
FIRST PART

Dear participant,

This study aims to verify the Valuation analysis process of a Startup. During the execution of this study, you will be presented with the History and Description of the Startup, its Past Financial and Operating Results, its Expected Future Operating Results from the view of its Founders, its Environmental, Social and Governance (ESG) Indicators and other necessary information to do a simplified Financial Valuation for this kind of company considering the next 05 (five) years.

Please read carefully the information that will be presented and answer the questions that are at the end of the form. Remember that there is no right or wrong answer in this survey, leaving it up to you to establish the values for each of the requested fields. Responses are anonymous and will be deleted after the analysis, ensuring appropriate data treatment as required by academic ethics.

It should be noted that during the survey it will be necessary to perform some calculations. Therefore, it is recommended that you have your preferred calculation tool on hand. Participation is individual and external research is allowed during the survey.

However, before you start with this research, it is necessary to answer the following questions.

Do you voluntarily agree to participate in this research?

() Yes () No

If yes, what is your Prolific ID?

SECOND PART

The Startup “AgroTech”

Annually, between 15% and 20% of all soybean produced in Brazil is lost due to attack by fungi, bacteria and other diseases that can affect the crop. Some contaminations can result in losses of up to 100%. In financial terms, after contamination, it is estimated that losses due to incorrect or late treatment of contaminated plants can cost 0.6% of the crop's revenue per day, and can reduce, on average, up to 13.9% of the gross margin of the producers. Thinking about this problem, the “AgroTech”, a Startup focused on the agribusiness sector, has developed a platform to help monitor, control and treat diseases in soybean plantations in Brazil.

Through the “AgroTech” platform, the producer presents the type of soybean he/she is producing and feeds the system with historical information related to the biochemical products he/she has already used in the plantation. After pairing this information with the characteristics of the region (e.g. climate, soil quality, water, air, relief, etc.), the system develops a report with historical information and presents a real-time interface with the current situation of the plantation. The “AgroTech” platform also informs what should be the future actions that the producer must carry out in terms of product use, quantity, application time and maintenance to avoid possible future contagion of the crop. In addition, it is also possible to synchronize information with other control and monitoring systems, issuing a series of alerts to the producer in case of contagion, and with suggestions for solving the problem in the shortest possible time. The cost of contracting the platform is annual (It is possible to pay in two installments) and varies according to the number of hectares of land covered by it and the price of a bag of soybeans in the previous year.

The idea of the “AgroTech” arose from the research of Anna, a PhD in biotechnology, who has been studying for over fifteen years the exogenous elements that affect the contamination of plantations in Brazil. After presenting her database to Peter (Administrator) and John (Programmer), it was possible to assemble the Startup business plan and build the platform that is expanded annually. In all, there are 35 variables used to ensure the greatest possible precision in the treatment parameters,

helping the producer to make the best decisions in controlling pests and contaminations.

The “AgroTech” started its operational in 2018 and, after a year of market research and improvement of its platform, it was officially launched. The period from 2019 to 2021 was marked by a series of uncertainties regarding the viability of the product especially due to the difficulties arising from the covid-19 pandemic. However, in 2022, it was possible to reach the operational break-even point, when the Startup's net profit was, for the first time, positive. In early 2022, due to the demand of some stakeholders, the “AgroTech” also started to publish a report with its main performance indicators of its environmental, social and governance (ESG) actions.

For the founders, the “AgroTech” has enormous potential for expansion, since the Brazilian soybean market corresponds to 42% of all global soybean production and it is responsible for 51% of global trade in this grain segment. In the year 2022, Brazil became the world's main competitor for soybeans with an average productivity of 3,508kg per hectare, corresponding to approximately 58.5 bags per hectare. Another factor that benefits the “AgroTech” is the exponential increase in the cost of a soybean bag in recent years, helping to grow its revenues.

Now, considering the favorable moment, the “AgroTech” is seeking new resources to enter into an accelerated expansion phase and needs your help to determine its Valuation to negotiate a possible funding with new investors. To help you in this analysis, the “AgroTech” has provided:

- (a) a spreadsheet with the step-by-step calculation of the platform subscription price per covered hectare;
- (b) a summary of its financial and operational results for the past periods from 2019 to 2022;
- (c) a guidance with the founders' expectations of future operating results after the new financial investment for the period from 2023 to 2025;
- (d) a summary of the main results of its ESG practices;
- (e) a spreadsheet with the trading price multiples of similar industry Startups and similar industry Companies on the Stock Exchange Market; and
- (f) a spreadsheet with the rates necessary to calculate its cost of capital.

