Valuation Report of Mavuno Technologies

As of 2022-01-01

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Table of Contents

Company summary
Mavuno Technologies

Schaperstrasse 32, 10719 Berlin, Germany

Germany

Industry: **Fishing & Farming**
Business Activity: **Agriculture Support Services**

AgTech startup with the mission to empower African smallholder farmers with satellite imagery, machine learning and organic crop protectants in order to significantly increase their harvest yields

https://mavuno.tech

Founders: **3**
Employees: **1**
Started in: **2021**
Incorporated: **Yes**
Year of incorporation: **2021**
Founders' committed capital: **$36000**

Opportunity

Business model: **B2C**
Scalable Product: **Yes**
Exit strategy: **Some exit opportunities**

Current Operations

Stage of development: **Startup stage**
Employees (excluding founders, interns and freelancers): **1**
Profitability: **Not breakeven yet**

Competitors

OneSoil | https://onesoil.io
Apollo Agricultu | https://www.apolloagriculture.com/
Xarvio | https://www.xarvio.com/global/en.html
FarmRise | https://climate.com/climate-farmrise/
FarmCommand | https://www.farmersedge.ca/farmcommand/

Latest operating performance

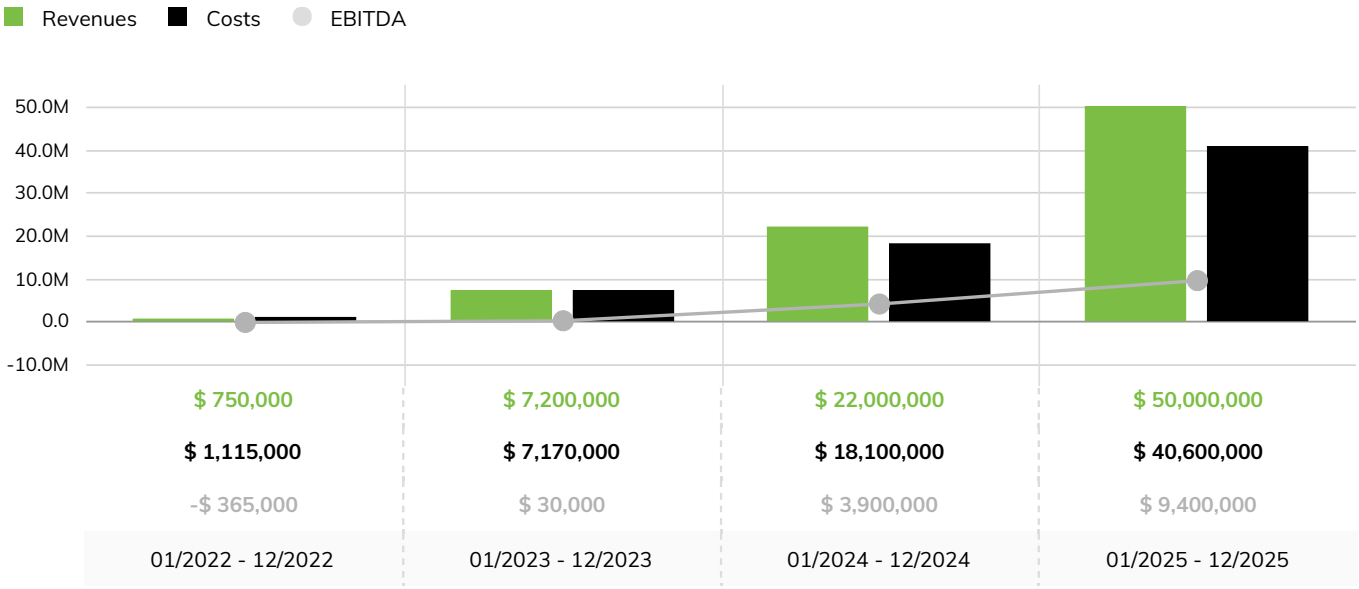
	01/2021 - 12/2021
Revenues	**40,000**
EBITDA	**-115,000**
Ebitda margin	-200 %
EBIT	**-115,000**
Ebit margin	-200 %
Cash in hand	**60,000**

All numbers in $

/// More information on the history, milestones, team, etc., (e.g. pitchdeck) can be requested by the company

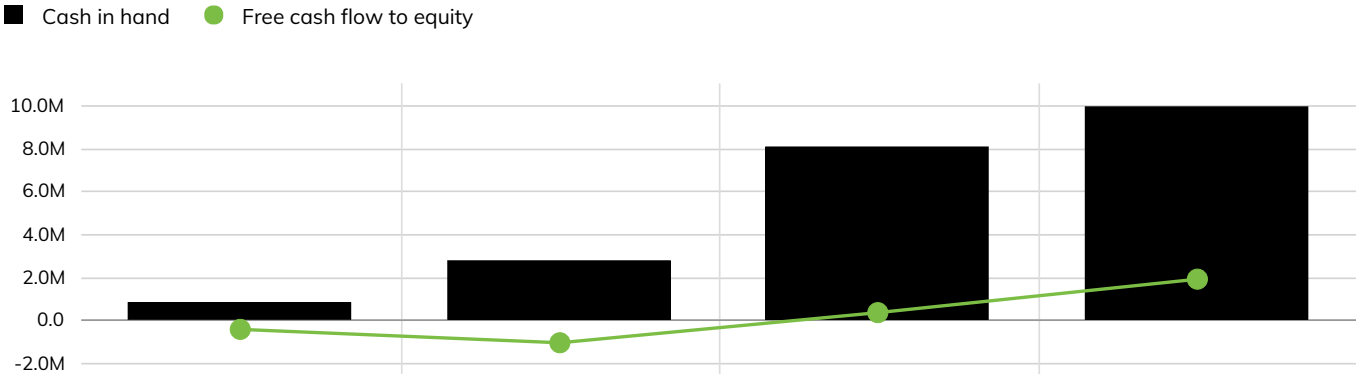
Forecasts summary

Future profitability



	01/2022 - 12/2022	01/2023 - 12/2023	01/2024 - 12/2024	01/2025 - 12/2025
Revenues	$ 750,000	$ 7,200,000	$ 22,000,000	$ 50,000,000
Costs	$ 1,115,000	$ 7,170,000	$ 18,100,000	$ 40,600,000
EBITDA	-$ 365,000	$ 30,000	$ 3,900,000	$ 9,400,000

