Step 14: Estimate the Total Addressable Market Size for Follow-on Markets

Worksheet
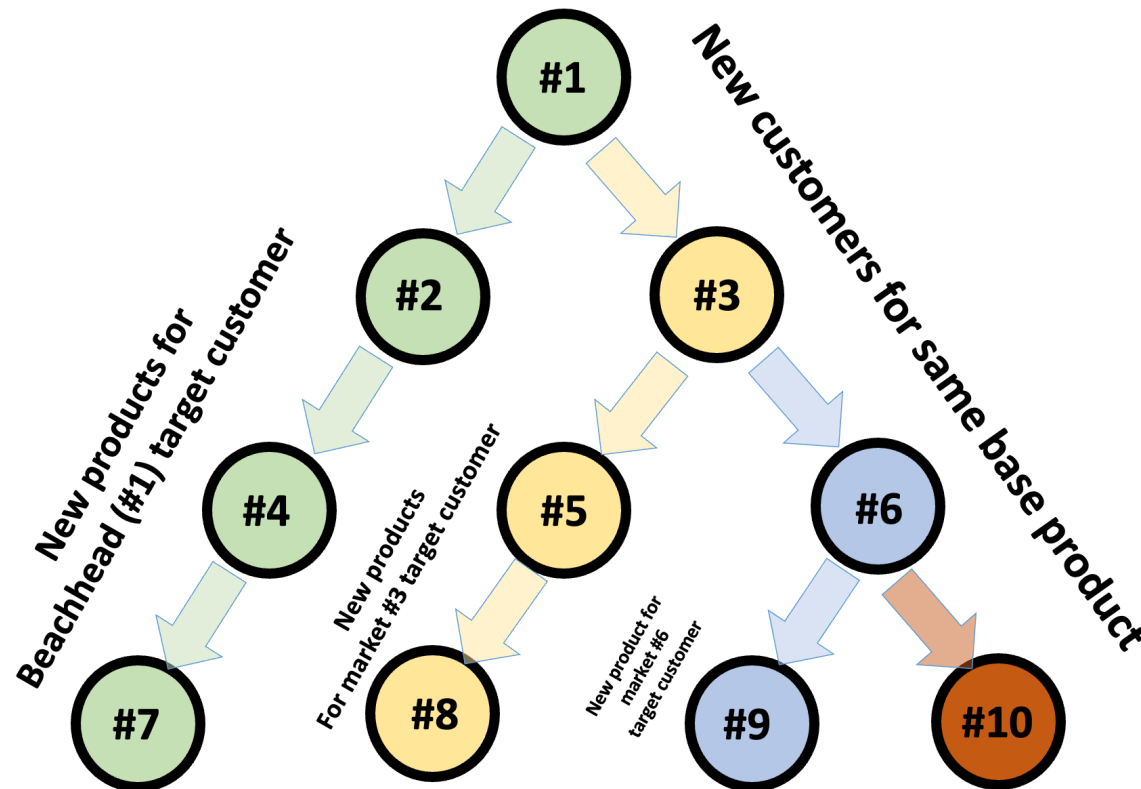
#1 (Beachhead Market):
Early Adopter Academic Researchers using AI tools

Follow-on Markets:
#2: *Advanced Data Visualization Suite for AI Co-Scientist Users* (New Product for Beachhead Customer)

#3: *Industry Researchers (AI/ML Focused)* (New Customer for Same Product - e.g., Dr. Rossi, Dr. Sharma)

#4: *Educational Module/Platform based on AI Co-Scientist* (New Product for Beachhead Customer type/setting)

#5: *Enterprise AI Co-Scientist (Enhanced Security & Integration)* (New Product for Market #3 Customer)

#6: *Government & Non-Profit Researchers* (New Customer for Same Product - potential fit for climate/ethics researchers like Dr. Carter, Dr. Jones)

Additional markets:
- Later Adopter Academic Researchers (Majority of the academic market from Step 4)
- Researchers in less computationally intensive fields (Social Sciences, Humanities) adapting the tool.
- Undergraduate Research Programs (Extension of #4).
- Technical Consulting Firms.
- Citizen Scientists / Independent Researchers.
- Specialized AI Agent Add-on Packs (e.g., Drug Discovery, Climate Modeling agents based on Step 9 examples).

New customers for same base product

New products for Beachhead (#1) target customer

New products For market #3 target customer

New product for market #6 target customer

#1 #2 #3 #4 #5 #6 #7 #8 #9 #10

Summary of Follow-on TAM Estimate and Priorities

	Candidate	How it Leverages Your Core	Same Product or Same Customer?	Pros of Selling to This Market	Cons of Selling to This Market	TAM Est.	Other Considerations	Rank
	#3: Industry Researchers (AI/ML Focused)	Directly uses Core AI; Industry data enriches Core's learning.	Same Product, New Customer	Large potential market, higher potential revenue/user, diversifies income, validates value beyond academia.	Different sales cycle, specific feature needs (security, integration), potentially stronger niche competitors.	€200M - €1.2B	Similar profitability to Beachhead possible (10-30% Step 4). Longer sales cycle (Step 13). Needs validation for enterprise features (leads to #5). High potential.	1
	#6: Government & Non-Profit Researchers	Directly uses Core AI; Data from different research types enriches Core learning.	Same Product, New Customer	Stable funding possible, addresses different impactful research areas (climate, ethics), potentially less competition.	Bureaucratic hurdles, slower adoption cycles, specific compliance/reporting needs, potentially lower budget flexibility.	€60M - €600M	Profitability likely similar. Time to conquer may be slow due to bureaucracy. DMU (Step 12) might be complex. Moderate potential.	2
	#5: Enterprise AI Co-Scientist (Enhanced Security etc.)	Core AI is central; adds layers needed for enterprise adoption.	New Product, New Customer (#3)	Addresses specific high-value needs of industry (#3), commands premium price, deepens relationship with industry segment.	Requires significant new development (enterprise features), longer/complex sales cycle, dedicated enterprise sales/support needed.	€150M - €1B	Higher revenue/user could mean higher profitability %. Significant investment required. Builds on success in #3. High potential but requires maturity.	3
	#2: Advanced Data Visualization Suite	Leverages outputs & user base of Core product; enhances perceived value of Core AI.	New Product, Same Customer (#1)	Sell more to existing happy customers, leverages established relationships, relatively easy market entry point.	Requires new product development, potential distraction from Core AI focus, smaller market size than new customer segments.	€12M - €72M	Potentially lower margin than Core software? Faster time to market than new customer segments. Lower overall potential but easier entry.	4
	#4: Educational Module/Platform	Leverages Core product as a teaching tool; indirectly showcases Core capabilities.	New Product, Same Customer (#1)	Large potential user base (students), builds brand early with next generation, supports academic mission.	Different buyer (universities/educators), likely lower price point/user, requires different features & support model.	€10M - €120M	Likely lower profitability due to educational pricing. Different sales model needed. Strategic value in building future user base. Lower immediate potential.	5

Individual Worksheet for Each Follow-on Market Segment - #2

Follow-on Market Segment Candidate Name: *Advanced Data Visualization Suite for AI Co-Scientist Users*

Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	Compound Annual Growth Rate (CAGR) Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments
120,000 - 240,000 (Assuming 20-40% uptake from Beachhead #1 users of 600k)	€100 - €300 (Add-on pricing)	€12M - €72M	25-30% (Riding on growth of core AI tool adoption)	**Profitability:** Potentially lower margin than core software. **Time:** Relatively fast to market to existing users. **Market Share:** Could capture a good share of the base users if integrated well. **Investment:** Moderate R&D for new features. **Competition:** Existing standalone viz tools. **Comments:** Good way to increase revenue per existing customer. Leverages trust but requires dedicated product effort outside the core AI

Individual Worksheet for Each Follow-on Market Segment - #3

Follow-on Market Segment Candidate Name: *Industry Researchers (AI/ML Focused)*

Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments
400,000 - 800,000 (Estimate based on global industry R&D, needs external validation)	€500 - €1500 (Higher budgets/value perception than academia)	€200M - €1.2B	30-35% (AI adoption in industry likely very strong)	**Profitability:** Similar to Beachhead (10-30%) possible, maybe higher. **Time:** Longer sales cycle (Step 13), takes time to build trust/validate. **Market Share:** Aim for 10-20% initially. **Investment:** Sales/marketing adaptation, minor feature tweaks (leads to #5). **Competition:** Established industry players, internal tools, other AI startups (Step 11). **Comments:** Natural adjacency. High potential. Needs focus on reliability, security, ROI (based on Step 9 feedback from Dr. Rossi/Sharma).

Individual Worksheet for Each Follow-on Market Segment - #4

Follow-on Market Segment Candidate Name: *Educational Module/Platform based on AI Co-Scientist*

Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments
200,000 - 600,000 (Effective licensed users via institutions/courses; potentially millions of actual student users)	€50 - €200 (Likely institutional site licenses or per-course fees)	€10M - €120M	20-25% (EdTech adoption can be slower)	**Profitability:** Likely lower margins due to educational pricing. **Time:** Slow adoption cycles in universities. **Market Share:** Dependent on partnerships & curriculum integration. **Investment:** Requires curriculum development, different UI/UX for students, teacher support materials. **Competition:** Existing educational software, universities' internal platforms. **Comments:** Strategic long-term play for brand building and future user acquisition, but different business model.

Individual Worksheet for Each Follow On Market Segment - #5

Follow-on Market Segment Candidate Name: *Enterprise AI Co-Scientist (Enhanced Security & Integration)*

Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments
150,000 - 400,000 (Assuming 30-50% of Market #3 needs/pays for premium features)	€1000 - €2500 (Premium enterprise pricing)	€150M - €1B	30-40% (High growth for enterprise-grade AI solutions)	**Profitability:** Potentially higher margins due to premium pricing. **Time:** Long sales cycles, requires proving value in pilot projects. **Market Share:** Capture a fraction of #3 initially. **Investment:** Significant R&D for security, compliance, MLOps integration (Step 9 feedback), dedicated enterprise sales/support team. **Competition:** Major cloud AI platforms, specialized enterprise AI vendors. **Comments:** High-value segment, builds on success in #3. Requires significant company maturity and resources. Key focus on reliability, scalability, security, integration.

Individual Worksheet for Each Follow On Market Segment - #6

Follow-on Market Segment Candidate Name: *Government & Non-Profit Researchers*

Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments
200,000 - 500,000 (Estimate based on global research institutes, needs validation)	€300 - €1200 (Similar to academia, maybe slightly higher funded)	€60M - €600M	25-30% (Steady adoption, potentially slower than industry)	**Profitability:** Similar to Beachhead likely. **Time:** Can be slow due to procurement rules and bureaucracy (Step 13). **Market Share:** Potential for strong share if specific needs are met. **Investment:** Adapt marketing, potentially add compliance features. **Competition:** May be less intense than industry? Depends on research area. **Comments:** Different research focus can enrich the Core AI's learning. Requires patience with sales/adoption process. DMU may be complex.

Step 15: Design a Business Model

Worksheet:

Customer

- **Looking at the DMU, what is important?** Achieving research impact, efficiency, and justifying budget use are key priorities for the DMU.

- **DMP?** The Decision Making Process involves end-user/champion advocacy and economic buyer approval, often navigating institutional procurement.

- **Preference for upfront (capital) or recurring (operating) expense?** Researchers and institutions generally prefer predictable recurring operating expenses for software subscriptions.

- **Other considerations:** Budget constraints within academic labs necessitate clear ROI justification for new expenditures. Procurement processes in universities can be lengthy and require specific documentation for approval.

Value Creation

- **How much value do they get?** Users get significant value through a 50% reduction in research cycle time and enhanced research quality.

- **When?** Value is delivered continuously throughout the research lifecycle as tasks are automated and insights are generated.

- **How risky is it?** Adoption risk exists related to trusting AI outputs, requiring validation and user control features.

- **Other considerations:** The value proposition strongly aligns with core researcher priorities like academic excellence and innovation. The self-improving nature of the AI means the value delivered increases over time for the customer.

Competition

- **Who is comp & what biz model do they use?** Competitors like Google's Co-Scientist, Sakana, and OpenAI DeepResearch likely use subscription or usage-based cloud models.

- **How locked in are they?** Customers currently use fragmented tools, suggesting low lock-in to any single integrated solution currently.

- **Could I disrupt the industry? Risks?** Yes, the self-improving core offers disruption potential; risks include adoption hurdles and proving reliability.

- **Other considerations:** Our Core (self-improving AI) provides a key differentiator against competitors with static systems. Our competitive positioning aims for superiority in both research acceleration and quality enhancement.

Internal

- **Effect on Sales Cycle? COCA?** The sales cycle is estimated at 6-22 weeks, with COCA initially lower via digital means but increasing for enterprise.

- **LTV?** Cash Flow Recurring revenue (€250-€1000/user/year initially) supports predictable LTV and stable cash flow via subscriptions.

