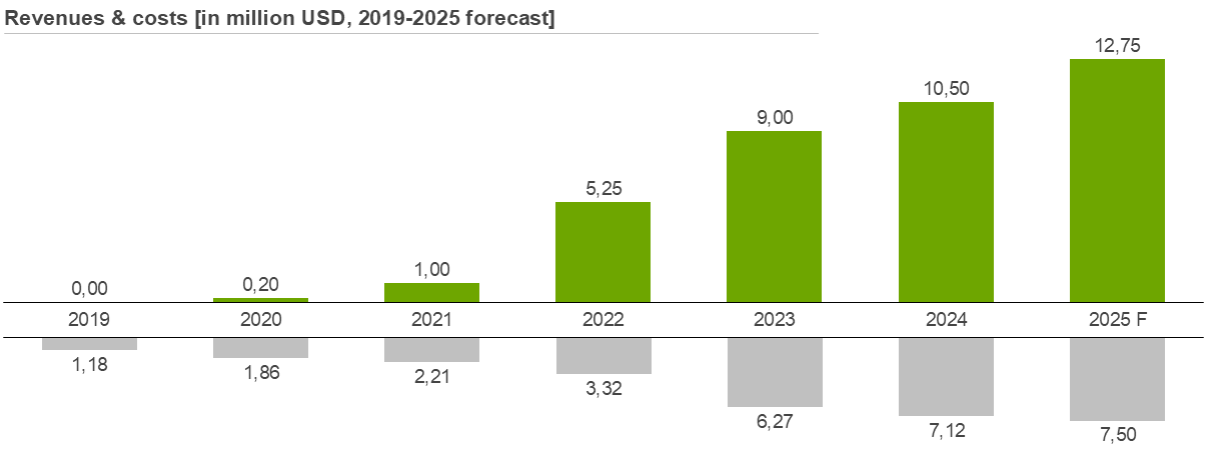

Figure 1

Now, with PE ownership in place, the next step was clear: a value creation plan to take the business from a promising regional player to a global force in agritech. The challenge was in execution – where to expand, how to refine the business model, and what strategic moves would maximize valuation in the years ahead.

From field to factory: Solving pain points with precision

The challenges faced by vineyard operators and high-value crop producers remained largely unchanged for decades. Despite advancements in agricultural science, harvesting and crop maintenance remained labor-intensive, unpredictable, and costly – particularly in regions like Australia and New Zealand, where seasonal labor shortages and climate variability made precision agriculture a necessity rather than a luxury.

For the premium vineyards and high-value crop farms that formed the company's core customer base, the stakes were high. The success of a harvest wasn't simply about yield; it was about timing, quality, and consistency – elements that determined the character and market positioning of a wine or fresh produce. Yet, these very factors were vulnerable to an array of pain points that technology had only begun to address.

1. Labor shortages & seasonal dependency

Finding and retaining skilled labor was an ongoing struggle. Harvesting was a short, high-intensity activity, lasting just four to six weeks per year, meaning vineyard managers had to rely on seasonal workers who were increasingly scarce and expensive. Immigration policies, shifting labor markets, and competition from other agricultural sectors compounded the challenge.

- Without enough skilled hands, growers risked suboptimal harvest timing, leading to inconsistencies in fruit quality and, ultimately, the final product.
- Even when workers were available, training them to pick at optimal ripeness required time, and human fatigue inevitably led to mistakes, inefficiencies, and fruit damage.
- Rising labor costs made human-based harvesting an increasingly unsustainable model, particularly for vineyards focused on maximizing margins without compromising quality.

2. Precision & quality control gaps

Unlike commodity crops, premium wines and high-value fruits rely on precise harvesting conditions. The difference of a few days in harvest timing could be the difference between an exceptional vintage and an average one.

- Human harvesters, even the best-trained, relied on visual and tactile assessments, which introduced variability and inconsistency in ripeness selection.
- Certain quality markers, such as sugar content and fruit firmness, were nearly impossible to gauge accurately in the field without invasive testing.
- Poor timing and human error could lead to lower-quality fruit, reducing overall yield value and impacting the premium positioning of the end product.