Cash forecast



	01/2022 - 12/2022	01/2023 - 12/2023	01/2024 - 12/2024	01/2025 - 12/2025
Cash in hand	$ 828,800	$ 2,738,760	$ 8,079,872	$ 9,946,934
Free cash flow to equity	-$ 431,200	-$ 1,090,040	$ 341,112	$ 1,867,062

/// Full profit and loss and cash flow forecast at page 14.

Past funding rounds

Here is an overview of the past funding rounds and valuations of the company.

Date	Amount raised	% of Equity	Post-Money Valuation
09-15-2021	**$ 120,000**	**6.67%**	**$ 1,700,000**

Current ownership

Here is an overview of the current shareholders in the company. More information on type of shares, unassigned shares, and in general a detailed cap table can be requested to the company in question.

Valuation

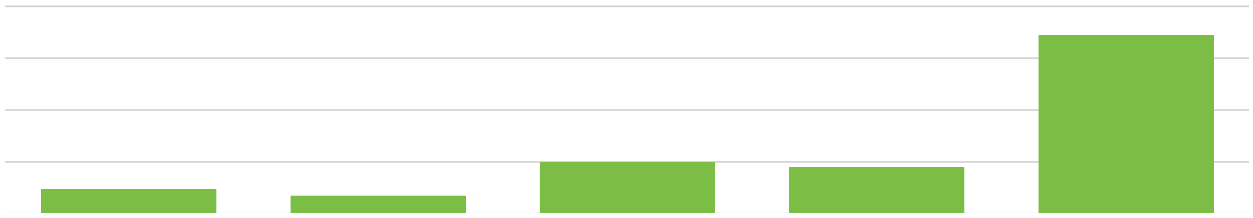
The pre-money valuation displayed below is the result of the weighted average of different methods. The use of several methods is a best practice in company valuation, as looking at the business from different perspectives results in a more comprehensive and reliable view.
These methods are compliant with IPEV (International Private Equity Valuation) Guidelines and each of them will be explained in more detail in the following pages of the report.
More information on the weights can be found in the Appendix.

Low Bound
$ 4,230,000

Pre-money valuation
$ 6,029,544

High Bound
$ 7,829,000

5 Valuation Methods



$ 4,511,996	$ 3,121,254	$ 9,766,017	$ 8,655,632	$ 34,118,691
Scorecard	Checklist	Venture Capital	DCF with LTG	DCF with Multiples

Method weights

Current funding round

Please find below the amount of capital currently needed and the consequent percentage of equity based on the valuation of previous page as a starting point for the negotiations.

Pre-money valuation

$ 6,029,544

Low Bound

$ 4,230,000

High Bound

$ 7,829,000

Capital needed

$ 600,000

9.05%

Post-money valuation

$ 6,629,544

Low Bound

$ 4,830,000

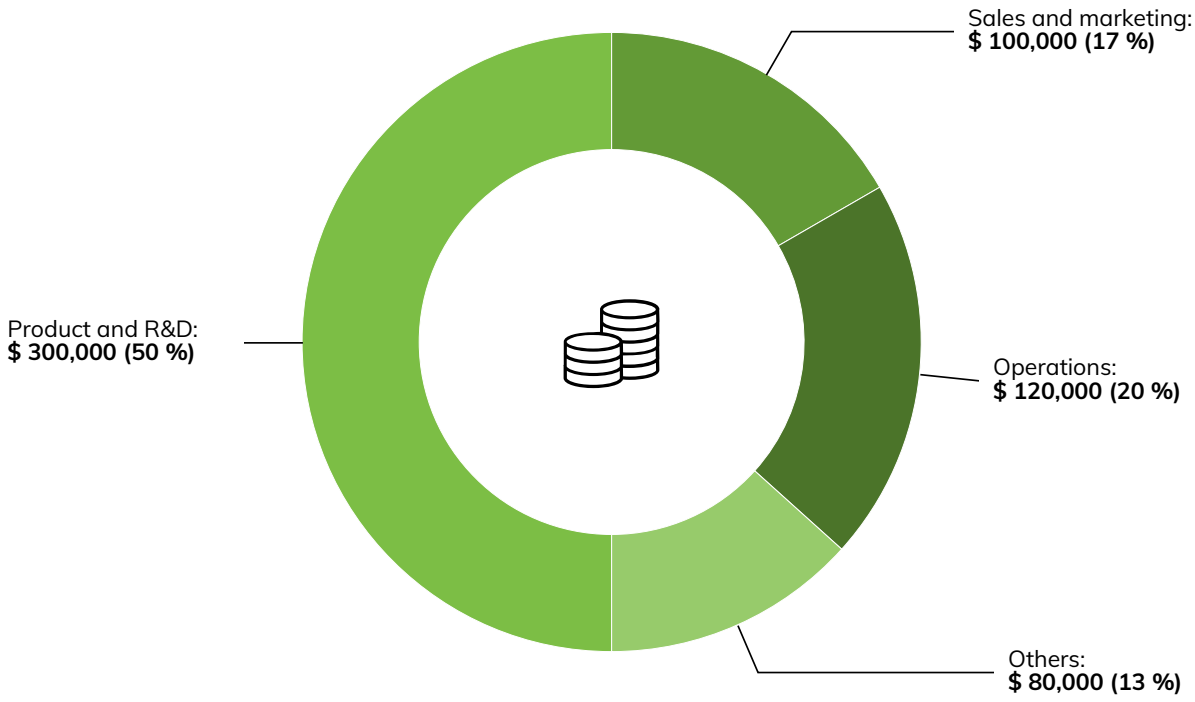
High Bound

$ 8,429,000

Starting from the post-money valuation of the company, the equity percentage that relates to the investment is calculated as investment/post-money valuation. Keeping the investment amount fixed, the lower the pre-money valuation, the higher the equity stake, and vice versa.