Definition of annual platform price per hectare covered – AgroTech				
	Price for 2019	Price for 2020	Price for 2021	Price for 2022
Price definition day	03 dec 2018	02 dec 2019	01 dec 2020	01 dec 2021
Closing of the Soybean Bag Price on the defined date (60kg)	\$ 77.84	\$ 84.44	\$ 158.70	\$ 162.14
Average annual productivity of Soybean Bags per hectare in Brazil	56.50	53.08	54.58	57.98
Average annual revenue of Soybean Bag per Hectare in Brazil	\$ 4,397.96	\$ 4,482.36	\$ 8,662.38	\$ 9,401.42
Producer's annual average Net Margin per Soybean Bag in Brazil	34.50%	34.50%	34.50%	34.50%
Average annual profit of the producer per Bag of Soybean per Hectare in Brazil	\$ 1,517.30	\$ 1,546.41	\$ 2,988.52	\$ 3,243.49
Average percentage of collection by "AgroTech" on Customer Profit	5.0%	5.0%	5.0%	5.0%
Annual price of the "AgroTech" Platform per hectare covered	\$ 75.86	\$ 77.32	\$ 149.43	\$ 162.17

Financial Result – AgroTech				
YEAR	2019	2020	2021	2022
Number of Hectares Covered	1149	2371	3683	6073
Annual Subscription Price per Hectare	\$ 75.86	\$ 77.32	\$ 149.43	\$ 162.17
Revenue (=)	\$ 87,163.14	\$ 183,325.72	\$ 550,350.69	\$ 984,858.41
SaaS Creation, Maintenance and Expansion Costs (-)	\$ 189,543.00	\$ 133,542.00	\$ 169,616.00	\$ 193,885.00
Employee Expenses (-)	\$ 68,512.00	\$ 137,025.00	\$ 301,455.00	\$ 493,290.00
Other Expenses (-)	\$ 14,018.00	\$ 23,143.00	\$ 32,554.00	\$ 43,548.00
EBITDA (=)	-\$ 184,909.86	-\$ 110,384.28	\$ 46,725.69	\$ 254,135.41
Brazilian Tax Rate for the SaaS Sector on Revenue (-)	6.00%	6.09%	10.29%	12.38%
Net profit (=)	-\$ 190,139.65	-\$ 121,548.82	-\$ 9,905.40	\$ 132,209.94

Past Operating Performance – AgroTech				
YEAR	2019	2020	2021	2022
Number of Customer	25	44	60	83
Average Hectares per Customer	45.96	53.89	61.38	73.17
Average Revenue per Customer	\$ 3,486.53	\$ 4,166.49	\$ 9,172.51	\$ 11,865.76
Average Lifetime Length of the Customer in years	1.00	2.00	2.50	2.75
Lifetime Value (LTV)	\$ 3,486.53	\$ 8,332.99	\$ 22,931.28	\$ 32,630.85
Customer Acquisition Cost (CAC)	\$ 3,447.30	\$ 2,690.09	\$ 3,620.08	\$ 3,963.49
LTV over CAC ratio	1.01	3.10	6.33	8.23
Churn Rate	8.00%	6.82%	5.00%	6.02%
Revenue growth year over year	-	110.31%	200.19%	78.96%
Number of employees	2	4	8	14
Revenue per employee	\$ 43,581.57	\$ 45,831.43	\$ 68,793.84	\$ 70,347.03
Gross Margin	-117.46%	27.16%	69.18%	80.31%
EBITDA Margin	-212.14%	-60.21%	8.49%	25.80%
Share of the Top Customer in Revenue	7.75%	4.98%	4.72%	2.87%
Total amount of hectares of Soybean Planted in Brazil	35,874,000	36,949,700	39,531,200	41,492,000
Market Share in relation to the total amount of Soybean planted in Brazil	0.003%	0.006%	0.009%	0.015%