3. Crop health management: a reactive approach

Vineyards and fruit farms required constant monitoring to prevent disease outbreaks, pest infestations, and nutrient deficiencies. Yet, traditional crop management relied heavily on manual scouting, with agronomists and farm workers visually inspecting crops – a method that was not only time-consuming but often reactive rather than proactive.

- Diseases like powdery mildew or botrytis often became visible only after significant damage had occurred, requiring more aggressive interventions.
- Soil health was typically assessed through infrequent sampling, leading to delayed responses when nutrient imbalances arose.
- Overuse of fertilizers and pesticides – often applied without precise data – led to unnecessary costs, environmental concerns, and regulatory scrutiny.

The robotic solution: Automating precision & efficiency

By integrating advanced robotics, AI, and sensor technology, the company's solution directly addressed these pain points, transforming how vineyards and fruit farms managed their operations.

1. Replacing seasonal labor with consistent automation

- The robotic harvester, capable of replacing five to seven human workers and a junior agronomist, ensured a consistent, scalable, and cost-effective harvesting process.
- Unlike human labor, robots could operate 24/7, unaffected by fatigue, skill variability, or labor shortages.
- In the off-season, the same robots could be used for health monitoring, pruning recommendations, and predictive maintenance, maximizing their utility year-round.

2. Unmatched precision in harvesting

- Equipped with computer vision and multi-spectral sensors, the robot could detect fruit ripeness with pinpoint accuracy, far surpassing human capability.
- Non-invasive sugar and firmness analysis ensured that only perfectly ripe fruit was harvested, preserving premium quality.
- Infrared cameras analyzed leaf structures, identifying early disease markers before visible symptoms appeared.
- Soil probes continuously measured nutrient levels, allowing AI-driven recommendations to optimize fertilization and irrigation strategies.

Where this technology stands today

The company's robotic harvesting system represents a significant advancement in precision viticulture, exceeding the quality and consistency of human harvesters – but only under specific conditions. Right now, the robot is highly optimized for a single grape variety, Sauvignon Blanc, within a specific region.

This is no coincidence – Sauvignon Blanc in this environment provided the ideal test case:

- The fruit structure (medium-sized clusters, relatively loose).
- The ripening pattern (clear sugar-acid development).
- The canopy architecture (consistent row spacing, good fruit visibility).
- Predictable weather conditions for training AI models.

Through extensive field training, the robot's AI has outperformed human pickers in ripeness selection and gentle handling, reducing variability and ensuring peak flavor extraction for premium wines. However, the system is not yet flexible – it cannot easily adapt to new grape varieties or regions without significant reprogramming and additional R&D work. While the robot has proven its value in Sauvignon Blanc vineyards, it remains rigid and highly specialized. Expanding to other grape varieties, regions, or even other fruit crops presents major challenges.

1. Lack of multi-variety adaptability in current robots
    - Each robot is currently hardwired to a single grape profile – it cannot switch between programmed varieties on demand.
    - In its next evolution, the system will need a modular AI model, where operators can load a new "harvesting recipe" without requiring full retraining. This is a key R&D priority but is still in early-stage development.
2. Hardware limitations for expanding beyond grapes
    - While the system is excellent for vineyards, adapting it to other berries or high-value fruits (cherries, avocados, apples) is currently impossible without major redesigns.
    - These fruits have different harvesting mechanics – cherries require delicate detachment without pulling entire clusters, while avocados require a twisting motion and must be harvested at different heights.
    - Adapting the robot's gripper, force sensitivity, and mobility would take 3-5 years of R&D before commercialization.

Exhibits

Exhibit 1: Inside the company – structure, capabilities, and origins

The company began, like many disruptive innovations, as a small but ambitious engineering project driven by a clear problem: labor shortages in agriculture. Founded five years ago by a group of robotics engineers and agronomists in Australia, the company started with a simple idea: could machine learning and robotics match or even surpass human precision in harvesting delicate, high-value crops?

The first prototype, built in a garage-sized workshop, was a proof of concept. It was slow, bulky, and nowhere near market-ready, but it caught the attention of early-stage agritech investors who saw potential in its vision. Over the next few years, rigorous field testing with select vineyards in Australia and New Zealand transformed the project into a commercially viable solution, and the company steadily grew from a handful of engineers to a 50 full-time-employees operation (Figure 2), refining its hardware and AI-powered software.