Use of funds

Here is a breakdown on how the company will use the capital raised.

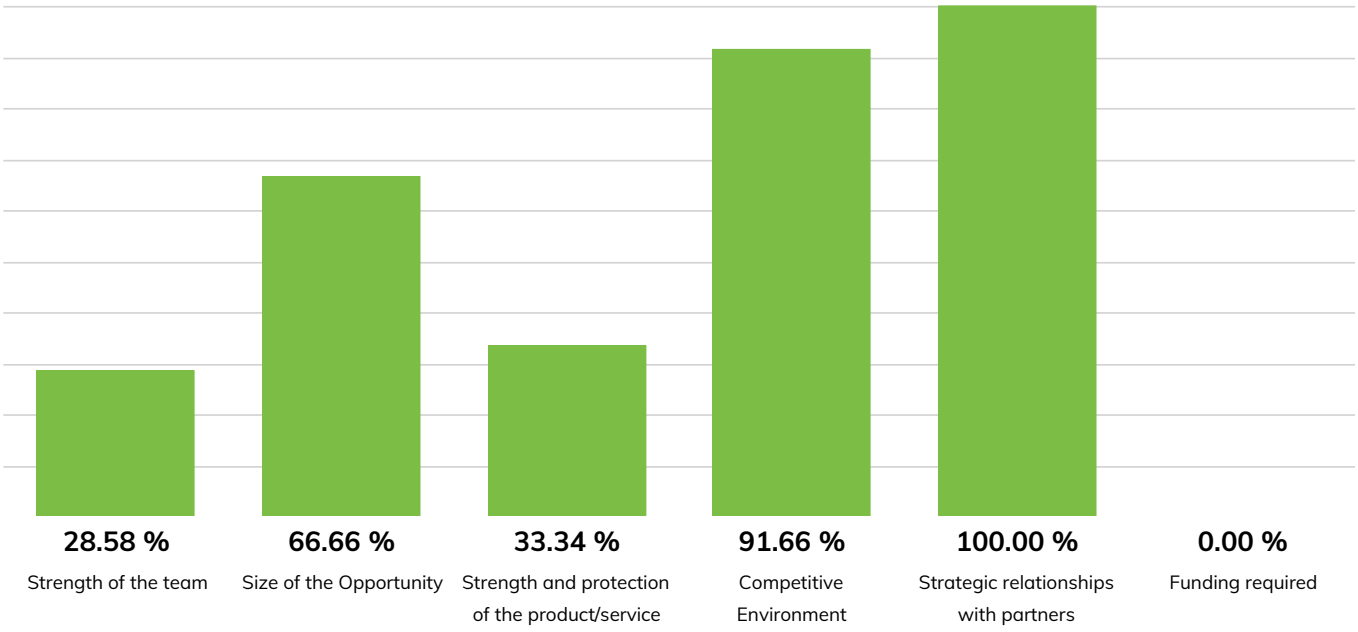


Qualitative methods

Scorecard Method: $ 4,511,996

This method was conceived by William H. Payne of Ohio TechAngels group and endorsed by the Ewing Marion Kauffman Foundation. The valuation of the startup depends on how different this is from the assumed average of a set of comparable companies from the same region.
Startups' qualitative traits are divided in 6 criteria, compared with the assumed traits of the average company, and given a score according to whether it over- or under-performs the assumed average company. These scores are multiplied by weights that represent the impact of the criteria on the valuation. The sum of these weighted scores multiplied by the average valuation leads to the company's pre-money valuation.