- **Distributors?** Initial sales are direct, but institutional resellers could become a channel later.

- **Operations & other considerations**: Operations involve digital delivery, requiring investment in R&D for AI improvements and customer support. Managing cloud infrastructure costs and ensuring scalability are important operational factors.

Identification of Different Units of Product You Can Charge For (if appropriate)

What are the different potential units you could charge for? (e.g., individual product, number of users, usage, site license, etc.)

1. Per Named User Seat:
    Pros: Simple, predictable revenue, common in SaaS
    Cons: Can be costly for large labs, friction in adding users.

2. Usage-Based (e.g., compute hours, API calls, tokens consumed)**:**
    Pros: Scales directly with value/usage, potentially lower entry cost.
    Cons: Unpredictable costs for users, harder to budget, complex tracking.

3. Institutional Site License (e.g., University Department, Lab Group)**:**
    Pros: Easier for large organizations to purchase, predictable cost for buyer, larger deal size.
    Cons: Longer sales cycle, requires clear definition of "site", may undervalue heavy users.

#	Option	Unit	Cust. Fit	Value Creation Fit	Comp. Fit	Internal Fit	Pros	Cons	Grade
	Summary of Business Model Candidates								
1	**Subscription per User (Tiered)**	Named User	High	High	High	High	Predictable revenue, simple, aligns with SaaS norms, allows tiers.	Can get expensive for large teams, potential for seat sharing.	A
2	**Freemium (Limited Use Free Tier)**	User / Usage	High	Medium	Medium	Medium	Lowers adoption barrier, good for lead gen, potential virality.	Conversion challenges, cost of free users, potential value perception hit.	B
3	**Usage-Based Subscription**	Compute/Tokens/ etc	Medium	High	Medium	Medium	Aligns cost with value, flexible for users with variable needs.	Unpredictable costs, harder to budget, complex metering/billing.	B-
4	**Institutional Site License (Tiered)**	Department/Lab	High	High	Medium	Medium	Good for large buyers, predictable cost, simplifies procurement.	Longer sales cycle, complex pricing tiers, needs clear definitions.	A-

5	**Hybrid (Base User Fee + Usage)**	User + Usage	Medium	High	Medium	Low	Captures base value & scales with usage, flexible.	Complex for customer to understand, complex billing/tracking internally.	C+

1. Initial Decision and Rationale

Which business model did you choose and why?

We choose a **Tiered Subscription per User** model (Option #1) as the initial primary business model. This model offers predictability for both customers and Cogency AI, aligns well with standard academic/SaaS purchasing preferences for operational expenses, and is simple to understand and administer. Tiering allows flexibility to capture different value levels (e.g., basic features vs. advanced agent controls) and supports scaling from individual researchers to small teams, directly aligning with our beachhead market approach and value proposition.

2. Tests to Validate

a. What hypotheses are you assuming to be true for the business model(s) you have chosen?

We assume researchers/labs are willing to pay €250-€1000 per user annually for significant research acceleration, and they prefer predictable per-user subscriptions over usage-based uncertainty.

b. What experiments will you run to test your hypotheses?

We will offer distinct subscription tiers during beta/early access programs with varying features and price points, and monitor signup rates and tier selection for each.

c. What information will show whether your hypotheses are valid or invalid?

Conversion rates for paid tiers, distribution of users across tiers, direct feedback on pricing fairness, and comparison of revenue per user against TAM estimates will validate/invalidate hypotheses.

d. How long will you give the experiments to run?

We will run these pricing experiments for the first 3-6 months post-launch or during the initial beta program to gather sufficient data on user preferences and willingness to pay.

Disciplined Entrepreneurship Workbook

Step 16: Set Your Pricing Framework

Worksheet

Step #16 Worksheet: Key Considerations in Pricing

Customer DMU/DMP

Looking at the DMU, what is important? _____
DMP? _____
What spending limits are there? _____
Other considerations/Summary: _____
_____

Nature of Customer

What is the customer segment? __ Techie (tech) __ Early Adopter (ego) __ Early
Majority (ROI, some risk) __ Late Majority (ROI, low risk) __ Laggard (avoid risk)
How do you know? _____
Often it is %'s & then how will you id each type in your customer segment? _____

Other considerations/Summary: _____

Value Creation

How much value do they get? _____
When? _____
How risky is it? _____
Other considerations/Summary: _____
_____

Competition

Who is comp & what are their prices? _____
_____
Which is the best comparable? _____
What does that indicate your price range should? _____
Other considerations/Summary: _____

Strength of Core

How strong is your core today compared to comp? _____
Will it get stronger over time? If so when? _____
Do you believe you will be able to raise prices in the future? If so why? _____

Other considerations/Summary: _____

Maturity of Your Product

Has your product & value proposition been validate in the eyes of the customer? ____
Do they see your company as high risk? _____
What kind of flexibility can you do for your first customer to decrease the real risk &
perceived risk in the market? _____
Other considerations/Summary: _____

Customer DMU/DMP

- **Looking at the DMU, what is important?** Achieving research impact, budget efficiency, and demonstrable value are crucial for the DMU.
- **DMP?** The process involves end-user/champion advocacy convincing the budget-holding economic buyer, often navigating institutional procedures.
- **What spending limits are there?** Spending is constrained by lab/grant budgets, aligning with the previously estimated €250-€1000 per user annually.
- **Other considerations/Summary:** The Champion plays a key role in justifying the expenditure to the Economic Buyer. University procurement processes can add complexity and time to the decision.

Nature of Customer

- **What is the customer segment?** __ Techie (tech) __ Early Adopter (ego) __ Early Majority (ROI, some risk) __ Late Majority (ROI, low risk) __ Laggard (avoid risk) Early Adopter (ego/innovation-driven, seeks efficiency/edge) based on Step 4 and Persona.
- **How do you know?** The beachhead market definition (Step 4) and Persona profile (Step 5) target researchers actively using AI and seeking cutting-edge tools.
- **Often it is %'s & then how will you id each type in your customer segment?** Step 4 estimated 20% are early adopters; identify them via publications, tool usage, conference activity, and expressed interest in efficiency gains.
- **Other considerations/Summary**: This segment values innovation and efficiency, willing to take some risk for significant gains. Their feedback is crucial for refining the product and validating the value proposition.

Value Creation

- **How much value do they get?** They gain significant value via a quantified 50% reduction in research cycle time (Step 8).
- **When?** Value is realized continuously as research tasks are performed using the platform (Step 15).
- **How risky is it?** There is moderate adoption risk concerning trust in AI outputs, mitigated by human oversight features (Step 10, 15).
- **Other considerations/Summary:** The core value aligns directly with top researcher priorities identified in the Persona (Step 5). The AI's self-improving nature means the value delivered should increase over time (Step 10).

Competition

- **Who is comp & what are their prices?** Competitors include Google's Co-Scientist, Sakana, OpenAI DeepResearch (Step 11), with comparable prices estimated at €500–€1000/user/year (Step 4).
- **Which is the best comparable?** OpenAI DeepResearch might be the closest comparable due to its use of reinforcement learning (Step 11).
- **What does that indicate your price range should?** This suggests a viable price range of €250-€1000 per user per year (Step 4, Step 15).
- **Other considerations/Summary:** Our core provides a differentiation against static systems (Step 10). Our competitive positioning focuses on excelling in both research acceleration and quality enhancement (Step 11).

Strength of Core

- **How strong is your core today compared to comp?** Our core (self-improving AI via continuous learning from real research outcomes) is unique compared to competitors' potentially static systems (Step 10).
- **Will it get stronger over time? If so when?** Yes, it strengthens continuously over time as more real-world research data is processed, creating a data network effect (Step 10).
- **Do you believe you will be able to raise prices in the future? If so why?** Yes, because the core's self-improvement directly increases the value delivered to the customer over time (Step 10).
- **Other considerations/Summary:** The core directly enables the unique value proposition and supports the upper-right competitive positioning (Step 11). Its defensibility grows through the accumulation of proprietary learned strategies from diverse research outcomes.

Maturity of Your Product

- **Has your product & value proposition been validated in the eyes of the customer?** Yes, initial validation occurred through positive Persona feedback (Step 7) and high interest from the Next 10 Customers (Step 9).
- **Do they see your company as high risk?** Yes, as a new startup venture, the company itself is perceived as higher risk.
- **What kind of flexibility can you do for your first customer to decrease the real risk & perceived risk in the market?** Offer pilot programs, extended free trials, significant early adopter discounts, dedicated support, and flexible initial terms.
- **Other considerations/Summary:** Building trust early through transparency and strong support is crucial. Success stories from initial customers will be vital for reducing perceived risk for later adopters.

1. **Initial Decision and Rationale**

   a. **What unit of product are you using for pricing (carried forward from Step 15, Design a Business Model)?**

      We are using a Tiered Subscription per Named User seat as the primary pricing unit, chosen for its predictability, simplicity, and alignment with SaaS norms in the academic market.

   b. **Based on your analysis, what is the price range that is most appropriate and why?**

      The most appropriate price range is €250 - €1000 per user per year. This range is supported by TAM analysis (Step 4), competitor pricing insights (Step 4), and balances the significant value provided (Step 8) against academic budget realities.

   c. **In the first year, what do you believe your initial listed price will be, and what will be the effective price to the market and why? (The "effective price" is the actual price your customer pays after discounts.)**

      We anticipate an initial listed price for a mid-tier subscription around €500 per user per year. However, the effective price will likely be lower, perhaps €250-€400 per user per year, due to early adopter discounts, pilot program pricing, or introductory offers designed to reduce risk perception and encourage initial adoption.

   d. **Sanity Check: What is your expected estimated marginal cost (cost to produce a unit of product, excluding one-time setup costs)? Does your price per unit significantly exceed your estimated marginal cost in the long term?**

      The estimated marginal cost per additional user is very low, primarily consisting of incremental cloud hosting and support costs, approaching near-zero. Yes, the anticipated price per unit significantly exceeds the marginal cost in the long term, consistent with typical software-as-a-service business models.

2. **Test to Validate**
   a. **In setting your pricing framework, what hypotheses are you assuming to be true?**

      We hypothesize that:
      1) Researchers perceive enough value to justify an annual cost of €250-€1000 per user.
      2) A predictable, per-user subscription model is preferred over usage-based models.
      3) Tiered pricing effectively captures different user needs and willingness to pay.

   b. **What experiments will your run to test your hypotheses?**

      We will offer clearly defined subscription tiers (e.g., Basic, Pro, Premium) at different price points during our beta program and initial launch. We will monitor uptake rates, tier choices, and actively

solicit feedback on pricing perception through surveys and interviews with early users.

c. **What information will show that your hypotheses are valid or invalid?**

Validation will come from achieving target conversion rates to paid tiers, observing user distribution across tiers matching expected value, receiving positive feedback on price fairness relative to value, and achieving revenue per user aligning with projections. Invalidation would be indicated by low conversion, clustering in free/lowest tiers, strong negative feedback on price, or significant deviation from revenue goals.

d. **How long will you give the experiments to run?**

We will allow these initial pricing experiments to run for approximately 3 to 6 months following the initial launch or during the dedicated beta testing phase to gather sufficient data and observe user behavior patterns.

Step 17: Estimate the Lifetime Value (LTV) of an Acquired Customer

Worksheet

Inputs to the Worksheet
One-Time Charge(s)

What will your one-time charges be for each customer? (e.g. initial purchase price of product)

There are no separate one-time charges; the business model is subscription-based.

_____

What is your estimated profit margin on your one-time charges? ((One-Time Charge – Marginal Production Cost) / One-Time Charge = Profit Margin -- e.g. if your one-time charge is $100 and the cost to make that one unit of product is $20, your profit margin is (100-20)/100 = 80%) (General estimate is fine and don't add more precision that is appropriate at this point – it can be misleading)

Not applicable as there are no one-time charges.

_____

What is the life of the product before a customer has to repurchase the product? The product is a subscription service, so repurchase is continuous via renewal rather than a fixed product life.

What % of customers will repurchase? This is represented by annual retention rates for the subscription service.

What will your recurring revenue streams be? Annual subscription fee per user for accessing the AI Co-Scientist platform.

What is your profit margin on your recurring revenue streams? Estimated gross profit margin is 75%, based on high SaaS margins (low marginal cost).

What is your retention rate for your recurring revenue streams?

After 1st year: 80%

After 2nd year: 70%

After 3rd year: 60%

After 4th year: 50%

After 5th year: 50%

What other revenue sources will you have? What will your profit margin be, and is there a yearly retention rate applicable to them?

Potential future sources include add-on modules or premium tiers, but none are assumed for this initial LTV calculation.

What will your cost of capital be? (If you don't know, assume 50%. If you do know, explain below why you think your cost of capital will be different.)

We will use the default assumption of 50%.