From five to fifty, expanding the team has been essential to achieving success

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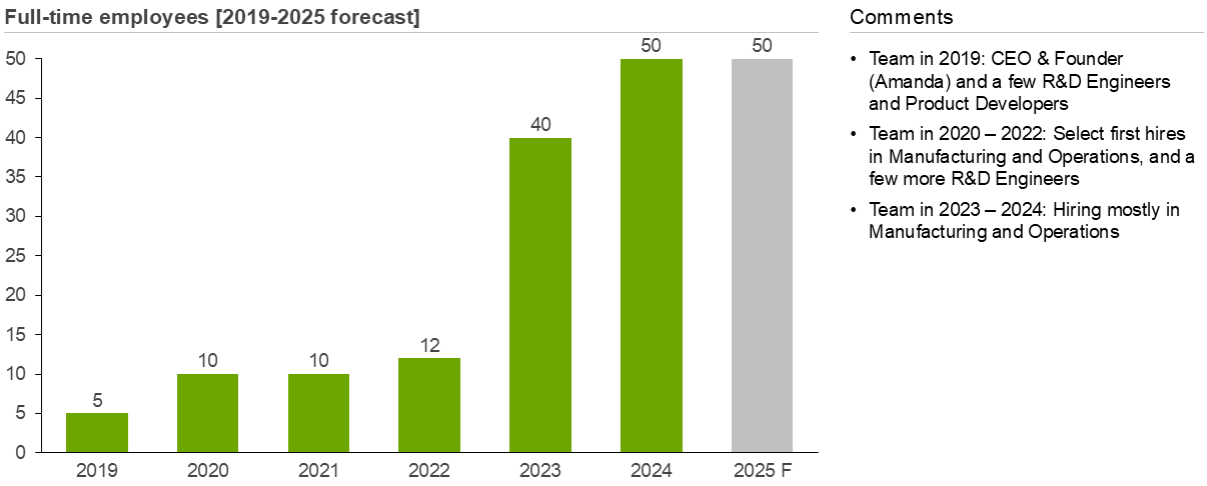

Figure 2

Despite its modest size, the company operates with a lean but highly specialized structure, balancing engineering, strategy, and operational support.

- CEO & Leadership Team: Guides overall strategy, investor relations, and high-level partnerships.
- R&D & Product Development: The core of the company, responsible for robotic design, AI model training, and software development. This team works closely with early customers to fine-tune performance.
- Manufacturing & Operations: Manages hardware production, supply chain logistics, and deployment. While most components are sourced externally, final assembly and quality control are handled in-house.

The company maintains a flat hierarchy, fostering cross-functional collaboration, and operates in a lean manner. Note that there is no Sales & Marketing workforce per se, as the first customers were acquired by connections of the founders and grew by word of mouth.

Exhibit 2: From vineyard to bottle: Where quality is defined

Winemaking is a blend of art, science, and precision, with every step influencing both quality and market value. The process starts in the vineyard, where land, climate, and skilled labor determine the foundation of quality. Careful canopy management, irrigation, and pest control help maximize grape health, while the moment of harvest is critical – picking too early results in underdeveloped flavors, while picking too late can lead to overripe, unbalanced wines. Once harvested, decisions in fermentation, aging, and blending further shape the wine's identity. Production costs depend on the grapes, winemaking, packaging, and sales (Figure 3).