Founders' Expectation of Operating Results after new investment – AgroTech			
YEAR	2023	2024	2025
Number of Customer	132	243	430
Average Hectares per Customer	101.22	120.96	150.38
Average Revenue per Customer	\$ 15,192.62	\$ 18,156.12	\$ 22,572.70
Average Lifetime Length of the Customer in years	2.75	2.75	2.75
Lifetime Value (LTV)	\$ 41,779.71	\$ 49,929.33	\$ 62,074.93
Customer Acquisition Cost (CAC)	\$ 5,371.47	\$ 6,225.07	\$ 7,360.20
LTV over CAC ratio	7.78	8.02	8.43
Churn Rate	6.00%	5.50%	5.00%
Revenue growth year over year	103.62%	120.00%	120.00%
Number of employees	28	63	135
Revenue per employee	\$ 71,622.36	\$ 70,030.75	\$ 71,898.24
Gross Margin	83.45%	87.92%	90.81%
EBITDA Margin	27.45%	29.84%	33.89%
Share of the Top Customer in Revenue	1.80%	1.01%	0.62%
Total amount of hectares of Soybean Planted in Brazil	44,072,900	46,400,171	48,850,334
Market Share in relation to the total amount of Soybean planted in Brazil	0.030%	0.063%	0.132%

[RANDOM ESG INFORMATION GOES HERE]

M&A Deal Multiples of Comparable Industry Startups			
	Price/Revenue	Price/EBITDA	Price/Earnings
Minimum	0.85	4.98	6.87
Median	4.27	20.49	28.28
Maximum	12.43	63.76	87.98

Trading Multiples of Comparable Industry Companies on the Stock Exchange Market			
	Price/Revenue	Price/EBITDA	Price/Earnings
Minimum	1.30	7.90	11.02
Median	6.20	31.10	43.39
Maximum	15.70	85.50	119.29

Information for Calculating Cost of Equity (Using US Data)				
PERIOD	Geometric Average Historical Return			
	1928-2022	1970-2022	2013-2022	2023
Unlevered Sectorial Beta - Agriculture	-	-	-	0.91
Unlevered Sector Beta - Software System	-	-	-	1.37
Risk Free Rate (US T.Bonds)	4.57%	6.32%	0.11%	-
Equity Risk Premium (S&P 500 - US T.Bonds)	5.06%	4.03%	12.32%	-
Brazil Risk Rate	-	-	-	4.57%

Complementary information: if you choose to carry out a Discounted Cash Flow (DCF) model for this survey, the Capex and the Depreciation and Amortization should be considered zero in all periods, according to the projections made for the Agribusiness Startups sector with a SaaS business model. Therefore, for this specific research, the Free Cash Flow (FCF) will be exactly equal to the EBITDA for the correspondent period.

THIRD PART

ANSWERS

Considering all the elements presented in this survey, you are asked to answer the following questions. As previously mentioned, it is emphasized that there is no right or wrong answer, leaving it up to you to establish the values for each of the requested fields.

[QUESTIONS GOES HERE]

QUESTIONS

Group	Variable	Variable Code (Excel)	Questions	Measurement Scale	
Treatment	Innovation potential	inov	How would you rate the innovation potential of the Startup AgroTech platform?	0 to 100	Terrible (0) - Neutral (50) - Excellent (100)
	Founders' Technical Quality	found	How would you rate the technical quality of the Founders of the Startup AgroTech?	0 to 100	Terrible (0) - Neutral (50) - Excellent (100)
	Financial Results	fin	How would you rate the evolution of past financial performance (2019 to 2022) of the Startup AgroTech?	0 to 100	Terrible (0) - Neutral (50) - Excellent (100)
	Operational Results	oper	How would you rate the evolution of past operating performance (2019 to 2022) of the Startup AgroTech?	0 to 100	Terrible (0) - Neutral (50) - Excellent (100)
	ESG Results	esg	How would you rate the past Environmental, Social and Governance (ESG) performance (2022) of the Startup AgroTech?	0 to 100	Terrible (0) - Neutral (50) - Excellent (100)
Reputation	Product Indication	rep_ind	How likely are you to indicate Startup AgroTech's service to someone in the agribusiness sector?	0 to 100	Never (0) - Sometimes (50) - Always (100)
	Internal Reputation	rep_int	If you work at Startup AgroTech, how comfortable would you feel in disclosing its actions and activities to your friends or family?	0 to 100	Very uncomfortable (0) - Neutral (50) - Very comfortable (100)
	External Reputation	rep_ext	If the information presented to you was released in the specialized media (e.g. Wall Street Journal) how do you think people would react about Startup AgroTech?	0 to 100	Very bad (0) - Neutral (50) - Very well (100)
Growth	Guidance Confidence	cres_guid	In your view, what is the probability that Startup AgroTech will be able to achieve the operating results presented in the Founders' Guidance for the next 03 (three) years?	0 to 100	Very unlikely (0) - Neutral (50) - Very likely (100)
	CAGR Growth	cres_cagr	How much do you think Startup AgroTech's average revenue growth (%) will be per year over the next 05 (five) years?	Open	-
	Talent Acquisition and Retention	cres_tale	In your view, how likely Startup AgroTech will be able to attract and retain new qualified and talented employees on its team?	0 to 100	Very unlikely (0) - Neutral (50) - Very likely (100)
Risk	Investor Confidence	risc_inv	If you had to invest your life savings into Startup AgroTech, how confident would you feel about your investment?	0 to 100	Very unconfident (0) - Neutral (50) - Very confident (100)