Calculations to Estimate the LTV						
Input	t = 0 (Today)	t = 1 (1 year)	t = 2 (2 years)	t = 3 (3 years)	t = 4 (4 years)	t =5 (5 years)
A. One-time Revenue Amount	€0	€0	€0	€0	€0	€0
B. - One-time Revenue Profit Margin (%)	0%	0%	0%	0%	0%	0%
C. - One-time Revenue Profit (row A * B)	€0	€0	€0	€0	€0	€0
D. Recurring Revenue Amount	€0	€500	€500	€500	€500	€500
E. - Recurring Revenue Profit Margin (%)	0%	75%	75%	75%	75%	75%
F. - Recurring Revenue Profit (row D * E)	€0	€375	€375	€375	€375	€375
G. Other Revenue Amount	€0	€0	€0	€0	€0	€0
H. - Other Revenue Profit Margin (%)	0%	0%	0%	0%	0%	0%
I. - Other Revenue Profit (row G * H)	€0	€0	€0	€0	€0	€0
J. Sum of Profit for time period	**€0**	**€300**	**€210**	**€126**	**€63**	**€31.50**
K. Default cost of capital factor: Discount factor to NPV (@50%/year and assuming units of time = years)[1]	1.0	.67	.44	.30	.20	.13
L. NPV of each item (row J * K)	**€0**	**€201**	**€92.40**	**€37.80**	**€12.60**	**€4.10**
M. Sum of All NPVs (sum of all cells in row L)	**€347.90**					

Explanation of calculations for Row J - Sum of Profit for time period

Row J, "Sum of Profit for time period," represents the **Expected Profit** we anticipate generating *during* each specific year (t=1 to t=5) from an average customer acquired today (at t=0). It accounts for the fact that not all customers will remain subscribed over time due to churn.

The calculation follows the formula:
Expected Profit (Row J) = Potential Profit * Cumulative Retention Rate

1. **Potential Profit:** This is the gross profit we *would* make from a customer in a given year *if* they were retained. It is calculated from:
   - o Row D (Recurring Revenue Amount) = €500 per year
   - o Row E (Recurring Revenue Profit Margin) = 75%
   - o Potential Profit = €500 * 75% = €375 per year (for t=1 onwards).
2. **Cumulative Retention Rate:** This is the probability that a customer acquired at t=0 is still an active, paying subscriber *at the start of the next period* (or equivalently, retained *through* the current period). It's calculated using the input retention rates year-over-year:
   - o Retention through Year 1 (start of Year 2): 80%

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[1] To calculate the present value (PV) of a future value of cash (FV) where i = the interest rate and t = units of time past, the formula is PV = FV * (1 / (1+i)^t)

- o   Retention through Year 2 (start of Year 3): 80% (Year 1) * 70% (Year 2) = 56%
- o   Retention through Year 3 (start of Year 4): 80% * 70% * 60% (Year 3) = 33.6%
- o   Retention through Year 4 (start of Year 5): 80% * 70% * 60% * 50% (Year 4) = 16.8%
- o   Retention through Year 5 (start of Year 6): 80% * 70% * 60% * 50% * 50% (Year 5) = 8.4%
3. **Calculation of Row J values:**
- o   J @ t=0: €0 (No revenue or profit at acquisition)
- o   J @ t=1: Potential Profit (€375) * Cumulative Retention through Year 1 (80%) = €375 * 0.80 = €300
- o   J @ t=2: Potential Profit (€375) * Cumulative Retention through Year 2 (56%) = €375 * 0.56 = €210
- o   J @ t=3: Potential Profit (€375) * Cumulative Retention through Year 3 (33.6%) = €375 * 0.336 = €126
- o   J @ t=4: Potential Profit (€375) * Cumulative Retention through Year 4 (16.8%) = €375 * 0.168 = €63
- o   J @ t=5: Potential Profit (€375) * Cumulative Retention through Year 5 (8.4%) = €375 * 0.084 = €31.50

In essence, Row J provides a realistic estimate of the average profit generated per starting customer within each future year, factoring in expected customer churn over the 5-year period.

Interpretation of Estimation

a. What would you round your LTV estimation to? What range do you feel comfortable with? We would round the LTV estimation to €350. A comfortable range, given the assumptions, would be €250 to €500.

b. Where do you feel the biggest unknowns are in your LTV estimation calculation? The biggest unknowns are the actual year-over-year customer retention rates and the achievable gross profit margin on recurring revenue streams.

c. Does the number seem reasonable? Yes, an LTV of €350 seems reasonable for a SaaS product priced at €250-€1000 per year, provided customer acquisition costs are managed effectively.

d. What are the key drivers of the LTV if you want to increase it? The key drivers are increasing customer retention rates (especially in early years), increasing the average revenue per user (e.g., upselling, add-ons), and improving the gross profit margin.

e. Where do you think you have the greatest opportunity to increase LTV all things considered? The greatest opportunity likely lies in improving customer retention through demonstrating ongoing value and product enhancements, as this compounds benefits over multiple years. Introducing valuable add-on modules or successfully upselling users to higher tiers based on demonstrated ROI also presents a significant opportunity.

Step 18: Map the Sales Process to Acquire a Customer

WHAT IS STEP 18, Map the Sales Process to Acquire a Customer?

Visually show how you will create and fulfill demand for your product over the short term, the medium term, and the long term.

WHY DO WE DO THIS STEP AND WHY DO WE DO IT NOW?

The sales process is a critical input to estimating the Cost of Customer Acquisition (COCA) in the next step, Step 19. The sales process, including selecting your sales channels, will allow you to understand the unit economics of your product and then adjust accordingly to increase profitability. You can intelligently map the sales process now that you have an estimate from Step 17 of the LTV, which helps indicate which sales methods are affordable and practical for your startup.
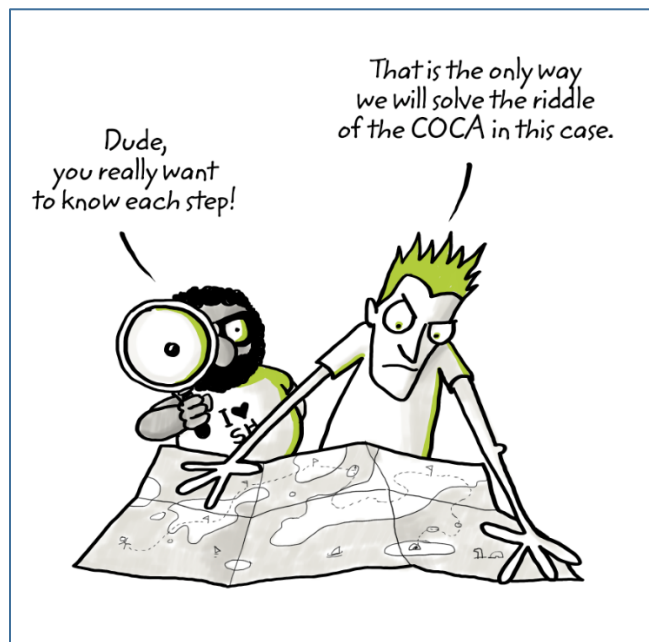
Figuring out how to generate demand and to fulfill it with a sales channel strategy is your next key decision.

By the Book

See pages 195-201 of *Disciplined Entrepreneurship* for base knowledge on this step.

See pages 201-202 of *Disciplined Entrepreneurship* for examples of how different companies and teams have addressed this step.

Process Guide

Now that you have a general range for what the LTV is going to be for your product, you can now start to focus on your sales strategy. In *Disciplined Entrepreneurship* I chose not to call it a channel strategy because the decision should be more thoughtful than a typical channel strategy, but most people still recognized it as a

channel strategy. I won't fight this nomenclature too much, but I think of it as a "channel strategy plus." It is a dynamic go-to-market strategy to both create demand and then fulfill demand, which are two quite different processes.

There are four main categories of sales channels to consider:

Option	Pros	Cons
1. **Field Sales**: Direct salespeople who are employees of the company. They call on prospects in person at some point in the process. They provide high-touch connection and line of communication to the potential customer. Also known as "outside sales."	- Excellent for demand generation when creating new markets; may well be only option for demand generation - High-touch approach creates excellent feedback loop - High-touch approach also generally creates deep customer loyalty	- Very expensive (salary, bonus, expenses) - Requires an LTV of $30K or likely higher - Hard to scale up as hiring them is hard and expensive and the success rate is unpredictable - Takes a long time to become productive - A challenge to manage
2. **Inside Sales:** Also known as "telesales" in the past, but today no longer just telephone sales reps. They use email and other electronic communication to create and continue a dialogue with the customer, but do not visit the customer in person.	- Much cheaper than field sales - Maintain direct connection with prospects, potential customers, and customers - Able to get nuanced feedback from prospects because a human is in the loop - High productivity because of lack of travel - Good systems exist to further increase productivity and track progress of sales funnel and sales reps	- Lower touch, resulting in less customer engagement and less demonstration of the company's commitment to the customer - Still expensive because the salesperson is interacting one-on-one with customers - Some products just can't be sold without an in-person demo or meeting with the customer
3. **Internet Sales:** This is a general catch-all category for sales done by computers through automatically generated emails, big data analysis, social media, preference engines, etc. The key differentiator is that there is no human in the loop.	- Direct interaction with the customer - Ability above all others to systematically capture even more data on the customer and track their progress – as well as spot patterns and make intelligent recommendations - Lowest cost by far - Actually preferred by some prospects	- Low touch - Can't read some nuances that only humans can - Some prospects do not react well to it - Privacy considerations - Can be hard to build customer loyalty - Risk for high LTV prospects/customers that others who use the higher touch channels above will steal these valuable customers
4. **Third-Party Resellers:** These people sell your product but are not employees of your company . They include VARS (Value Added Resellers), distributors, stores, catalogues, independent sales agents, etc.	- Instant geographic coverage - Easy to manage - Understand cultural context and have pre-existing contacts in their databases - Lower cost than field sales - Don't have to hire, fire and manage salespeople - Good for quick demand fulfillment - Potential temporary solution - Potential good solution for a mature product	- They own the customer, not you (very bad!) - Unlikely to have direct interaction with prospects, hence miss important learning about customer needs - Poor at demand generation - Expensive compared to inside sales and Internet sales - Most likely low loyalty to you and your product (just another product in their portfolio)

Within each of these four categories, there can be many different variants, as well as hybrids across the categories. For instance, someone in field sales often spends a reasonable fraction of time on the phone, but their training and expertise is in face-to-face closing the sale, and their pay reflects that.

Still, this table is useful because it will help you determine what sales strategies are affordable based on your LTV:

Estimated LTV	What you can afford for sales channels in the long term
~$30	Only Internet sales; no human can be in the loop
~$300	Predominantly if not all Internet sales, with maybe a very small amount of inside sales for the most important prospects
~$3,000	Mix of Internet sales and inside sales and maybe some third-party resellers, especially if the product is mature or low support required
~$30K	Mix of all channels, with heavy reliance on inside sales and judicious use of field sales on big accounts. Third-party resellers can play a role in this scenario for geographic coverage and quick scale-up.
~$300K	Likely led by field sales, with support from inside sales and some third-party resellers in selected areas for geographic coverage.
~$3M	Dominated by field sales, with other channels in a supporting role
~$30M	The field sales representatives are the all-powerful dictators; other sales channels don't even look at highly qualified prospects or customers without their approval. Customer intimacy and professionalism is crucial in this scenario.

To map your sales process, you will start by determining for the short, medium, and long term what proportion of sales will come from different channels. Use the worksheet "Sales Channels for the Short, Medium, and Long Term" to define the periods of time and proportions, as well as sales goals to achieve during that period, and assumptions and risks involved. You will also define what milestones you need to reach during each period so that your company is prepared to shift to the sales strategy for the next period.

Short term, medium term, and long term are defined in large part on the progress you make on your product. In the short term, you are figuring out what your product is and creating demand; in the medium term you are refining your product and starting to produce it in a repeatable fashion, you are fulfilling demand, and you are building the manufacturing and sales infrastructure you need to be successful; and in the long term, you are scaling your business. The key is that you define and understand what milestones allow you to shift your approach from the short-term sales channels to the medium term to the long term. Typically, short term will map to the first year from your LTV calculation, medium term the second year, and long term the third year and beyond, but this may differ if your product has significantly longer or shorter development cycles, such as new pharmaceutical development.

As is explained in more detail in *Disciplined Entrepreneurship*, the short term is where you will focus on demand generation and creating market awareness, and you will also still be iterating on your product and marketing, so field sales will be important despite its higher costs. As you progress through the medium term and then the long term, your sales channels should shift away from focusing on field sales, particularly for an LTV less than $1M in the medium term and less than $100K in the long term.

Next, you will take the sales funnel work you did in Step 13 and refine it into second draft sales funnels, one for each of the short-term, medium-term, and long-term time periods. Now that you know which sales

channels are viable – and more importantly, not viable – for the long term, you have enough information to be much more specific than in your original draft from Step 13. Like everything, you will continue refining your sales funnels over time.