Normalized scores of the company for each criteria



Parameters

Average valuation (Germany): **$ 2,934,631**

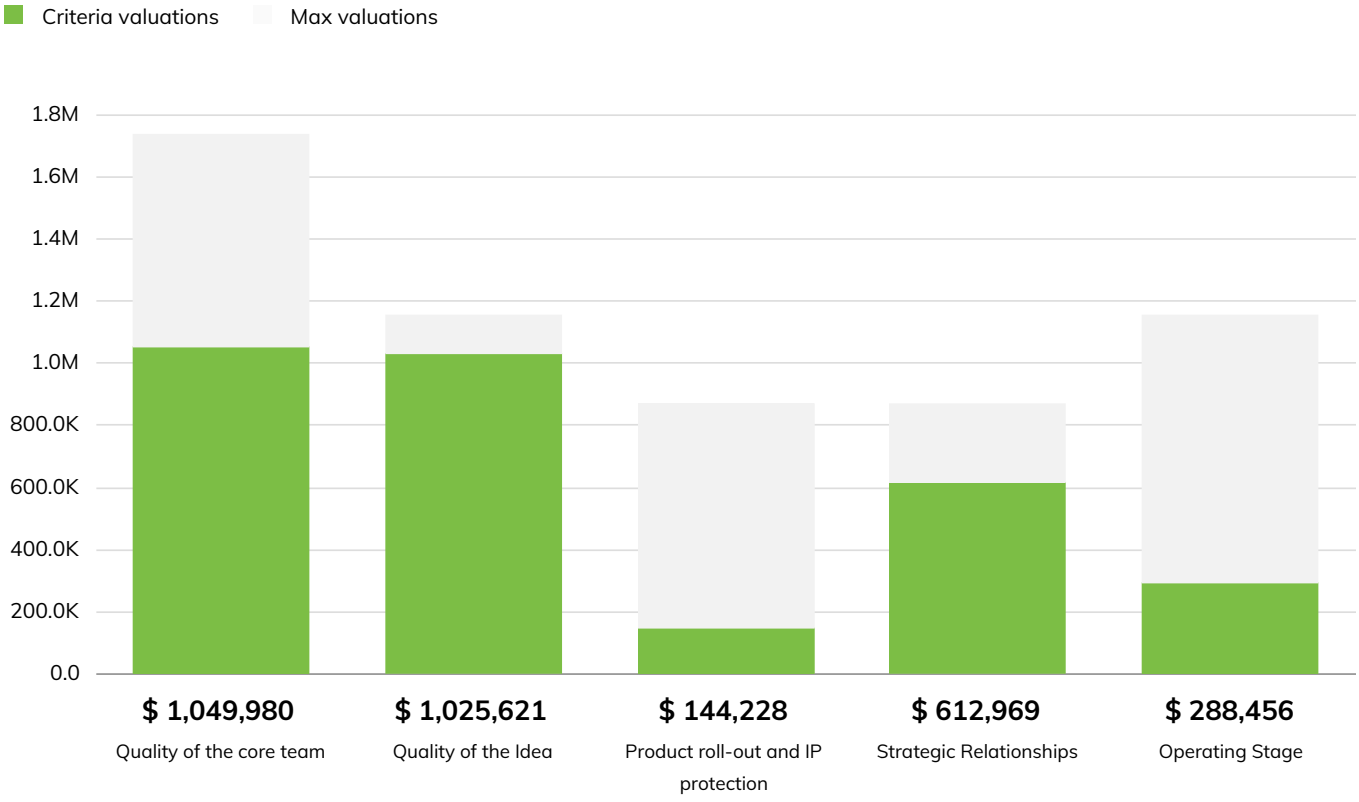
Weights of the criteria

Strength of the team: **30%**
Size of the Opportunity: **25%**
Strength and protection of the product/service: **15%**
Competitive Environment: **10%**
Strategic relationships with partners: **10%**
Funding required: **10%**

/// Please see appendix for data sources, defaults, and breakdown of the traits

Checklist Method: $ 3,121,254

The creator of the method is Dave Berkus, one of the most prominent Californian angel investors. The valuation of the startup consists of intangible building blocks that sum up to the assumed maximum pre-money valuation.
The maximum pre-money valuation is split in 5 criteria according to their weight. The startup obtains portions of these maximum criteria valuations according to how close its qualitative traits are to the most desirable ones. Their sum is the startup pre-money valuation.



Parameters

Maximum valuation (Germany): **$ 5,769,120**

Criteria maximum valuations

Quality of the core team: **$ 1,730,736 (30%)**
Quality of the Idea: **$ 1,153,824 (20%)**
Product roll-out and IP protection: **$ 865,368 (15%)**
Strategic Relationships: **$ 865,368 (15%)**
Operating Stage: **$ 1,153,824 (20%)**

/// Please see appendix for data sources, defaults, and breakdown of the traits

Qualitative traits summary

Below a summary of the traits at the basis of the scores for the two qualitative methods. Please see appendix for detailed breakdown of which trait is used in which method.

Team

Founders
Time commitment: **Full time**
Average age: **Between 25 and 34**
Founded other companies before: **Yes**

Core team skills and expertise
Working together for: **More than 5 years**
Years of experience in the industry: **18**
Business and managerial background: **Mid-level management experience**
Technical skills: **All technical skills inhouse**

Network

Board of advisors: **Yes**
Legal consultants: **Yes**
Current shareholders: **Friends and Family, Incubator / accelerator, Business angel**

Market

Total Addressable Market (TAM): **$ 100,000,000,000**
Annual growth rate of the market: **3.00 %**
Demand validated: **Yes**
Internationalization: **Local focus now, international expansion planned**

Product

Product roll-out: **Minimum Viable Product**
Feedback received: **All positive**
Loyalty to the product/service: **High retention**
Partners: **Contracts with key strategic partners signed and serving high volumes**

Competition

Level of competition: **Negligible competition**
Competitive products are: **On the same level**
Differentiation from current solutions: **Not comparable solutions**
International competition: **Not yet developed**

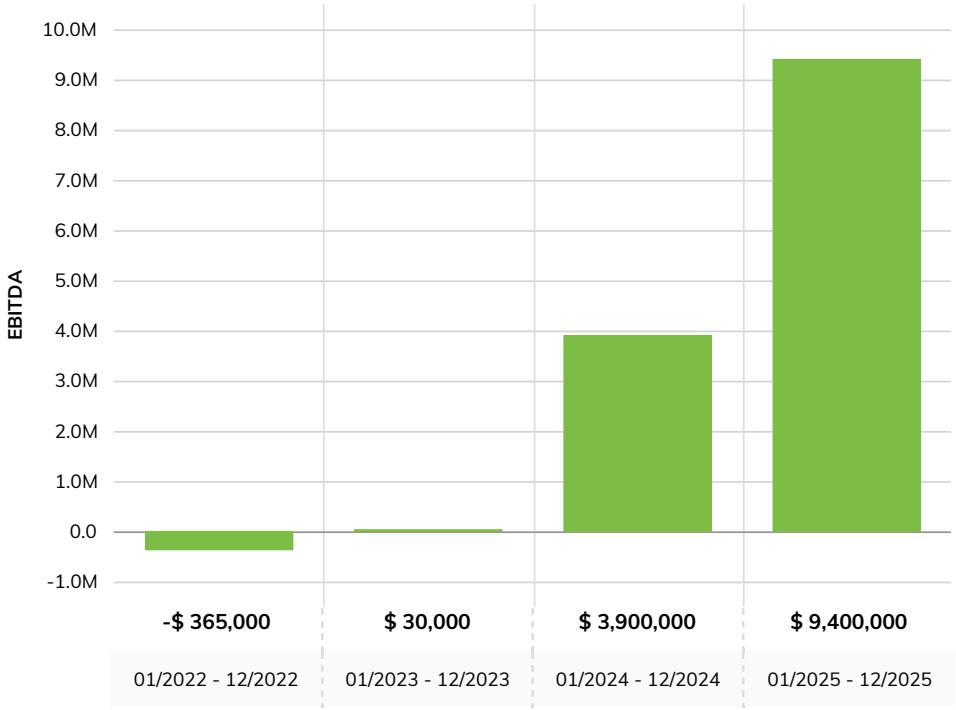
Protection

Barriers to entry of the market: **High**
Applicable IP: **Trademark and/or domain names**