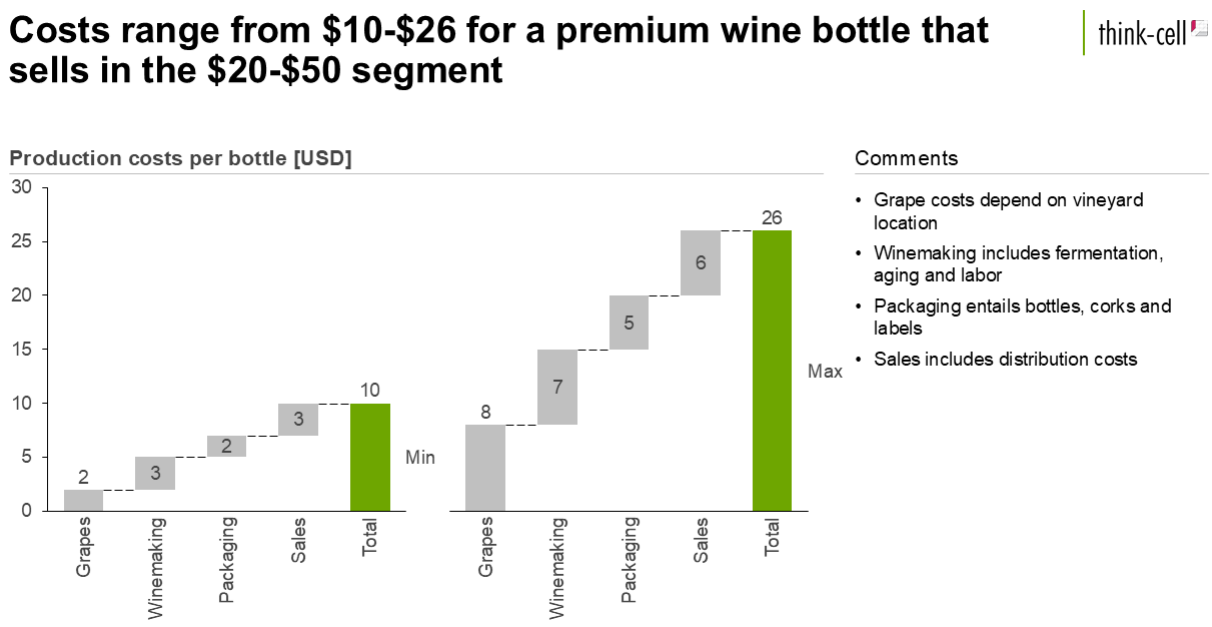

Figure 3

Unlike mass-market wines, premium wines operate on a quality-driven pricing model. For many producers, land and climate naturally limit their pricing potential, but the right precision tools could unlock higher price tiers. Even relatively small improvements in grape selection, fermentation management, and aging precision can push a wine into a higher-value price segment with much greater profit margins (Figure 4).

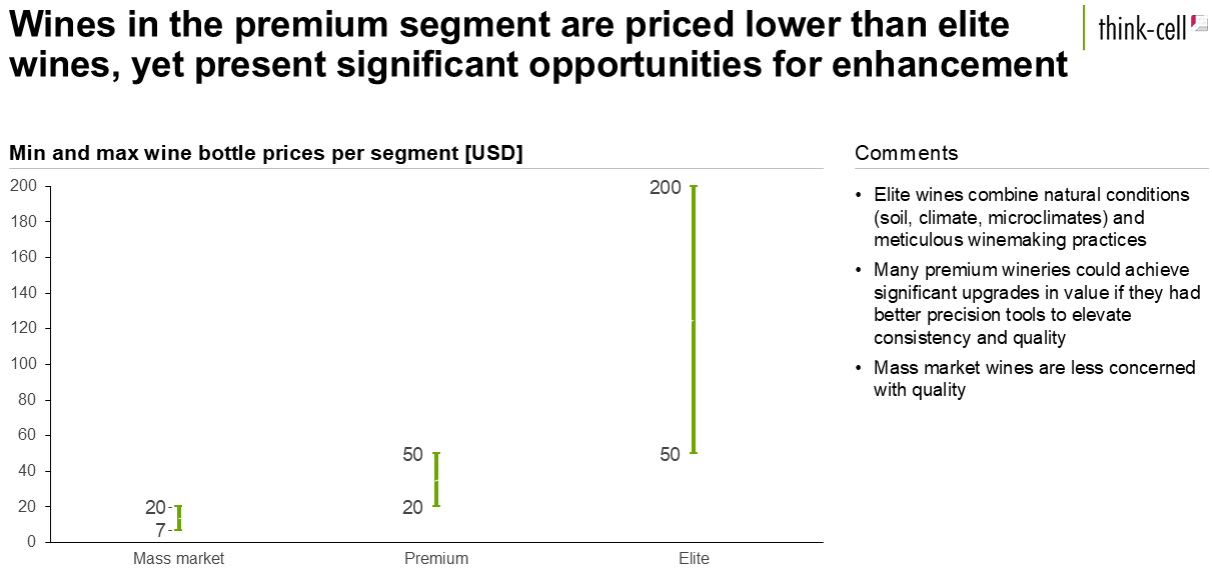

Figure 4

Exhibit 3: Selected emails from clients

Subject: Quick thoughts on pilot + next steps

Hey VinoBotics Team,

Wanted to drop a quick note on the pilot – really impressed with how well the harvester performed on our Sauvignon Blanc. We just got a 96-point rating for this vintage, which is huge for us. The review called out exceptional balance and intensity, and honestly, the consistency your system brought to harvest timing played a big part in that.