You'll also think through what techniques and actions you can use to maximize conversion between steps. Be creative and draw on the work you've done so far in the 24 Steps as well as ideas from other companies and industries. At the end of this chapter I've provided an example from one of my student teams to inspire you.

A disclaimer: These worksheets are comprehensive and may be overdesigned for your situation. Or, if you have a complicated multi-sided market, they may be under-designed. Use common sense and customize this framework to fit your customer/product scenario. For instance, if you are B2C (Business to Consumer), some of this detail is not necessary, though I would argue it is still good for you to go through all the details so that you fully understand the big picture. Knowledge is a good thing – if you have the time.

General Exercises to Understand Concept
See the back of the book for sample answers to some of these questions.

1. **Personal Experience with a Consumer Product:** Identify a product in your personal life that you enjoy buying. Quickly map the experience you had in going from having initial interest in the product to purchasing it. Why do you like the sales process so much? Which sales channels does the product's maker use? Which tactics are effective?

   I enjoy buying running shoes online. The process involves browsing reviews, comparing features on websites (Internet Sales), and easy ordering/shipping. I like the convenience, vast selection, and ability to research thoroughly before purchase; targeted ads and email reminders are effective tactics.

2. **Personal Experience with a Business Product**: Do the same exercise in #1 but now with a product from your professional life. What are the differences?

Acquiring cloud computing services (like AWS) involved initial online research (Internet Sales), followed by discussions with an Inside Sales representative to clarify technical needs and pricing for our team. The main difference from consumer buying was the technical depth required and the involvement of a sales rep for tailored solutions.

3. **Learning from Negative Experiences:** Now think of a product where you were particularly unhappy with the sales experience. What did you not like? What was fundamentally flawed in the sales process? How could it have been redesigned to benefit both the customer and the company selling the product?

Trying to sign up for a complex project management tool was frustrating due to a confusing website, unclear pricing tiers, and slow support responses (Internet/Inside Sales issues). It felt like the company didn't understand user needs. Redesigning it with clearer navigation, upfront pricing, and faster support could improve trust and conversions.

4. **LinkedIn Example:** How does LinkedIn get new customers? How do they get customers to fill in their profiles? How do they encourage customers to increase the number of connections the customer has on the social network? Do customers ever speak to anyone who works at LinkedIn?

LinkedIn primarily uses Internet Sales (freemium model, automated emails, profile prompts, ads) to acquire users and encourage engagement like profile completion and connection building. Users rarely, if ever, speak directly to a LinkedIn employee during the standard sign-up or usage process; sales interactions are typically reserved for premium business solutions.

5. **Private Jet Sales Process:** Now imagine you were going to buy a private jet (nice!). What kind of sales process would you expect? Why?

Buying a private jet would involve a high-touch Field Sales process. I'd expect personalized consultations, detailed demonstrations, bespoke configuration options, and extensive relationship building with a dedicated sales representative due to the extremely high cost (LTV) and complexity of the purchase.

Worksheets

Sales Channels for the Short, Medium, and Long Term			
	Short Term – Initial Market Entry	**Medium Term – Gaining Market Traction**	**Long Term – Steady State**
How Long – when does this time period start and end? (include units – e.g. months, years, etc.)	First 12 Months (Year 1)	Months 13-24 (Year 2)	Months 25+ (Year 3 and beyond)
What % of the Sales (measured by revenue) for:			
- **Field Sales**	0%	0%	0%
- **Inside Sales**	60%	30%	10%
- **Internet Sales**	40%	70%	90%
- **Third Party Reseller**	0%	0%	0%
Key Milestones for this time period which when achieved indicated it is time to move to the next time period:	1. Achieve first 50 paying customers. 2. Validate core value proposition with early adopters. 3. Establish repeatable process for onboarding and initial support.	1. Reach 500 paying customers. 2. Achieve positive unit economics (LTV > COCA). 3. Develop scalable self-service onboarding and primary support channels.	1. Reach 2,000+ paying customers. 2. Achieve target market share within beachhead. 3. Establish automated processes for majority of sales and support functions.
Key Assumptions:	1. Target researchers are reachable via online channels and conferences. 2. Early adopters willing to engage with Inside Sales for feedback. 3. Initial product is stable enough for paid pilots/subscriptions.	1. Internet sales channels (content, SEO, limited ads) can drive majority of leads. 2. Product value is clear enough for self-service signup. 3. Unit economics model based on LTV/COCA estimates holds true.	1. Automated marketing and sales funnels are effective at scale. 2. Network effects (referrals, publications) contribute significantly to growth. 3. Product requires minimal human intervention for majority of users.

Highest Risk Factors:	1. Failure to validate value proposition / achieve product-market fit. 2. High initial COCA due to Inside Sales reliance. 3. Slow adoption rate among target researchers.	1. Inability to scale lead generation cost-effectively via Internet Sales. 2. Churn rate higher than projected in LTV. 3. Competitor actions impacting market traction.	1. Market saturation within beachhead. 2. Failure to maintain competitive advantage (Core erosion). 3. Inability to effectively automate sales/support leading to unsustainable costs.
Summary for Time Period:	Focus on direct engagement (Inside Sales) with early adopters for learning, validation, and securing initial paying customers. Supplement with targeted online content (Internet Sales) to build awareness and generate initial leads. High-touch interaction prioritized over scalability.	Shift towards scalable channels (Internet Sales) for lead generation and conversion. Optimize Inside Sales for higher-value prospects or complex institutional deals. Focus on achieving positive unit economics and streamlining onboarding/support. Prepare for broader market reach.	Dominated by efficient, automated Internet Sales channels. Inside Sales used strategically for key accounts/expansion. Focus on maximizing LTV through retention, automated upselling, and leveraging advocacy. Continuous optimization of automated systems for profitability and growth.

2nd Draft Sales Funnel Inputs

		Short Term	Medium Term	Long Term
#1: Identification (Output: Leads)	How will you generate leads?	Direct outreach (Inside Sales), conference presence, initial content marketing/SEO.	Primarily Content Marketing/SEO, targeted online ads, webinars, growing referrals.	Primarily SEO/Organic Content, strong referral program, minimal paid ads, automated nurturing.
	What are your customer's watering holes?	Conferences (NeurIPS, etc.), specific journals, uni dept websites, research forums, X/Twitter (AI circles). (From Step 5/9/12)	Online academic communities (ResearchGate), key blogs, relevant subreddits/forums, webinars.	Established online communities, high-traffic academic portals, automated content distribution.
	Who from the customer's DMU is involved in this part of the funnel?	End User (Chrysis), Champion (Dr. Costa).	End User, Champion.	End User, Champion (often via referral).
#2: Consideration	How do you start the initial dialogue with your leads?	Personalized emails/calls (Inside Sales), post-conference	Responding to content engagement (downloads, webinar signups),	Primarily self-service demo/trial signup, automated

(Output: Suspects)		follow-up, demo requests from website.	automated email sequences, targeted demo offers.	responses to inquiries, community engagement.
	What windows of opportunity or triggers exist?	Starting new research project, frustration with existing tools, grant funding cycles, conference exposure.	Publication deadlines, need for specific analysis, peer adoption/recommendation.	Budget cycles (renewal), scaling research needs, new feature releases triggering interest.
	Who from the DMU is involved?	End User, Champion.	End User, Champion.	End User, Champion.
#3: Engagement (Output: Prospects)	How do you determine whether your value proposition is appealing to the customer?	Live demos (Inside Sales), pilot projects, sharing initial case studies/QVP (Step 8).	Targeted demos, free trials, webinars showcasing value, ROI calculators, detailed case studies.	Self-service trials, automated demos, extensive documentation/case studies, peer reviews/testimonials.
	How do you determine whether your pricing is in line with the customer's budget?	Direct discussion (Inside Sales), transparent pricing on website (Step 16 range), flexible pilot terms.	Clear website pricing, tier comparisons, discussion during demos/trials if needed.	Transparent website pricing, automated tier recommendations, minimal direct negotiation needed.
	Who from the DMU is involved?	End User, Champion; potentially Economic Buyer (Dr. Papadopoulos) early if cost is high concern.	End User, Champion; Economic Buyer involved for approval/budget check.	End User, Champion; Economic Buyer likely only for initial institutional setup or significant expansion.
#4: Purchase Intent (Output: Qualified Prospects)	How do you qualify that the customer is ready to purchase, and how do you develop a proposal for the purchase?	Needs assessment calls (Inside Sales), clear interest post-demo/pilot, verbal commitment. Simple quote/online checkout.	Trial usage metrics, budget confirmation, specific feature needs match. Standardized quotes, potentially minor customization.	Automated qualification via trial engagement/feature usage, self- service quote generation/checkout.
	How do you close the sale and handle customer questions/objections?	Inside Sales handles objections (technical, cost), guides through purchase/procurement.	Inside Sales handles complex objections/procurement; automated FAQs/support docs handle common questions.	Primarily self-service support (knowledge base, community), automated objection handling where possible; minimal Inside Sales involvement.
	Who from the DMU is involved?	End User, Champion, Economic Buyer (final approval), potentially Procurement/IT.	End User, Champion, Economic Buyer, Procurement/IT.	End User/Champion initiates, Economic Buyer (minimal), potentially automated procurement integration.

#5: Purchase (Output: Customers)	How do you secure full commitment from the customer to purchase your product?	Signed quote/agreement, Purchase Order (PO), initial payment.	PO, completed online checkout, payment confirmation.	Completed self-service online checkout, automated invoicing/payment.
	How does your customer pay for your product? Who pays?	Credit card (End User/Champion personal or lab card), Institutional Invoice (processed by Finance upon EB/Procurement approval).	Credit card, Institutional Invoice.	Primarily Credit Card (automated billing), potentially automated invoicing for established institutional accounts.
	Who from the DMU is involved?	End User/Champion initiate; Economic Buyer approves budget; Finance/Procurement process payment.	End User/Champion initiate; Economic Buyer approves budget; Finance/Procurement process payment.	End User/Champion typically self- serves; Finance involvement minimal/automated.
#6: Loyalty (Output: Satisfied Customers)	How do you ship and install the product?	Digital delivery (account access), guided onboarding call (Inside Sales/Support).	Digital delivery, self-service onboarding tutorials/docs, optional onboarding session.	Digital delivery, fully self-service onboarding integrated into platform, automated tooltips/guides.
	How do you provide support to the customer so that they use and get the expected value out of your product?	Direct email/call support (Inside Sales/Founders), initial documentation.	Knowledge base, community forum, email support ticketing system, proactive check-ins for larger accounts.	Extensive knowledge base, active community forum, AI-powered support bots, minimal ticketed support for standard users.
	Who from the DMU is involved?	End User primarily, potentially Champion if issues arise.	End User primarily, Champion.	End User primarily.
#7: Advocacy (Output: Evangelists)	How do you encourage the customer to buy more product?	Direct discussion about team expansion/needs during check-ins (Inside Sales).	Automated emails highlighting upgrade benefits, usage-triggered prompts, Inside Sales outreach for expansion opportunities.	Automated in-app prompts for upgrades, targeted email campaigns based on usage patterns, self-service upgrade path.
	How do you encourage the customer to tell others about the product, and how do you measure whether customers	Ask for testimonials/referrals during check-ins, monitor publications citing the tool.	Implement simple referral program (e.g., credits), solicit reviews on relevant platforms, track referral codes/links, NPS surveys.	Automated referral program integrated into platform, track social mentions/citations, monitor review sites, prominent NPS surveys.

	are telling others about your product?			
	Who from the DMU is involved?	Satisfied End User, Champion.	Satisfied End User, Champion.	Satisfied End User, Champion.

2nd Draft Sales Funnel with Actions for Short Term

Funnel Stage	Actions
#1: Identification **Output: Leads**	Lead Gen: Direct outreach (Inside Sales), conference networking, initial blog posts. Watering Holes: Key conferences, relevant labs. Who: EU, Ch.
#2: Consideration **Output: Suspects**	Find Out About Options—Initial Dialogue: Personalized follow-up calls/emails, website demo requests. WoO/Triggers & Confirms General Value Prop: Project start, grant cycle alignment. Who: EU, Ch.
#3: Engagement **Output: Prospects**	Analyze Options I—Confirms Value Prop for Them: Live, tailored demos (Inside Sales), pilot program offer. Confirms Budget: Direct discussion, flexible pilot terms. Who: EU, Ch, EB (early).
#4: Purchase Intent **Output: Qualified Prospects**	Analyze Options II—Qualify & Proposal: Needs assessment call, verbal commit post-pilot. Verbal Close & Objection Handling: Inside Sales handles Q&A, addresses concerns. Who: EU, Ch, EB, IT/Proc.
#5: Purchase **Output: Customers**	Physically Acquire Product I—Secure Full Commitment, e.g., Purchase Order: Signed quote, PO collection. Pay for Product: Credit card or guided invoice process. Who: EU/Ch initiate, EB approve, Fin/Proc process.
#6: Loyalty **Output: Satisfied Customers**	Physically Acquire the Product II—Ship/Install: Digital access provision. Customer Support - Use, Get Value, Determine Value: Guided onboarding call, direct email/founder support. Who: EU, Ch (if needed).
#7: Advocacy **Output: Evangelists**	Buy More: Discuss expansion needs in check-ins. Tell Others: Directly ask for testimonials/referrals. Who: EU, Ch.