VC Method

Premoney Valuation: $ 9,766,017

The VC (Venture Capital) method is one of most common approaches among financial practitioners in the private company market. The startup is given the valuation that will grant investors a predetermined return at the exit.
The potential exit value of the company is computed with an industry-based EBITDA multiple. The valuation is equal to this value discounted by a required ROI (Return On Investment). This depends on the startup's stage of development, higher for early stage riskier companies, lower for more mature ones. It is the minimum rate that will allow investors to have positive returns from portfolios where most companies fail and gains come from a selected few.



$ 9,400,000
Last Year EBITDA

×

14.11
EBITDA multiple

$ 132,593,220
Last Year Exit value

89.12 %
Annual Required ROI

$ 10,366,017
Post-money Valuation

$ 600,000
Capital needed

$ 9,766,017
Premoney Valuation

Parameters

Industry Multiple: **14.11**

Annual Required ROI: **89.12 %**

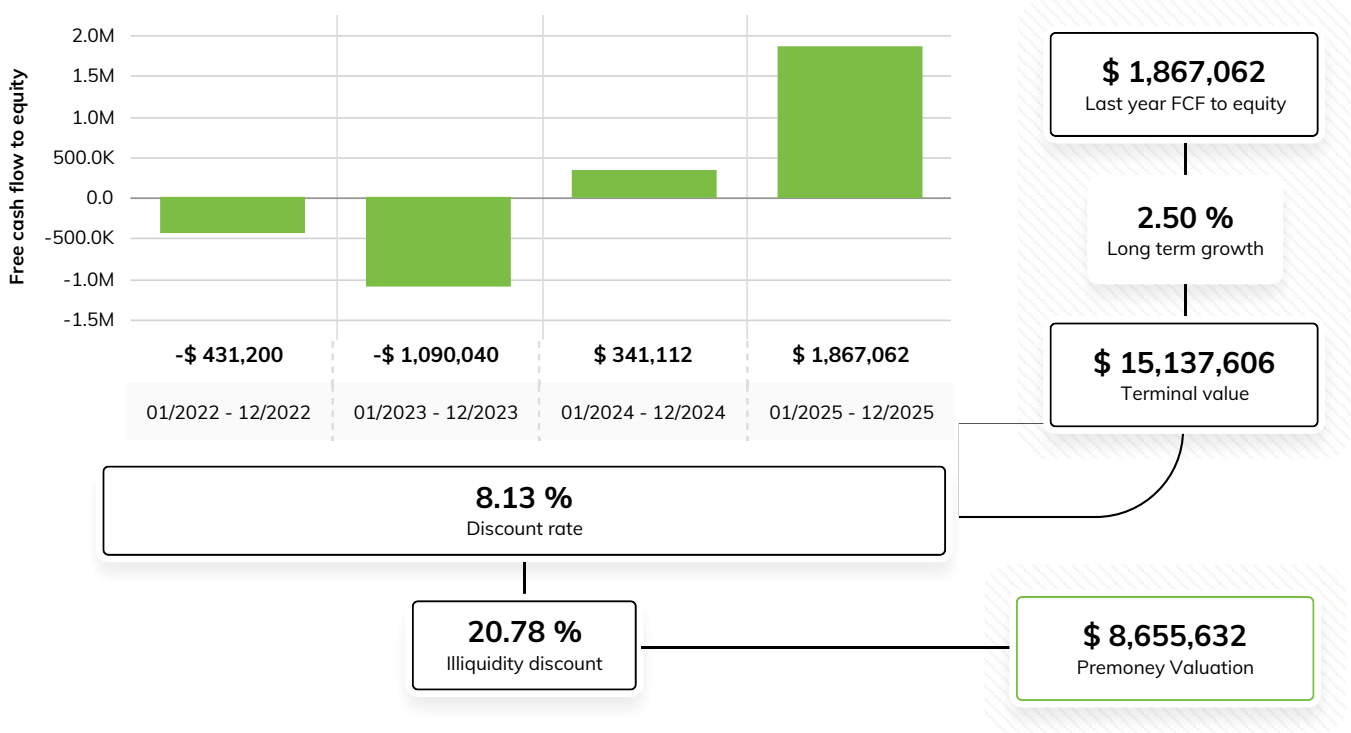
/// Please see appendix for data sources and defaults

DCF Methods

The DCF (Discounted Cash Flow) methods represent the most renown approach to company valuation, recommended by academics and a daily tool for financial analysts. The valuation is the present value of all the free cash flows to equity the startup is going to generate in the future, discounted by its risk.
These methods weight the projected free cash flow to equity by the probability the startup will survive. Then, the flows are discounted to present by a rate that represents risks related to industry, size, development stage and profitability. Lastly, an illiquidity discount is applied to the sum of the discounted cash flows to compute the valuation.
The value of cash flows beyond the projected ones is represented by the TV (Terminal Value) and the way it is calculated is the difference between the following two methods.