Given the success, we're already thinking – how quickly could this be adapted for our Chardonnay (sparkling production) or Pinot Noir? Different canopy, different timing needs, so curious what that process looks like.

Also, are you doing anything around fermentation support or yield forecasting? If we had better harvest volume predictions, we could plan tank space, tweak fermentations, and improve overall efficiency.

Last thing – any roadmap for expanding the software? The crop health insights are great, but we'd love more vineyard management tools – micro-block analytics, disease prediction, maybe even weather-based irrigation recs?

Lots to talk about – let's set up a call soon.

Best,
[Client name undisclosed]

Subject: Great meeting you at dinner

Hey Amanda,

Really enjoyed our conversation the other night – it's always exciting to hear from someone so passionate about agritech. Your vision for VinoBotics is genuinely impressive, and it got me thinking.

As I mentioned, our dragon fruit plantations have been growing fast, and the disease identification situation is getting tougher every year. The way your robots can handle precise harvesting is exactly what we need. I understand it's been optimized for grapes, but if there's any possibility of adapting it to dragon fruit, we'd be very interested in a pilot. I can imagine the tech would need adjustments to work with our delicate fruits, but I'm optimistic you could make it work.

I would love to discuss this further if you think it's worth exploring. Let me know if we can set up a call sometime – I'd be more than happy to walk you through our operation and what we'd be looking for.

Looking forward to your thoughts.

Best,

[Client name undisclosed]

Exhibit 4: Product images and R&D prototypes

Exhibit 5: Internal strategy meeting (Selected Excerpts)

Amanda (CEO):
Let's be realistic. We can't just scale without a solid plan.

Daniel (Head of R&D):
Agreed. Before jumping to European expansion, we need to be clear about what's feasible.

Laura (Head of Operations):
Pricing, market expansion, new crops, and software are the main options, but maybe there's something else we're missing. Let's start with pricing.

Pricing:

- Amanda: We charge $100K per robot, but clients save on labor, improve fruit quality, and optimize timing. Are we underpricing?
- Laura: Big wineries might pay more if we prove ROI, but smaller growers will drop us if we push pricing.
- Amanda: Could we do revenue-sharing or yield-based pricing?
- Daniel: We don't have the data to confidently measure yield improvements. That needs research.

Market expansion:

- Amanda: ANZ is too small. Europe is a big market, but they're resistant to automation.
- Laura: It's more inertia than outright rejection. Precision viticulture is a niche opportunity.
- Daniel: Adoption in Europe will be slow. Chile, South Africa, and California are better markets for expansion.
- Amanda: We'd need local service teams and remote diagnostics to make expansion viable.

New crops:

- Amanda: What about other fruits?
- Daniel: Our AI is built for vineyards. Adapting to other crops requires new datasets and hardware, which would take years of R&D.

Software:

- Laura: Recurring revenue is key. We need a subscription model.
- Daniel: But we have no software team or development roadmap.
- Amanda: Should we build or partner with an existing agtech software firm to accelerate growth?

Amanda (CEO):
Alright, we've got a lot to think about. We need to prioritize our efforts and avoid trying to grow too fast without the resources. Thanks, team – let's see what the consultants recommend.

Exhibit 6: The production process of a premium wine manufacturer

Producing premium wine is a complex, resource-intensive process with high costs, especially for mid-sized wineries producing 50,000-200,000 bottles per year in the $20-$50 segment. The production cycle spans 12-24 months and includes:

1. Harvest & Sorting:
    a. Grapes are selectively harvested to ensure only ripe fruit is picked.
    b. Sorting requires skilled labor to remove underripe or damaged fruit.
    c. Challenges: High labor costs, short harvest window, risk of quality loss if timing is off.
2. Fermentation & Aging:
    a. Juice is fermented for 2-4 weeks, followed by aging for 6-24 months in barrels or tanks.
    b. Challenges: Precise temperature control and monitoring are critical. Small deviations can affect quality.
3. Blending & Bottling:
    a. Wines are blended for consistency and bottled using glass, corks, and labels.
    b. Challenges: Planning, contamination risks, supply chain management.
4. Aging & Storage:
    a. Bottles often require additional aging, tying up inventory and delaying cash flow.
    b. Challenges: Warehousing, temperature control, and cost management.
5. Operational Bottlenecks:
    a. Harvest is the biggest bottleneck (4-6 weeks, labor-intensive).
    b. Disease management and soil health monitoring are time-consuming and require precision.
    c. Equipment maintenance must be performed annually, which can cause delays if not properly scheduled.

Exhibit 7: Wine reviews dataset

The Kaggle: Wine Reviews Dataset is a valuable resource for analyzing wine market trends, consumer preferences, and pricing strategies. It contains over 130,000 wine reviews with attributes such as variety, region, price, rating (score), and reviewer comments. Participants can use this dataset to:

- Identify pricing patterns and how quality ratings influence wine pricing.
- Analyze regional differences in wine quality perception, which can inform geographic expansion strategies.
- Segment customers based on wine preferences and willingness to pay, supporting value-based pricing decisions.
- Explore trends in premium wine ratings to assess potential demand for technology-driven precision harvesting.

This data set provides a data-driven foundation for making informed strategic decisions in revenue growth planning.

Link:

https://www.kaggle.com/datasets/zynicide/wine-reviews

High-level financials

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Category	Description	2019	2020	2021	2022	2023	2024	2025 F
Revenue	**Revenue generated from product sales**							
Units Sold	Number of units sold	0	2	10	35	60	70	85
Price per Unit	Price per unit	$ -	$ 100.000,00	$ 100.000,00	$ 150.000,00	$ 150.000,00	$ 150.000,00	$ 150.000,00
	Units Sold x Price per Unit	$ -	$ 200.000,00	$ 1.000.000,00	$5.250.000,00	$9.000.000,00	$10.500.000,00	$12.750.000,00
Costs (Fixed)	**Fixed costs associated with operations**							
Overhead/Corporate (Rent, IT, Admin)	Expenses related to facilities and admin functions	$ 30.000,00	$ 60.000,00	$ 60.000,00	$ 90.000,00	$ 120.000,00	$ 120.000,00	$ 120.000,00
Headcount (FTE)	Number of employees	5	10	10	12	40	50	50
Average Salary	Average annual salary per employee	$ 80.000,00	$ 90.000,00	$ 90.000,00	$ 90.000,00	$ 90.000,00	$ 90.000,00	$ 90.000,00
R&D Expenses	Research and Development costs	$ 750.000,00	$ 750.000,00	$ 750.000,00	$ 750.000,00	$ 750.000,00	$ 750.000,00	$ 750.000,00
Total Fixed Costs	Sum of all fixed costs	$ 1.180.000,00	$ 1.710.000,00	$ 1.710.000,00	$1.920.000,00	$4.470.000,00	$ 5.370.000,00	$ 5.370.000,00
Costs (Variable)	**Variable costs associated with production and sales**							
Production Cost per Unit	Cost of manufacturing/assembly per unit	$ 75.000,00	$ 75.000,00	$ 50.000,00	$ 40.000,00	$ 30.000,00	$ 25.000,00	$ 25.000,00
Sales & Marketing (CAC)	Customer Acquisition Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Variable Costs	Sum of all variable costs	$ -	$ 150.000,00	$ 500.000,00	$1.400.000,00	$1.800.000,00	$ 1.750.000,00	$ 2.125.000,00
Total Costs	**Sum of Fixed and Variable Costs**	**$ 1.180.000,00**	**$ 1.860.000,00**	**$ 2.210.000,00**	**$3.320.000,00**	**$6.270.000,00**	**$ 7.120.000,00**	**$ 7.495.000,00**
Profit		**$-1.180.000,00**	**$-1.660.000,00**	**$-1.210.000,00**	**$1.930.000,00**	**$2.730.000,00**	**$ 3.380.000,00**	**$ 5.255.000,00**
Profit margin		-	**-830%**	**-121%**	**37%**	**30%**	**32%**	**41%**

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