2ⁿᵈ Draft Sales Funnel with Actions for Medium Term

Stage	Actions
#1: Identification **Output: Leads**	**Lead Gen:** Content/SEO focus, targeted ads, webinars. **Watering Holes:** Online communities, blogs, webinars. **Who:** EU, Ch.
#2: Consideration **Output: Suspects**	**Find Out About Options—Initial Dialogue:** Respond to content engagement, automated email sequences. **WoO/Triggers & Confirms General Value Prop:** Publication deadlines, peer use. **Who:** EU, Ch.
#3: Engagement **Output: Prospects**	**Analyze Options I—Confirms Value Prop for Them:** Free trials, webinars, ROI calculators, case studies. **Confirms Budget:** Clear website pricing, trial period discussions. **Who:** EU, Ch, EB (budget check).
#4: Purchase Intent **Output: Qualified Prospects**	**Analyze Options II—Qualify & Proposal:** Trial usage metrics, budget confirmation. **Verbal Close & Objection Handling:** Inside Sales (complex), automated FAQs (common). **Who:** EU, Ch, EB, IT/Proc.
#5: Purchase **Output: Customers**	**Physically Acquire Product I—Secure Full Commitment, e.g., Purchase Order:** PO, completed online checkout. **Pay for Product:** Credit card, institutional invoice. **Who:** EU/Ch initiate, EB approve, Fin/Proc process.
#6: Loyalty **Output: Satisfied Customers**	**Physically Acquire the Product II—Ship/Install:** Digital access. **Customer Support - Use, Get Value, Determine Value:** Self-service onboarding, knowledge base, email tickets, proactive check-ins. **Who:** EU, Ch.
#7: Advocacy **Output: Evangelists**	**Buy More:** Automated upgrade emails, usage prompts. **Tell Others:** Simple referral program, solicit reviews, NPS. **Who:** EU, Ch.

Please describe the major differences between your plans for the short-term and the medium-term sales funnels:

The main shift is from high-touch, manual processes (Inside Sales demos, direct support) focused on learning and validation in the short term, towards more scalable, automated methods (content/SEO lead gen, self-service trials, knowledge base support) in the medium term. Medium term introduces systematization like automated emails, trial metrics for qualification, and formal referral programs, aiming for efficiency and positive unit economics while Inside Sales becomes more targeted.

2ⁿᵈ Draft Sales Funnel with Actions for Long Term

Stage	Actions
#1: Identification **Output: Leads**	**Lead Gen:** SEO/Organic content dominance, strong referrals. **Watering Holes:** Established communities, academic portals. **Who:** EU, Ch (referral).
#2: Consideration **Output: Suspects**	**Find Out About Options—Initial Dialogue:** Self-service trial signup, automated inquiry response. **WoO/Triggers & Confirms General Value Prop:** Budget cycles, scaling needs, new features. **Who:** EU, Ch.
#3: Engagement **Output: Prospects**	**Analyze Options I—Confirms Value Prop for Them:** Self-service trials, automated demos, extensive docs/reviews. **Confirms Budget:** Transparent website pricing, automated tier recommendations. **Who:** EU, Ch, EB (minimal).
#4: Purchase Intent **Output: Qualified Prospects**	**Analyze Options II—Qualify & Proposal:** Automated qualification via trial usage. **Verbal Close & Objection Handling:** Self-service support, automated handling, minimal Inside Sales. **Who:** EU/Ch initiate, EB (minimal).
#5: Purchase **Output: Customers**	**Physically Acquire Product I—Secure Full Commitment, e.g., Purchase Order:** Completed self-service checkout. **Pay for Product:** Primarily automated credit card billing. **Who:** EU/Ch self-serve, Finance (minimal).
#6: Loyalty **Output: Satisfied Customers**	**Physically Acquire the Product II—Ship/Install:** Digital access. **Customer Support - Use, Get Value, Determine Value:** Fully self-service onboarding, extensive knowledge base, community, AI bots. **Who:** EU.
#7: Advocacy **Output: Evangelists**	**Buy More:** Automated in-app upgrade prompts, targeted campaigns. **Tell Others:** Integrated referral program, automated review requests, social monitoring, NPS. **Who:** EU, Ch.

Please describe the major differences between your plans for the medium-term and the long-term sales funnels:

The shift from medium to long term focuses on maximizing automation and efficiency across the entire funnel. Lead generation relies heavily on organic reach and referrals, minimizing paid acquisition. Engagement and purchase become almost entirely self-service. Support transitions to automated/community-driven models, with Inside Sales reserved only for very high-value strategic accounts. The emphasis is on scalability, LTV maximization through automated retention/upsell, and leveraging network effects.

Techniques and Actions to Maximize Yield Rate at Each Stage

Short Term: Summary of Techniques and Actions to Maximize Yield			
Stage in Funnel (starting at top)	**Technique(s)**	**How to Maximize Conversion**	**Done by Who? When?**
#1 – Identification (leads)	Direct Outreach, Conference Networking	Highly personalized messaging targeting specific pain points, immediate post- conference follow-up.	Inside Sales/Founders, Ongoing
#2 – Consideration (suspects)	Personalized Demos, Pilot Programs	Tailor demo to prospect's research, offer low-risk pilot to prove value directly.	Inside Sales, During Initial Calls
#3 – Engagement (prospects)	Value Prop Reinforcement, Objection Handling	Clearly articulate QVP (Step 8), proactively address anticipated concerns (cost, tech), build trust.	Inside Sales, During Demo/Pilot
#4 – Purchase Intent (qualified prospects)	Procurement Support, Clear Next Steps	Guide user through institutional process, provide needed docs quickly, maintain communication.	Inside Sales, Post-Commitment
#5 – Purchase (customers)	Simple Checkout/Invoice Process	Offer easy payment (CC), clearly guide institutional invoice process, follow up on payment.	Inside Sales/Ops, At Closing
#6 – Loyalty (satisfied customers)	Guided Onboarding, Proactive Support	Ensure smooth start, check in to confirm value realization, be highly responsive to issues.	Inside Sales/Support, Post-Purchase
#7 – Advocacy (evangelists)	Direct Ask for Feedback/Referrals	Leverage positive relationship during check-ins to request testimonials or introductions.	Inside Sales/Founders, Ongoing

Medium Term: Summary of Techniques and Actions to Maximize Yield

Stage in Funnel (starting at top)	Technique(s)	How to Maximize Conversion	Done by Who? When?
#1 – Identification (leads)	SEO/Content Marketing, Webinars	High-quality content addressing specific researcher needs, clear calls-to- action, engaging webinar topics.	Marketing Team, Ongoing
#2 – Consideration (suspects)	Automated Email Nurturing, Targeted Demo Offers	Segment leads, deliver relevant content sequences, offer demos aligned with expressed interest/content consumed.	Marketing Automation/Inside Sales, Ongoing
#3 – Engagement (prospects)	Free Trials, Case Studies, ROI Calculators	Provide robust trial experience, showcase success with similar users, quantify potential value clearly.	Product/Marketing/Inside Sales, Trial Phase
#4 – Purchase Intent (qualified prospects)	Trial Conversion Nudges, Streamlined Quotes	Use in-app/email prompts based on trial usage, simplify quoting process, offer standard configurations.	Marketing Automation/Inside Sales, End of Trial
#5 – Purchase (customers)	Online Checkout Optimization, Clear Invoicing	Make self-service payment easy and secure, ensure institutional invoices are clear and timely.	Web/Ops Team, At Closing
#6 – Loyalty (satisfied customers)	Self-Service Onboarding, Knowledge Base, NPS	Provide comprehensive resources for self-help, solicit feedback via NPS to identify issues proactively.	Support/Product Team, Post-Purchase
#7 – Advocacy (evangelists)	Referral Program, Review Solicitation	Offer incentives for referrals, make it easy to share, prompt happy users (high NPS) for reviews/testimonials.	Marketing/Product Team, Ongoing

Long Term: Summary of Techniques and Actions to Maximize Yield

Stage in Funnel (starting at top)	Technique(s)	How to Maximize Conversion	Done by Who? When?
#1 – Identification (leads)	Organic Growth (SEO, Referrals), Brand Authority	Maintain strong SEO, actively promote referral program, build reputation as thought leader through content.	Marketing/Community Team, Ongoing
#2 – Consideration (suspects)	Self-Service Trial/Demo, Automated Inquiry Mgmt	Offer immediate access to trial/demo, use AI bots/forms to answer common questions instantly.	Product/Web Team, Automated Systems, Ongoing
#3 – Engagement (prospects)	In-Trial Guidance, Peer Reviews, Community Forum	Use tooltips/guides within trial, leverage social proof (reviews, testimonials), foster active user community support.	Product/Community Team, Automated Systems, Ongoing
#4 – Purchase Intent (qualified prospects)	Automated Qualification, Self-Service Checkout	Trigger conversion prompts based on high trial engagement, provide seamless path to purchase without sales interaction.	Product/Web Team, Automated Systems, End of Trial
#5 – Purchase (customers)	Automated Billing/Invoicing	Fully automate payment processing and recurring billing, integrate with common institutional payment systems if possible.	Ops/Finance Systems, Automated, At Closing/Renewal
#6 – Loyalty (satisfied customers)	Automated Support, Proactive Value Communication	Utilize AI support bots, extensive KB, send automated reports/tips showing achieved value & new features.	Support/Product Automation, Ongoing
#7 – Advocacy (evangelists)	Integrated Referral Features, Automated Campaigns	Embed referral prompts in-app, run automated campaigns targeting satisfied segments for reviews/referrals.	Product/Marketing Automation, Ongoing

What are your three biggest risk factors in your go-to-market plan? How do you intend to mitigate those risks? What metrics will you use to monitor them and intervene as needed? (Remember, things never go exactly the way you want them to or you plan them!)

1. Risk Factor #1 and Mitigation Plan:

Failure to achieve projected customer retention rates, leading to lower LTV than needed to support COCA. Mitigation: Intense focus on onboarding, demonstrating value quickly (aligning with QVP), proactive support, and continuously improving the product based on user feedback.

Metrics to Watch:

Monthly/Annual Churn Rate, Net Promoter Score (NPS), Product Engagement Metrics.

Potential Intervention Strategy:

Implement targeted retention campaigns for at-risk users, improve onboarding materials/process, prioritize feature development addressing reasons for churn, adjust pricing/tier value if necessary.

2. Risk Factor #2 and Mitigation Plan:

Inability to scale lead generation cost-effectively through Internet Sales channels as planned in Medium/Long term. Mitigation: Continuously test and optimize SEO/content strategies, experiment with limited paid channels, focus heavily on building referral/WOM channels early.

Metrics to Watch:

Cost Per Lead (CPL) by channel, Lead-to-Customer Conversion Rate by channel, Website Traffic/Organic Search Rankings.

Potential Intervention Strategy:

Shift marketing budget between channels based on ROI, refine content strategy, invest more in referral program incentives, potentially increase reliance on targeted Inside Sales for specific segments if needed.

3. Risk Factor #3 and Mitigation Plan:

Slow adoption or resistance within academic institutions due to perceived risk, integration challenges, or complex procurement processes. Mitigation: Build strong case studies/testimonials early, provide clear documentation for IT/security review, offer pilot programs, actively support champions navigating internal processes.

Metrics to Watch:

Sales Cycle Length (especially stages # 3-5), Trial-to-Paid Conversion Rate, Feedback on onboarding/integration ease.

Potential Intervention Strategy:

Develop specific materials for procurement/IT, offer dedicated integration support, simplify trial/pilot setup, adjust pricing/licensing models (e.g., pilot site licenses) to ease initial adoption.

Example

GearUp was a class project by Anusha Paliwal, Jillian Ardrey and Monique Guimond, all MIT Sloan MBAs from the class of 2017. They are all avid outdoors types, and they developed a plan for a new venture that would offer an annual subscription service to provide active young traveling professionals with high-quality ski, snowboard, camping and backpack gear delivered to them when they went on vacations. Here is how they explained how they would maximize conversion between stages of the funnel, and how they defined their milestones for moving from the short term to medium term to long term sales strategies.