DCF with LTG: $ 8,655,632

The DCF with LTG (Long Term Growth) assumes the cash flows beyond the projected ones will grow forever at a constant rate based on the industry and computes the TV accordingly.



Parameters

Long term growth: **2.50 %**
Illiquidity discount: **20.78 %**

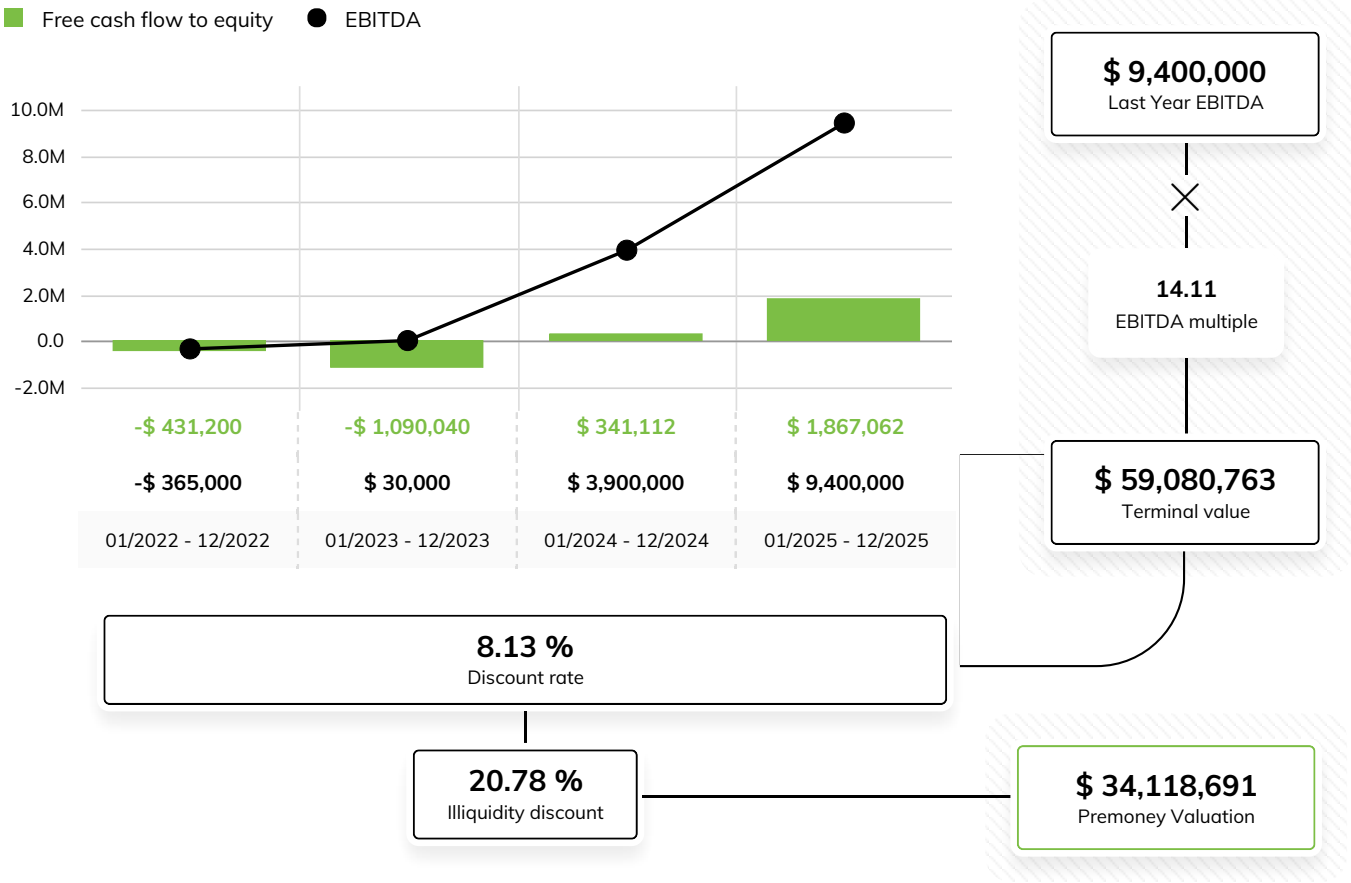
Discount rate
Risk free rate: **-0.20 %**
Beta: **1.67**
Market Risk Premium: **5.00 %**

Survival rates
Year 1: **77.43 %**
Year 2: **62.51 %**
Year 3: **50.67 %**
Year 4: **44.56 %**

/// Please see appendix for data sources and defaults

DCF with Multiples: $ 34,118,691

The DCF with Multiple assumes the TV (Terminal Value) is equal to the exit value of the company computed with an industry-based EBITDA multiple.



Parameters

EBITDA multiple: **14.11**

Illiquidity discount: **20.78** %

Discount rate

Risk free rate: **-0.20** %

Beta: **1.67**

Market Risk Premium: **5.00 %**

Survival rates

Year 1: **77.43 %**

Year 2: **62.51 %**

Year 3: **50.67 %**

Year 4: **44.56 %**

/// Please see appendix for data sources and defaults

Financial Projections

Profit & Loss

The profit & loss projections are displayed below. Data about revenues and operating costs are provided by the company. Depreciation and amortization, interest, and taxes are either provided by the company or estimated by Equidam. Please consult our methodology document for more details.