Group	Variable	Variable Code (Excel)	Questions	Measurement Scale	
Valuation	Valuation Method	valu_meth	Considering the next 05 (five) years, which Valuation method do you intend to use to calculate the market value of Startup AgroTech?	Open	-
	Valuation	valuation	What is the market value that you calculated for Startup AgroTech for the next 05 (five) years?	Open	-
Control	Gender	male	What is your gender?	Multiple choice	Male / Female
	Age	age	How old are you?	Open	-
	Education Level	edu	What is the highest level of education you have completed?	Multiple choice	High School / Bachelor / Academic Master or MBA / PhD
	Most of life in the USA	usa	In which country have you lived most of your life?	Open	-
	Investment in Startup	inv_start	Have you ever made any directly kind of investment in Startups?	Multiple choice	Yes / No
	Investment Activity	inv_act	Which of the following categories best describes your investment activities?	Multiple choice	Angel Investor / Venture Capital / Private Equity / Individual Investor or Crowdfunder / Not Currently Investing
	Investment Experience	inv_exp	What is your investment experience?	Multiple choice	Less than 5 years / Between 5 and 10 years / More than 10 years / Never Invested Alone

ESG RANDOM INFORMATION

As presented in the text of this research, each of the participants received one of the ESG treatments randomly or the control information in the form of a table with a summary of the main ESG actions adopted by the Startup.

Below you can check each piece of information, with the first table corresponding to the control group (neutral ESG), the second to the positive treatment group (positive ESG) and the third to the negative treatment group (negative ESG).

ESG Results - AgroTech (2022)					
Pillar	Topic	Measurement	Indicator	Industry Average	AgroTech's Comments
Environmental	Emission of Pollutants	Compensation for Direct Pollutant Emissions	57%	55%	The AgroTech offset part of its emissions via carbon credits, being in line with the industry average.
		Compensation for Indirect Pollutant Emissions	43%	45%	
	Use of Natural Resources	Energy consumed by the server annually	7,437 kWh	7,446 kWh	The AgroTech installed solar panels for its own production of sustainable energy.
		Percent use of renewable energy sources	38.7%	40%	
	Environmental Impact	Ratio Volume of pesticide use per hectare	3.05 Kg/ha	3.2 Kg/ha	The AgroTech platform enabled an average reduction of 4.7% in the use of pesticides on covered farms.
Social	Workplace	Employee Turnover Rate	14.29%	14%	The rates are satisfactory considering the industry average.
		Absence Rate	6.10%	6.25%	
	Work Conditions	Personal Satisfaction Average	7.3 out of 10	7.4 out of 10	Due to the high turnover of employees in the industry, The AgroTech chose to implement a profit sharing program to retain talent based on the industry average.
		Profit Sharing Program	2.50%	2.50%	
	Diversity	Percentage of Women in the Team	35.71%	35%	The AgroTech is trying to implement a program to make the workplace more inclusive to attract greater diversity.
		Percentage of Non-White Ethnicities in the Team	21.43%	21%	
Corporate Governance	Board of Directors	Number of Members	3 members	3 members	The board is made up with the three founders.
	Data Security	Security Certification	ISO 27001	ISO 27001	The AgroTech has the ISO 27001 certificate that guarantees the quality of Information Security Management practices.
	Monitoring of Regulatory Risks	Meeting of the Monitoring Committee for Changes in the Legislation	Monthly	Monthly	The AgroTech implemented a risk monitoring committee with monthly meetings to monitor the legal discussions that affect its operation.