Sales & Marketing Efforts (1)

Technique	How Maximize Conversion?	Done by Whom, When?
Inbound marketing	Create content (blog, video) about how to travel and get outside cheaply, best destinations to add onto your work trip, destinations close to major airports, teaching outdoor skills – which target market will be searching. Buy relevant Google search terms. Conduct continuous A/B testing with content and search terms to optimize.	Marketing personnel Short, medium & long term
SEO addressing pain point	Buy Google search terms to capture potential customers searching for solutions to "how to pay less to travel with gear" or "rentals with more selection and better quality" – as our product is a solution for their pain point. Conduct continuous A/B testing to optimize.	Marketing personnel Short, medium & long term
Social media marketing	Connect inbound marketing content to Facebook & Twitter company pages and place ads on Facebook. A/B testing to optimize Facebook ads.	Marketing personnel Short, medium & long term
Articles and ads in blogs / Online magazines	Work with well-known outdoor, travel and traveling professional bloggers, as well as key magazines in these spaces, to get coverage through posts/articles. Advertise on sites of key magazines. Maximize conversion by proper targeting of sites where key user spends time.	Marketing personnel Founders (for interviews) Short, medium & long term
Field marketing	Push unique value-add of our product and engage with potential customers for advice on product iteration and optimization. Buy booths at huge outdoor events (e.g. Warren Miller premier, ski expos) and sponsor select social events (e.g. beer, music fests) in key cities and outdoor destinations. Attend relevant Meetup and club events in key cities.	Founders (Short term, as interaction and feedback from customers critical at beginning) Marketing personnel (Medium & long term) Don't plan to ever conduct enough field work to justify hiring full-time salesperson

Sales & Marketing Efforts (2)

Technique	How Maximize Conversion?	Done by Whom, When?
Key travel partnerships (e.g. Airbnb, ski resorts, Expedia)	Partner with sites where potential customers go to book lodging, etc for trips to become part of their booking process and/or advertise. Maximize conversion by partnering with the largest players where most of our potential customers book their travel. Non-hands on marketing technique which can yield strong results but will take capital, so not good for short term. Need to run pilot tests to prove ROI for this expensive marketing option.	Founders (critical relationship requiring high-touch, high level support) Medium & long term
Special pricing during windows of opportunity	Will have discounted pricing structures in place in the short term to drive growth. Price discounts will be marketed the month before each sport season starts, the holiday season, and when gear typically goes on sale at the end of each season and will require a person to book within 24 hours of receiving promo code to get discount. We will also have special pricing for our gear shop (selling discounted gear) spread via email marketing to current customers once we reveal this product feature in 2017.	Marketing personnel Short & medium term Long term, should be industry standard and not need to discount; however, re-evaluate monthly based on competition.
Ambassador Program	Current subscribers get account credits or can be entered to win trips for every friend that they get to sign up for our subscription service with their referral code. We will then contact top adopters of our referral service and provide them with marketing collateral and invite them to help us market to local Meetup groups and clubs; they will get credit for everyone they provide their referral code to in these groups who subscribes to our product. This incentivization will accelerate WOM and increase conversion of those who hear about our product. Will increase % of people participating in program and referring friends through email marketing campaigns.	Marketing personnel Short, medium & long term
User Feedback Program (for optimal product selection and operations)	Critical to ensure that our Core is maintained: that we can reliably provide our customers with the gear they want and deliver it when they want it. If we don't focus on continual iteration based on customer feedback, our churn rate will rise. Will increase % of people participating through email marketing campaigns.	Marketing personnel Short, medium & long term

Evolving Sales Process

	Short Term	Medium Term	Long Term
Phase Length	Year 1	Year 2	Year 3 and onward
Phase Goal	This phase will continue until Word of Mouth becomes significant and product selection/delivery method is optimized and proven (our core is solid). Then we will move from demand creation to demand fulfillment in the Medium Term.	This phase will focus on acquiring new members without direct involvement through pushing our Ambassador Program. We will continue our User Feedback Program through all phases to ensure our core stays strong. We will field interview requests and contribute to articles written about us by key media. We will roll out our gear shop (for buying discounted gear) this year and will focus on converting current subscribers to purchasers.	This phase will focus on acquiring new members without direct involvement through pushing our Ambassador Program and leveraging strategic partnerships. We will continue our User Feedback Program through all phases to ensure our core stays strong. We will still drive some basic marketing. We will re-evaluate our product vs. competition on a continual basis and expand into new offerings.

This has been another intense chapter but you are building up great knowledge of your business so not only you know if it is worth doing but you also have a plan to make it great. Just as importantly, you are understanding the underlying drivers so you can intelligently and quickly identify and make adjustments once the business starts. It is hard work but it will pay off. The only thing harder is trying to launch a new product and not having a good plan. That is not only more work in the end, it is much more frustrating. Hang in there, we are about to pull it all together and launch this rocket ship.

Step 19: Estimate the Cost of Customer Acquisition (COCA) Worksheets

Worksheets

Assumptions for COCA Estimation

    a. What was the time interval you defined for the following phases in Step #18, Worksheets Section, Item II?

        1. Short Term: First 12 Months (Year 1)

        2. Medium Term: Months 13-24 (Year 2)

        3. Long Term: Months 25+ (Year 3 and beyond)

Total Sales and Marketing Expenses List

List the expected sales and marketing expenses, and their costs. This input will be used when estimating the cost of customer acquisition.

Sales Expenses	Short Term	Medium Term	Long Term
Inside Sales Salaries/Commissions	€160,000	€80,000	€40,000
CRM & Sales Tools	€5,000	€5,000	€5,000
Total Sales Expenses (Estimate)	**€165,000**	**€85,000**	**€45,000**

Marketing Expenses	Short Term	Medium Term	Long Term
Content Marketing & SEO	€15,000	€35,000	€30,000
Conferences & Events	€15,000	€5,000	€0
Marketing Tools (Analytics, SEO etc.)	€5,000	€10,000	€10,000
Online Ads / Webinars	€0	€20,000	€5,000
Referral Programs / Automation	€0	€0	€10,000
Total Marketing Expenses (Estimate)	**€35,000**	**€70,000**	**€55,000**

Estimate the Cost of Customer Acquisition (COCA)	Time Period (default is year but can change)				
	Year 1	Year 2	Year 3	Year 4	Year 5
New Customers forecasted	50	500	2,000	5,000	10,000
All Sales expenses for period	€165,000	€85,000	€45,000	€45,000	€45,000
All Marketing expenses for period	€35,000	€70,000	€55,000	€55,000	€55,000

Total Marketing & Sales expenses for period	€200,000	€155,000	€100,000	€100,000	€100,000
COCA for the period	**€4,000**	**€310**	**€50**	**€20**	**€10**

Convert Estimation into Short, Medium and Long Term

Understanding these numbers are not precise, create a range you are comfortable with for the short, medium and long term (as defined in I(c) above) from the worksheet above.

1. Short Term COCA Range: **€3,500 - €5,000**
2. Medium Term COCA Range: **€250 - €400**
3. Long Term (steady state) COCA Range: **€10 - €75**

#	Item	Effect	Action Possible to Decrease	Risk
	Key Drivers of COCA and Ways to Decrease It			
1	Inside Sales Staffing	High (Initial)	Transition efficiently to Internet Sales, optimize processes with CRM.	Lower conversion rates if Internet Sales underperform early; loss of direct customer feedback insight.
2	Content Marketing & SEO Investment	Medium	Focus on high-ROI content themes, leverage user contributions, enhance SEO techniques.	Slow organic growth if content misses mark or SEO is ineffective; dependency on search algorithms.
3	Conference & Event Spending	Medium (Short)	Prioritize virtual events, select few high-impact physical events with clear ROI goals.	Reduced initial visibility and networking effects; potentially missing key early influencers.
4	Marketing & Sales Tool Subscriptions	Low-Medium	Utilize cost-effective tools initially, negotiate vendor pricing, maximize tool usage.	Reduced operational efficiency if tools are inadequate; time lost migrating tools later.
5	Customer Onboarding & Support Efforts	Medium	Develop robust self-service resources (docs, tutorials, community), use AI support aids.	Poor initial user experience if self-service fails; higher churn if support feels insufficient.

#	Item	Effect	Action Possible to Decrease	Risk
	Example: Key Drivers of COCA and Ways to Decrease It			
1	Field Sales	High	Decrease number and increase Inside sales	High in short term – need to see how market adopts product; lack of direct sales people will definitely slow adoption
2	Field Sales internationally	High	Use third-party resellers	Low in short term/High in long term because we don't have direct connection with customers
3	Advertising Budget	Medium	Build up in-house social media and other capability	Medium but probably worth it in long term
4	Field and Inside Sales	Medium	Supplement and reduce numbers with stronger Internet sales investment	Medium in short term and if works, low in long term
5	Tradeshows	Medium	Eliminate and find a guerilla market approach at 10% of expense	Medium in that our customers expect us to be at these shows and it gives our company credibility; Still something can probably be done here

Comparison of LTV and COCA Over Time

Label the axes with the appropriate numbers and units, and then plot the LTV and COCA on the graph based on your calculations from this step and from Step 17, Calculate the Lifetime Value (LTV) of an Acquired Customer. Draw a line to connect the three LTV points, and another line to connect the three COCA points.

(Editable version of the graphic below is available in additional Powerpoint document)
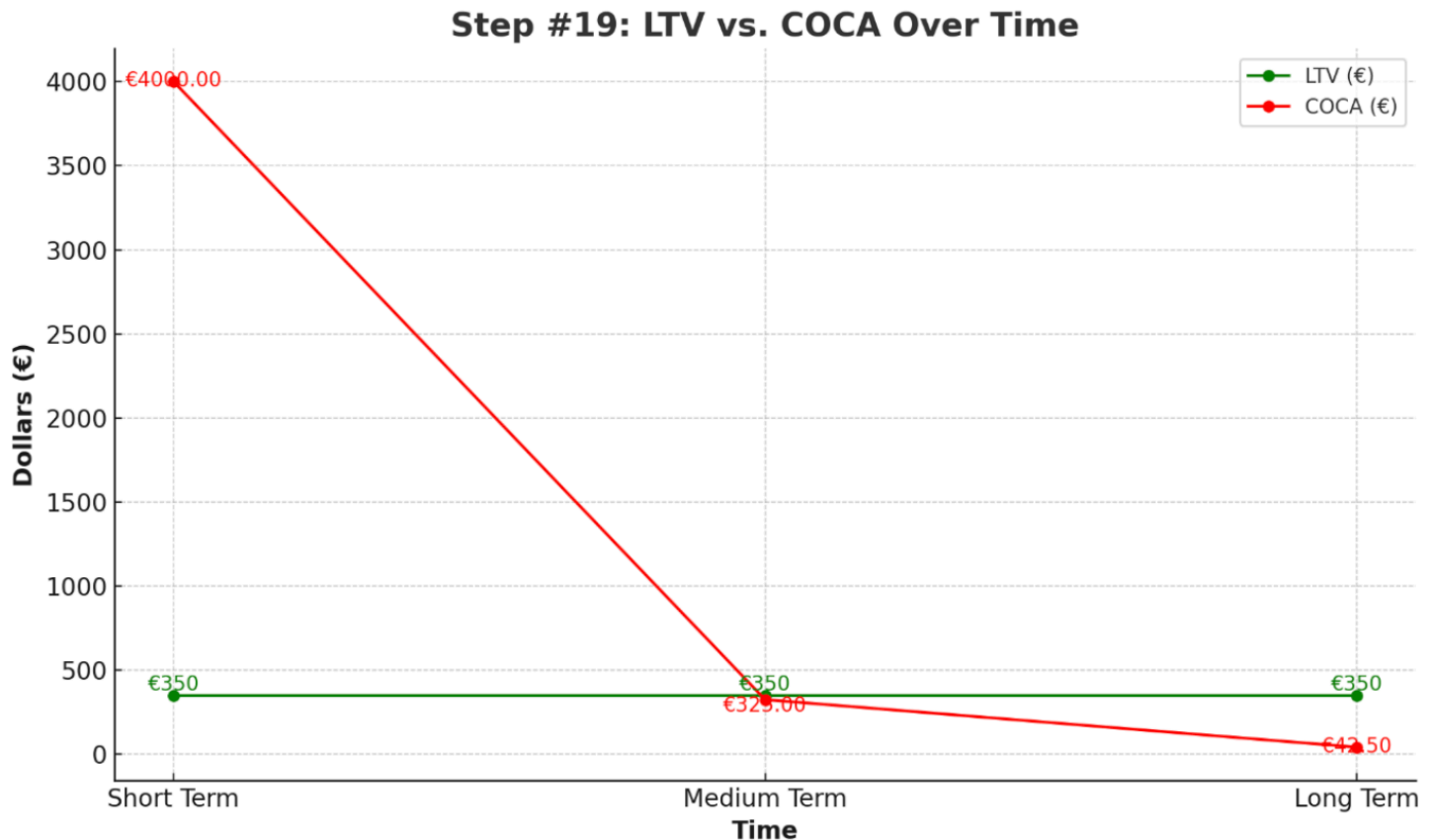
Overall Interpretation of Unit Economics – Bringing it All Together

Now you have done all the hard work, let's pull it together and consolidate what we know and what we should do now.