	01-2021 - 12-2021	01-2022 - 12-2022	01-2023 - 12-2023	01-2024 - 12-2024
Revenues	**40,000**	**750,000** +18X	**7,200,000** +9X	**22,000,000** +3X
Cost of Goods Sold	**94,000**	**700,000** +7X	**5,200,000** +7X	**12,200,000** +2X
Salaries	**35,000**	**340,000** +9X	**1,600,000** +4X	**4,700,000** +2X
Operating Expenses	**26,000**	**75,000** +2X	**370,000** +4X	**1,200,000** +3X
EBITDA	**-115,000**	**-365,000** -200%	**30,000** -	**3,900,000** >100X
Ebitda margin	-	-	-	-
D&A	**-**	**1,233**	**11,837** +9X	**36,170** +3X
EBIT	**-115,000**	**-366,233** -200%	**18,163** -	**3,863,830** >100X
Ebit margin	-	-	-	-
Interest	**-**	**-**	**-**	**-**
EBT	**-**	**-366,233**	**18,163** -	**3,863,830** >100X
Taxes	**-**	**-**	**-**	**1,054,728**
Nominal tax rate	-	-	-	-
Effective tax payable	**-**	**-109,869**	**5,448**	**1,159,149**
Deferred tax assets	**-**	**109,869**	**104,421**	**-**
Net profit	**-115,000**	**-366,233** -200%	**18,163** -	**2,809,102** >100X
Net profit margin	-	-	-	-

All numbers in $

Profit & Loss

	01-2025 - 12-2025	
Revenues	**50,000,000**	+2X
Cost of Goods Sold	**30,000,000**	+2X
Salaries	**8,600,000**	0%
Operating Expenses	**2,000,000**	0%
EBITDA	**9,400,000**	+2X
Ebitda margin		-
D&A	**82,204**	+2X
EBIT	**9,317,796**	+2X
Ebit margin		-
Interest	-	
EBT	**9,317,796**	+2X
Taxes	**2,795,338**	+2X
Nominal tax rate		-
Effective tax payable	**2,795,338**	
Deferred tax assets		-
Net profit	**6,522,458**	+2X
Net profit margin		-

All numbers in $

Cash Flow

The cash flow projections are displayed below. Capital expenditure, debt at the end of the year, and equity fundraising are provided by the company. Account payables, account receivables, inventory and D&A are either provided by the company or estimated by Equidam based on the average percentage of revenues for public companies in the company's industry.

	01/2021 - 12/2021	01/2022 - 12/2022		01/2023 - 12/2023		01/2024 - 12/2024	
Net profit	**-115,000**	**-366,233**	-200%	**18,163**	-	**2,809,102**	>100%
Change in Working Capital	**-**	**66,200**		**1,120,040**		**2,504,160**	
Working capital	**-**	**98,200**		**1,218,240**	+12X	**3,722,400**	+3X
Account Payables	**8,000**	**80,475**		**772,560**		**2,360,600**	
Account Receivables	**28,000**	**78,675**		**755,280**		**2,307,800**	
Inventory	**12,000**	**100,000**		**1,235,520**		**3,775,200**	
D&A	**-**	**1,233**		**11,837**	+9X	**36,170**	+3X
Capital expenditures	**-**	**-**		**-**		**-**	
Change in outstanding debt	**-**	**-**		**-**		**-**	
Debt at the end of the year	**-**	**-**		**-**		**-**	
Free cash flow to equity	**-**	**-431,200**		**-1,090,040**	-100%	**341,112**	-
Equity fundraising	**-**	**600,000**		**3,000,000**	+5X	**5,000,000**	0%
Free cash flow	**-**	**168,800**		**1,909,960**	+11X	**5,341,112**	+2X
Beginning of the year cash	**-**	**660,000**		**828,800**	0%	**2,738,760**	+3X
End of the year cash	**-**	**828,800**		**2,738,760**		**8,079,872**	

All numbers in $

Cash Flow

	01/2025 - 12/2025	
Net profit	**6,522,458**	+2X
Change in Working Capital	**4,737,600**	
Working capital	**8,460,000**	+2X
Account Payables	**5,365,000**	
Account Receivables	**5,245,000**	
Inventory	**8,580,000**	
D&A	**82,204**	+2X
Capital expenditures	**-**	
Change in outstanding debt	**-**	
Debt at the end of the year	**-**	
Free cash flow to equity	**1,867,062**	+5X
Equity fundraising	**-**	
Free cash flow	**1,867,062**	0%
Beginning of the year cash	**8,079,872**	+2X
End of the year cash	**9,946,934**	

All numbers in $

Conclusion

Legal Notes

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Appendix
Weights of the methods

The default weight of each method is determined by Equidam based on the stage of development, and they are shown below. They can be manually adjusted by the company.

Default weights of the 5 methods

Stage of development	Checklist Method	Scorecard Method	VC Method	DCF with LTG	DCF with Multiples
Idea stage	38%	38%	16%	4%	4%
Development stage	30%	30%	16%	12%	12%
Startup stage	15%	15%	16%	27%	27%
Expansion stage	6%	6%	16%	36%	36%

Mavuno Technologies stage of development: **Startup stage**

These are determined according to the following principles:

- Qualitative information is more important in early stage companies, where performance uncertainty is extremely high, so qualitative methods are weighted in more
- The investors' view is equally important across all stages, so the weight of the VC method does not change
- Quantitative information is more reliable in later stages, when a company already has a proven financial track record. Therefore, it is possible to use the DCF methods more extensively as projected results get founded in past performance

Qualitative methods

Default average and maximum valuations data sources

Dataset: Pre-money market valuations from transactions in the last 30 months of company in all industries, all countries, and at seed funding stage

Datasource: Crunchbase

Usage: Computation of average and maximum (net of outliers) pre-money valuations in given geographic areas for the qualitative methods (Scorecard and Checklist respectively)

Update: Biannual

Average valuation (Scorecard Method) in Germany: **$ 2,934,631**

Maximum valuation (Checklist Method) in Germany: **$ 5,769,120**

Scorecard Method

Default weights of the criteria and breakdown in their traits

Strength of the team — **30%**

Time commitment of the founders
Number of employees
Team spirit and comradeship
Years of industry experience of the core team
Business and managerial background of the core team

Size of the Opportunity — **25%**

Estimated revenues in the third year according to the stage of the development
Estimated size of the market in three years
Geographical scope of the business