ESG Results - AgroTech (2022)					
Pillar	Topic	Measurement	Indicator	Industry Average	AgroTech's Comments
Environmental	Emission of Pollutants	Compensation for Direct Pollutant Emissions	100%	55%	The AgroTech offset all its emissions via carbon credits, and can be considered an emissions-neutral Startup.
		Compensation for Indirect Pollutant Emissions	100%	45%	
	Use of Natural Resources	Energy consumed by the server annually	6,119 kWh	7,446 kWh	The AgroTech transferred part of its server to the cloud, reducing energy consumption, and installed solar panels for its own production of sustainable energy.
		Percent use of renewable energy sources	65%	40%	
	Environmental Impact	Ratio Volume of pesticide use per hectare	2.85 Kg/ha	3.2 Kg/ha	The AgroTech platform enabled an average reduction of 11% in the use of pesticides on covered farms.
Social	Workplace	Employee Turnover Rate	7.14%	14%	Rates are satisfactory considering the industry average.
		Absence Rate	3.10%	6.25%	
	Work Conditions	Personal Satisfaction Average	9.1 out of 10	7.4 out of 10	Due to high employee turnover in the industry, The AgroTech chose to implement a profit sharing program to retain talent by paying twice the industry average. In addition, the company offers constant training.
		Profit Sharing Program	5.00%	2.50%	
	Diversity	Percentage of Women in the Team	50%	35%	The AgroTech made the workplace more inclusive and started to adopt a blind hiring process to attract greater diversity and avoid biased choices.
		Percentage of Non-White Ethnicities in the Team	35.71%	21%	
Corporate Governance	Board of Directors	Number of Members	3 members (+ 2 independent extras)	3 members	The board is made up of the three founders. However, there are two more formal positions open for the appointment of independent directors by new investors.
	Data Security	Security Certification	ISO 27001 ISO 27701	ISO 27001	In addition to having ISO 27001, which recognizes Information Security Management practices, The AgroTech also has ISO 27701, which guarantees the quality of Information Privacy Management.
	Monitoring of Regulatory Risks	Meeting of the Monitoring Committee for Changes in the Legislation	Weekly	Monthly	AgroTech implemented a risk monitoring committee with weekly meetings to monitor the legal discussions that affect its operation.

ESG Results - AgroTech (2022)					
Pillar	Topic	Measurement	Indicator	Industry Average	AgroTech's Comments
Environmental	Emission of Pollutants	Compensation for Direct Pollutant Emissions	0%	55%	The AgroTech does not have a compensation policy for its carbon emissions.
		Compensation for Indirect Pollutant Emissions	0%	45%	
	Use of Natural Resources	Energy consumed by the server annually	8,773 kWh	7,446 kWh	The AgroTech buys part of its energy from another company that owns solar panels and sells its remaining energy on the free energy market.
		Percent use of renewable energy sources	15%	40%	
	Environmental Impact	Ratio Volume of pesticide use per hectare	3.2 Kg/ha	3.2 Kg/ha	The AgroTech's platform has ensured that the amount of pesticides used by its customers is the same as the market average.
Social	Workplace	Employee Turnover Rate	21.43%	14%	Rates are not satisfactory considering the industry average.
		Absence Rate	9.40%	6.25%	
	Work Conditions	Personal Satisfaction Average	5.7 out of 10	7.4 out of 10	The AgroTech does not have a Profit Sharing Program among employees due to program costs.
		Profit Sharing Program	0.00%	2.50%	
	Diversity	Percentage of Women in the Team	14.29%	35%	The AgroTech believes that its workplace is inclusive, despite not having any specific program to encourage diversity.
		Percentage of Non-White Ethnicities in the Team	7.14%	21%	
Corporate Governance	Board of Directors	Number of Members	-	3 members	The AgroTech does not have a board of directors and is controlled by Anna (majority shareholder).
	Data Security	Security Certification	-	ISO 27001	Despite following the recommendations of the Data Protection Laws, The AgroTech does not have any guarantee certification on the quality of its data security system.
	Monitoring of Regulatory Risks	Meeting of the Monitoring Committee for Changes in the Legislation	Quarterly	Monthly	AgroTech implemented a risk monitoring group with quarterly meetings to monitor the legal discussions that impact its operation.