A. **Basic 3X Test:** Is your LTV more than 3 times your COCA for your long-term time period? This is essential because COCA only deal with marketing and sales. The LTV must produce enough excess profit to also pay for research and development (R&D) as well as general and administrative (G&A) costs. The R&D costs can be significant. The 3X rule of thumb was created for software as a service companies, so the specifics of your industry may require a higher ratio in order to be successful. Does your LTV to COCA ratio clear the basic 3X threshold by a little, a reasonable amount, or a lot?
Yes, our long-term LTV (€350) is substantially more than 3 times our estimated long-term COCA (around €42.50 midpoint).
The LTV to COCA ratio is approximately 8.2X (€350 / €42.50).

This clears the basic 3X threshold by a significant amount, providing a strong initial signal for potential long-term profitability.

B. **R&D Factor:** Is your R&D expense going to be above or below that of an average software as a service company? For instance, a biotech company's R&D expenses will be much higher. If so, then your ratio needs to be higher to compensate for this. For biotech companies it can be over 100x and for consumer goods, it can be less. What is your situation and do you feel comfortable there will be enough profit to cover R&D expenses? (G&A expenses fluctuate as well if there is a regulatory component but they do not fluctuate as much as R&D so we will focus on R&D as the proxy for G&A as well):

Our R&D expense is expected to be significantly above average for a typical SaaS company due to the complexity of developing and maintaining a self-improving, multi-agent AI system requiring ongoing research. The approximate 8X LTV to COCA ratio provides a better buffer than the standard 3X.
However, comfort level is moderate; sustained high R&D investment will require careful financial management and potentially exceeding this 8X ratio.
Profitability hinges on managing these R&D costs effectively alongside achieving the projected LTV and COCA figures.

Adjustments May Be Necessary But You Are Ready: There is a good chance that your initial unit economics don't work. Don't overreact and don't underreact. You are prepared now to go back and iterate. Go back and make adjustments like you started to list in the Key Drivers of COCA worksheet. Make adjustments until the numbers work. It is great to be passionate and that is essential, but well thought-out numbers have a stubborn way of telling the truth in business. Don't ignore them. If in the end, you can't make the unit economics work, you won't have a sustainable business no matter how hard you try. But most of the time you can fix it now that you are equipped with this knowledge.

Once you have iterated and the plan works, like in Step 18, list the top 3 risk factors for the unit economics and how you plan to deal with them below:

1. **COCA Risk Factor #1 and Mitigation Plan:** Long-term COCA remains high if Internet Sales fail to scale cost-effectively. Mitigation involves rigorous testing/optimization of online channels and building a strong referral program.

   Metrics to Watch: Cost Per Lead (CPL), Lead Conversion Rate by channel, Referral Rate.

   Potential Intervention Strategy: Reallocate marketing spend based on channel ROI, hire SEO/content specialists, or retain targeted Inside Sales longer for key segments if necessary.

2. **COCA Risk Factor #2 and Mitigation Plan:** LTV is lower than projected due to poor customer retention/churn. Mitigation includes enhancing onboarding, proving value quickly, proactive support, and iterative product improvements based on feedback.

   Metrics to Watch: Churn Rate, Net Promoter Score (NPS), Product Engagement Score.
   Potential Intervention Strategy: Implement loyalty/retention programs, dedicate customer success resources, analyze and address specific churn drivers, potentially adjust pricing tier value.

3. **COCA Risk Factor #3 and Mitigation Plan:** High R&D costs erode profitability despite a healthy LTV/COCA ratio. Mitigation requires strict R&D budget discipline, prioritizing features with clear ROI, and exploring R&D grants or partnerships.

Metrics to Watch: R&D Spend as % of Revenue, New Feature Adoption Rates.
Potential Intervention Strategy: Re-prioritize the R&D roadmap, explore leaner technical solutions, or seek external funding specifically earmarked for significant R&D initiatives.

If you are an engineer like me, you are now getting to the fun part. Now we can build the product with confidence that it can be the basis of a great company. That being said, it all makes sense but we are not sure until it really happens. Now we move to the design and build stage in Step 20, Identify Key Assumptions.

Step 20: Identify Key Assumptions

Worksheet

#	Assumption (in prioritized order)	Related Step(s) from the 24 Steps	Risk Level	Potential Impact if Assumption is Wrong
1	Core Value Realization: Users consistently achieve significant research acceleration (e.g., 50%) and quality improvements.	8, 10, 11	High	Core value proposition is invalid; low demand, high churn, business failure.
2	Market Willingness to Pay: Target academic researchers and institutions will pay the projected price (€250-€1000/user/year).	4, 16, 17	High	Revenue targets missed; LTV insufficient; unit economics fail; inability to fund operations.
3	Achievable Long-Term COCA: The Cost of Customer Acquisition can be driven down to the target range (€10-€75) via internet sales.	18, 19	Medium-High	Unit economics fail (COCA > LTV/3); unsustainable business model; inability to scale profitably.
4	Customer Retention Rates: Projected annual retention rates (starting 80%, declining to 50%) are achievable.	17	Medium	LTV calculations are inaccurate/overstated; unit economics fail; revenue forecasts missed.
5	Technical Feasibility & Scalability: The complex self-improving AI system can be built, maintained, and scaled reliably.	7, 10	Medium-High	Product fails to deliver value; high operational costs; inability to meet user demand or performance needs.
6	AI Self-Improvement Efficacy: Continuous learning from real-world research data effectively improves AI performance	10	Medium	Core differentiator weakens; value proposition diminishes over time; fails to maintain competitive edge.
7	Sufficiency for R&D Costs: The projected LTV/COCA ratio (~8X) is adequate to cover high ongoing AI research & development costs.	19	Medium	Profitability issues despite good unit economics; inability to fund necessary innovation; cash flow problems.
8	Competitive Moat Durability: The learning-based Core provides a lasting advantage against competitors.	10, 11	Medium-Low	Increased competition erodes market share and pricing power; lower long-term profitability.

9	Champion Effectiveness: Academic Champions can effectively navigate DMUs and secure budget/approval for adoption.	12, 13	Medium-Low	Slower sales cycles; lower conversion rates within institutions; difficulty penetrating the market.
10	Workflow Integration Ease: The AI tool integrates smoothly into existing researcher digital workflows without major friction.	6, 13	Low-Medium	High initial friction discourages adoption; increased support costs; slower value realization for users.

This is in many ways a "catch your breath and digest what you have produced" step. It does not involve a lot of new work but it is important to set yourself up for the next step as well which is to test these assumptions. It is nice to have a step that is a bit easier, isn't it? You are getting close to the end now – hang in there!

Disciplined Entrepreneurship Workbook

Step 21: Test Key Assumptions

Worksheet

#	Empirical Test (in order from most important to least important, based on the risk levels of the related assumption(s))	Related Assumption(s)	Resources Required for Test	What Outcome(s) Would Validate Your Assumption(s)?
1	**MVP Value Pilot:** Run a pilot program with 10-15 target researchers (identified in Step 9) using a Minimum Viable Product (MVP) focused on core workflow automation (e.g., idea generation, experiment planning). Measure time saved and gather qualitative feedback on the usefulness of AI suggestions.	#1 (Core Value Realization)	- Developed MVP focusing on 2-3 core agents. - Time commitment from 10-15 pilot users. - Team time for onboarding, support, and data analysis. - Survey and interview tools.	- Pilot users report an average research task time reduction of at least 30%. - Majority (>70%) find the AI-generated suggestions valuable and relevant to their work. - Positive qualitative feedback on improved workflow efficiency.
2	**Pricing Tier Test:** Offer 2-3 distinct subscription tiers (e.g., Basic €250/yr, Pro €500/yr, Premium €1000/yr) during the MVP pilot or an early access program. Track sign-up rates, tier selection, and gather feedback on perceived value for money.	#2 (Market Willingness to Pay)	- Clear definition of features per tier. - Pricing/signup page integrated with MVP/website. - Payment processing capability. - Pilot/early access users.	- At least 10% of pilot/early access users convert to a paid tier. - Observable distribution across tiers (not everyone defaults to cheapest). - Feedback indicating the price aligns with the perceived value provided by the features in each tier.
3	**MVP Technical Validation:** Build and deploy the core MVP system, including the Manager Agent orchestrating 2-3 specialized agents (e.g., Idea Generation, Experiment Planning, Review). Test reliability and basic performance under load with pilot users	#5 (Technical Feasibility & Scalability)	- Engineering team time (design, build, deploy). - Cloud infrastructure (servers, databases). - MVP code base. - Pilot user activity	- MVP operates reliably throughout the pilot program with minimal critical failures. - Core features function as designed for the pilot users. - System performance (e.g., response times) is acceptable for pilot usage levels.

4	**Initial COCA Tracking:** Launch initial lead generation activities outlined in the Short-Term plan (Step 18 - e.g., targeted content, conference outreach). Meticulously track all associated sales/marketing expenses and the number of qualified leads/customers generated.	#3 (Achievable Long-Term COCA)	- Marketing/Sales personnel time. - Budget for content creation, conference attendance, tools (CRM). - Tracking system for leads and expenses.	- Early COCA figures (Total Spend / New Customers) show a plausible path towards the Medium-Term goal (€250-€400), even if starting high (e.g., <€5000 initially). - Lead quality is sufficient for conversion.
5	**Retention Intent Survey:** Survey pilot/early access users towards the end of their initial period (e.g., 3-6 months) about their likelihood to renew their subscription (if paid) or continue using the platform (if free trial). Ask about perceived ongoing value.	#4 (Customer Retention Rates)	- Survey tool. - Time commitment from pilot/early users. - Team time to analyze results.	- Majority (>60%) of users indicate a high likelihood to renew/continue using the platform. - Users can articulate ongoing value they expect or have received. - Reasons for potential churn are identified and seem addressable.
6	**Core Learning Mechanism Test:** Implement the basic reinforcement learning loop within the MVP. Track specific metrics related to AI suggestion quality or task efficiency (e.g., user acceptance rate of suggestions, time-to-completion for specific tasks) over the pilot duration to observe any measurable changes.	#6 (AI Self-Improvement Efficacy)	- Implemented learning algorithm in MVP. - Defined metrics for AI performance. - Data logging and analysis capability. - Sufficient pilot usage data.	- Measurable positive trend in the chosen performance metrics over the pilot period. - Qualitative user feedback suggests the system is becoming more helpful over time. - Evidence that the learning mechanism is functioning, even if improvement is gradual.
7	**Integration Feedback:** During the MVP pilot, actively solicit feedback from users on how easily Cogency AI integrates with their existing tools and workflow (e.g., data import/export, compatibility with common software like code editors, reference managers).	#10 (Workflow Integration Ease)	- Pilot users' time for feedback. - Specific survey questions or interview prompts about integration. - Team time for analysis.	- Majority (>70%) report minimal friction integrating the MVP into their workflow. - Key integration points identified are feasible to address. - No major workflow compatibility issues are discovered.

#				
8	**Competitive Feature Comparison:** Based on user feedback from the MVP pilot and ongoing market research, compare Cogency AI's perceived strengths and weaknesses against key competitors (Step 11) specifically regarding the Core value proposition (Step 10)	#8 (Competitive Moat Durability)	- Pilot user feedback data. - Updated competitor analysis. - Team time for synthesis.	- Users consistently identify unique value in Cogency AI's adaptive/learning approach compared to alternatives. - Core differentiation remains clear and valued by target users. - Few users switch to competitors during/after pilot due to feature gaps related to the core.
9	**Champion Identification & Feedback:** In institutional pilots, identify potential Champions (Step 12) and interview them about their experience advocating for the tool internally and the perceived ease/difficulty of navigating the DMU/procurement process.	#9 (Champion Effectiveness)	- Access to pilot users within institutions. - Ability to identify potential champions. - Team time for interviews/analysis.	- Champions report successfully communicating the value proposition internally. - Obstacles encountered in the DMU process seem surmountable with support. - Champions express confidence in securing budget/approval with appropriate justification.
10	**Financial Model Sensitivity Analysis:** Refine the financial model using initial data from COCA tracking (Test #4) and pricing tests (Test #2). Run sensitivity analysis to see how variations in R&D spending impact profitability under the LTV/COCA ratio.	#7 (Sufficiency for R&D Costs)	- Initial financial model (Steps 17, 19). - Early COCA and revenue data. - Spreadsheet software. - Team time for analysis.	- Sensitivity analysis shows profitability remains achievable even with R&D costs moderately higher than baseline estimates. - Key financial drivers (retention, price, COCA) identified allow for focused optimization efforts.