Competitive Environment — **10%**

Stage of the product/service roll-out
Degree of loyalty of customers
Type of IP protection applicable
IP protection in place (if any)

Strength and protection of the product/service — **15%**

Level of competition in the market
Quality of competitive products/services
Competitive advantage over other products/services
Barriers to entry of the market
Threat of international competition

Strategic relationships with partners — **10%**

Strength of the relationships with key strategic partners

Funding required — **10%**

Capital required according to the stage of development

Checklist Method

Default weights of the criteria and breakdown in their traits

Quality of the core team analyzes: **30%**

Average age of the founders
Presence in the team of serial, successful entrepreneurs
Time commitment of the founders
Team spirit and comradeship
Years of industry experience of the core team
Business and managerial background of the core team
Technical skills of the core team

Quality of the idea analyzes: **20%**

Validation of the demand for the product/service
Feedback received by early adopters/industry experts
Level of competition in the market
Competitive advantage over other products/services
Geographical scope of the business
Threat of international competition
Degree of loyalty of customers

Product roll-out and IP protection analyzes: **15%**

Stage of the product/service roll-out
Type of IP protection applicable
IP protection in place (if any)

Strategic relationships analyzes: **15%**

Presence of an advisory board and number of advisors
Presence and type of current shareholders
Relationship with legal counselors
Strength of the relationships with key strategic partners

Operating stage **20%**

Stage of development
Current profitability

VC method

Below the sources of the valuation parameters used in the VC Method: EBITDA Multiple and Annual Required ROI, and their default values provided by Equidam

EBITDA multiple

Description: Enterprise value on EBITDA multiples computed over a dataset of global, publicly listed firms organized by industry

Datasource: Prof. A. Damodaran, NYU Stern School of Busines

Update: Annual

Notes: We favor the use of EBITDA multiple, as we believe revenue multiples fail to capture the ability of startups to generate cash flow, i.e. the ultimate determinant of value.

Mavuno Technologies industry: **Agriculture Support Services**

Agriculture Support Services EBITDA multiple: **14.11**

Annual Required ROI

The default annual required ROI rates are determined by Equidam based on the returns investors require for companies at different stage of development, and are shown below. They can be manually adjusted by the company.

Mavuno Technologies stage of development: **Startup stage**

DCF Methods

Below the sources of the valuation parameters used in the DCF Methods: Discount Rate, Survival Rates and Illiquidity Discounts, and their default values provided by Equidam.

Discount rate

Risk Free Rate

Description: 10Y government rates

Datasource: Trading Economics (tradingeconomics.com), various public databases

Update: Bi-annual (but more frequent if macroeconomic conditions are more volatile)

Notes: For the Eurozone we apply the German 10Y Bond rate

- Mavuno Technologies country: **Germany**
- Germany risk free rate: **-0.20%**

Industry betas

Description: Industry beta computed over industry specific portfolios of global, public listed companies (same as in EBITDA multiple)

Datasource: Prof. A. Damodaran, NYU Stern School of Business

Update: Annual

- Mavuno Technologies industry: **Agriculture Support Services**
- Agriculture Support Services default beta: **1.67**

Market Risk Premium

Description: Country based total equity risk premium as implied in the previous 12 trailing months.

Datasource: Prof. A. Damodaran, NYU Stern School of Business

Update: Biannual

- Mavuno Technologies country: **Germany**
- Germany default market risk premium: **5.00%**

Survival Rate

Dataset: Country-level survival probabilities of the latest cohort of companies with three years of data available.

Datasource: European Office of Statistics (http://ec.europa.eu/eurostat), U.S. Bureau of Labor Statistics (https://www.bls.gov/), specific academic research and public offices of statistics for different countries.

Update: Annual

Mavuno Technologies year of incorporation: **2021**

Default survival rate Year 1: **77.43%**

Default survival rate Year 2: **62.51%**

Default survival rate Year 3: **50.67%**

Default survival rate Year 4: **44.56%**

Default survival rate Year 5: **39.19%**

Default survival rate Year 6: **34.81%**

Default survival rate Year 7: **31.10%**

Default survival rate Year 8: **27.89%**

Default survival rate Year 9: **25.05%**

Default survival rate Year 10: **22.52%**

Illiquidity discount

The default illiquidity discount is assigned based on current profitability and projected revenues, according to the approach suggested by William L. Silber.

Mavuno Technologies illiquidity discount: **20.78%**

DCF with LTG

Long term growth

Dataset: Global, publicly listed companies organized by industry (same as in EBITDA multiple)

Datasource: Prof. A. Damodaran, NYU Stern School of Business

Update: Annual

Notes: The value is winsorized over a 0% - 2.5% range. We do not want the long term growth to be above world GDP growth expectations, as it would mean the company is going to overgrow world economy at some point in time

Mavuno Technologies industry: **Agriculture Support Services**

Agriculture Support Services default long term growth: **2.50**

DCF with Multiples

EBITDA multiple

Dataset: Global, publicly listed companies organized by industry

Datasource: Prof. A. Damodaran, NYU Stern School of Business

Update: Annual

Notes: We favor the use of EBITDA multiple, as we believe revenue multiples fail to capture the ability of startups to generate cash flow, the ultimate determinant of value.

Mavuno Technologies industry: **Agriculture Support Services**

Agriculture Support Services default EBITDA multiple: **14.11**

Last Available Balance Sheet

Below the simplified, last available balance sheet of the company.

	01/2021 - 12/2021
Cash and equivalents	**60,000**
Tangible assets	**-**
Intangible assets	**-**
Financial assets	**-**
Deferred tax assets	**-**
Total Assets	**60,000**
Debts due within one year time	**25,000**
Debt due beyond one year time	**-**
Equity	**-**
Total Liabilities and Shareholder's Equity	**25,000**

All numbers in $