Results from Testing Key Assumptions			
#	**What did you learn from the test?**	**Did the test validate your assumption? (Yes, No, or Not Knowable At This Point)**	**What will you do as a result of this test? (e.g. revisions to work done in previous steps, additional testing of assumptions, etc.)**
1	Pilot users reported average time savings closer to 20-25%, not 50%. AI suggestions were valued for specific tasks (e.g., initial brainstorming) but less trusted for complex experiment design at this stage. Usefulness varied significantly by research field.	No (Partially - value exists, but less than hypothesized initially)	- Revise Value Proposition (Step 8) to reflect more realistic time savings (e.g., "up to 25%"). - Focus MVP development (Step 7) on the specific tasks where AI proved most valuable. - Conduct further testing

			with refined features targeting specific research fields.
2	Very few users converted to paid tiers (€500+). Most opted for the lowest tier (€250) or felt the MVP didn't justify the cost yet. Feedback strongly indicated price sensitivity and need for clearer ROI demonstration at the MVP stage.	No	- Revise initial Pricing Framework (Step 16): Lower entry price point significantly for early adopters (e.g., €150/yr). - Redesign tiers based on features users valued most in the pilot. - Focus sales messaging (Step 18) on demonstrating tangible ROI even with the MVP.
3	The MVP core system functioned for pilot users, but experienced occasional crashes under heavy use. Agent coordination required manual adjustments, and performance slowed with complex requests. Basic feasibility confirmed, but reliability and scalability need work.	Yes (Partially - Feasible, but needs significant improvement)	- Prioritize engineering efforts on MVP stability and performance optimization. - Refine inter-agent communication protocols (revise aspects of Step 7 spec). - Plan for more robust infrastructure scaling before wider release.
4	Initial COCA tracking showed costs are high (around €4,500 per acquired pilot user), largely driven by direct outreach time. Content marketing efforts generated few qualified leads initially. The path to Medium Term COCA goals is unclear.	Not Knowable At This Point (Trending poorly)	- Refine target audience definition (Step 3) and messaging based on pilot feedback. - Experiment with different content marketing angles and channels. - Analyze lead quality more closely to optimize outreach efforts. - Continue tracking closely.
5	Survey results indicated moderate intent to continue using (around 55% high likelihood). Users saw potential but cited MVP limitations and pricing concerns as reasons for hesitation. Ongoing value needs to be more clearly demonstrated.	No (Retention potential lower than initially hoped)	- Revise LTV projections (Step 17) using lower retention estimates. - Prioritize MVP features that deliver clear, ongoing value. - Develop better onboarding (revise Step 13/18) to ensure users quickly see benefits. - Address pricing concerns (see Test #2 result).
6	Measurable improvement in AI performance was difficult to confirm within the short pilot using basic metrics. The learning mechanism ran, but impact wasn't obvious to users or clearly trackable with limited data.	Not Knowable At This Point	- Refine the learning algorithm and data collection strategy. - Develop more sophisticated metrics to track AI improvement over longer periods. - Set realistic expectations about the speed of visible self-improvement. - Continue testing in subsequent releases.
7	Users reported moderate integration friction, particularly with data import/export formats and connecting to specific analysis software. No major blockers, but several "quality of life" improvements were requested for smoother workflow.	Yes (Partially - No major issues, but needs refinement)	- Prioritize development of requested import/export features. - Investigate APIs or plugins for commonly used research software. - Update Full Life Cycle Use Case (Step 6) and Product Spec (Step 7) to reflect integration improvements.
8	Users confirmed the *concept* of adaptive AI was unique but felt the MVP didn't fully deliver on this promise yet compared to established	Yes (Concept validated, execution needs work)	- Double down on developing the self-improvement features (Core - Step 10) to make the differentiation tangible. - Refine competitive

	(though static) tools for specific tasks. The potential moat exists but isn't strongly established by the MVP alone.		positioning messaging (Step 11) to focus on future potential while acknowledging current MVP capabilities. - Gather more specific competitive feedback.
9	Champions were identified in pilots. They reported enthusiasm for the potential but faced challenges explaining the nascent AI's value vs. established tools to PIs (Economic Buyers). Navigating procurement required significant unforeseen effort.	Yes (Partially - Champions exist, but process is hard)	- Develop specific materials (ROI calculators, case studies) to help Champions justify the tool to Economic Buyers (revise Step 12/13). - Create templates/guides to simplify procurement navigation (revise Step 18 plan). - Provide dedicated support for institutional pilots.
10	Sensitivity analysis using initial high COCA and lower potential revenue/retention showed the model is very sensitive to these factors. Achieving profitability requires aggressive COCA reduction and meeting revised LTV targets, leaving less buffer for high R&D initially.	Yes (Model confirmed sensitivity)	- Re-evaluate R&D roadmap prioritization: Focus on features driving retention and value perception near-term. - Aggressively pursue COCA reduction strategies (see Test #4 result). - Update overall financial projections and funding strategy based on revised unit economics.

After having completed these two steps, you have de-risked your product at the level of individual assumptions as much as you reasonably can. This accomplishment does not mean that when all the assumptions are put into one product that the fully assembled solution is assured of being successful in the market. In addition, there are some assumptions that will never be able to be fully tested until there is a product and it is put into production. That testing comes in the next two steps.

Step 22: MVBP

Objectives	How, specifically, does your MVBP meet this objective?
How Your Proposed MVBP Meets the Three Objectives of an MVBP	
1. **Value**: Provides value to end user consistent with Step 8	Our Minimum Viable Business Product (MVBP) will focus on automating specific, high-friction research tasks where initial testing (Step 21) showed clear value, such as idea generation and initial literature mapping. By delivering tangible time savings (aiming for ~20-25% initially, revised from Step 8) and better starting points for research projects, it provides immediate, measurable value to the end user (like Chrysis).
2. **Pay**: Prove that the economic buyer will pay something for the product placement	Based on pricing tests (Step 21), the MVBP will be offered at a significantly reduced initial price point (e.g., €150-€250 per user/year) targeting early adopters and pilot programs. This strategy aims to secure the first paying customers, proving that an economic buyer (like Dr. Papadopoulos, using lab funds) is willing to allocate budget, even if small initially, for the perceived value, despite initial price sensitivity.
3. **Feedback**: Creates meaningful feedback loop with customer (end user, economic buyer and champion)	The MVBP launch includes mechanisms for feedback collection: direct user surveys focusing on usability and value (End User), usage analytics tracking feature adoption, dedicated support channels for issue reporting (End User/Champion), and structured check-ins during pilots to understand institutional adoption hurdles and perceived ROI (Champion/Economic Buyer).

Minimizing Investment and/or Speeding Time to Market – Concierge Opportunities

Is there anything that can be concierged in your MVBP to reduce the initial investment required to achieve the above three objectives and/or decrease time to get to market with an MVBP? Time maybe even more important than money.

Yes, initially, we can concierge complex onboarding processes by providing personalized, manual setup assistance instead of building fully automated tutorials. Certain advanced AI outputs could be manually reviewed or curated by our team before delivery to ensure quality and mimic advanced features. We can also manually handle complex integration tasks or specific data sourcing requests for early users, delaying the need to build resource-intensive automated connectors immediately.

Step 23: Are Your Customers "Eating the Dog Food"?

So what numbers should you look at?

1. **Initial Interest**: Once your target customer is exposed to your value proposition, what percentage of them actively seek to learn more? On a website, you can measure the clickthrough rate from a page that details the benefits of the product to a subsequent page.
2. **Conversion Rates**: Once the target customer is in the sales funnel, the yield rates going from section to section of the funnel are extremely important numbers to understand, both the absolute numbers but also the trends.
3. **Purchase and Pay**: The ultimate conversion. Whether the customer pays for your product is one very important indication of whether the customer is getting value. How long it takes the customer to pay, and what percentage of customers end up not paying after making an initial commitment (the "default rate"), are also interesting numbers to watch.
4. **Retention Rates**:   It is always telling to monitor retention rates, often referred to in the negative modality of "churn rate," especially in subscription businesses. One way to measure retention rates is through support or maintenance contracts for post-purchase support. If the customer buys the product but doesn't sign up for a maintenance contract at the end of the warranty period, in some industries that is a bad sign and you should take note immediately.
5. **Customer Advocacy**: There is a huge difference between a satisfied customer and a very happy, evangelizing one. The latter is at least one order of magnitude if not more valuable to you. The simplest and most commonly used way to measure customer advocacy is the Net Promoter Score (NPS), developed by Bain & Company, Satmetrix Systems, and Fred Reichheld. You gather the necessary data by asking customers a single question – On a scale of 1 to 10, with 10 being the highest, how likely is it that they would recommend your product to a friend or colleague? By tallying the percentage of responses that are 9s and 10s ("Promoters") and subtracting the percentage of responses that are 6s and below ("Detractors"), you get your score, which can be as low as -100 (all Detractors) and as high as 100 (all Promoters).
6. **COCA and LTV**: Estimate these numbers again now that you have some sales. They are much easier to calculate the second time around! They are valuable, albeit imperfect, indicators of your success. If there are surprises in these numbers, then quickly dive into it and understand why.
7. **Gross Margin**: Your gross margin, the difference between what it costs to make one unit of product and what you sell that unit of product at, should go up over time, indicating that you are getting strong word of mouth for your product. If it goes down, then you are possibly providing too many discounts on your product, so the number of customers may be going up because the price is artificially low. The gross margin trend is an imperfect indicator on its own (much like the other indicators here), but make sure you monitor it.
8. Don't feel constrained by this list. There are plenty of other metrics that will be equally or more valuable for your situation.

Worksheet

What time period(s) will you measure metrics for (give duration and units – e.g. 2 weeks, 2 months, etc.) **Quarterly**

Are Your Customers "Eating the Dog Food"?				
Stage in Funnel (starting at top)	**Est. Industry Conversion Average (%)**	**Your Conversion Goal (%)**	**Actual Conversion Rate (% and trend)**	**Next Steps if your actual conversion rate is lower than your goal**
#1 – Identification (leads)	40%	35%	To be measured	Review lead generation channels (Step 18/19). Refine target audience messaging based on who is converting. Analyze content performance and SEO effectiveness.
#2 – Consideration (suspects)	30%	25%	To be measured	Improve initial engagement tactics (Step 18). Enhance website clarity on value proposition (Step 8). Offer more compelling introductory content or demos.
#3 – Engagement (prospects)	20%	15%	To be measured	Refine demo/trial experience to better showcase value (Step 8/21). Improve objection handling resources for sales/support. Ensure pricing tiers are clear and justified (Step 16/21).
#4 – Purchase Intent (qualified prospects)	50%	45%	To be measured	Streamline qualification process. Simplify quoting and proposal generation. Provide better support materials for navigating institutional procurement (Step 13/18).
#5 – Purchase (customers)	65%	60%	To be measured	Simplify checkout/payment process. Offer multiple payment

				options. Proactively follow up on institutional invoices. Address any technical issues with signup/payment promptly.
#6 – Loyalty (satisfied customers)	60% (Quarterly Retention)	55% (Quarterly Retention)	To be measured	Improve onboarding process (Step 18). Enhance product features based on user feedback (Step 21/22). Increase proactive support and communication. Clearly demonstrate ongoing value derived from the product (linking back to Step 8). Review pricing/value alignment if retention is consistently low.
#7 – Advocacy (evangelists)	10% (Referral Rate/NPS > 10)	5% (Referral Rate/NPS > 10)	To be measured	Actively solicit feedback from satisfied users. Implement or improve referral program (Step 18). Engage with promoters identified via NPS. Use testimonials and case studies more effectively. Address feedback from detractors to improve overall satisfaction. Address product issues impacting user satisfaction.

	Expected for Short Term	Actual for Short Term	Next Steps
Gross Margin	~65-70% (Slightly below long-term 75% target due to initial support costs)	To be measured	Optimize cloud infrastructure costs. Improve support efficiency through better documentation/self-service. Analyze costs associated with delivering the service.
LTV	~€250 - €300 (Revised lower based on Step 21 findings on retention/price sensitivity)	To be measured	Focus intensely on improving customer retention (Stage #6). Explore opportunities for upselling or add-ons once core value is established. Re-validate pricing against value.
COCA	€3,500 - €5,000 (High initial cost based on Step 19 short-term estimate)	To be measured	Optimize sales and marketing channels based on early conversion data (Step 18/19). Improve lead qualification. Transition towards more scalable internet sales tactics.

Define and Test Other Metrics

List Custom Metrics Here:	Expected for Short Term	Actual for Short Term	Next Steps
NPS (Net Promoter Score)	> 0 (Aiming for positive score initially, acknowledging MVBP limitations found in Step 21)	To be measured	Analyze promoter/detractor feedback deeply. Engage promoters for testimonials/referrals. Address detractor concerns to improve product and reduce churn.
Monthly Active Usage (MAU) (% of customers)	> 40% (Want users actively engaging regularly)	To be measured	Improve onboarding to guide users to core features. Enhance UI/UX for better engagement. Add features that encourage regular use based on feedback.
Key Feature Adoption Rate	> 50% (e.g., % of active users trying core AI agents like Idea Generation or Experiment Planning monthly)	To be measured	Promote key features via in-app messages or emails. Simplify access to core features. Ensure features deliver clear value based on user feedback (Step 21).
Average Support Tickets per User per Quarter	< 0.5 (Aim for low friction and good self-service)	To be measured	Improve knowledge base and self-service resources. Enhance product stability

			and usability based on ticket trends. Optimize support response times.