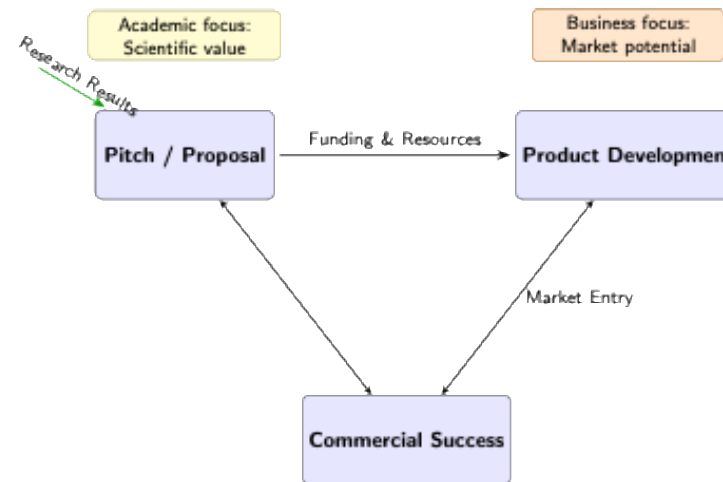


From research to reality in control: beyond the science

Alisa Rupenyan



From research to market

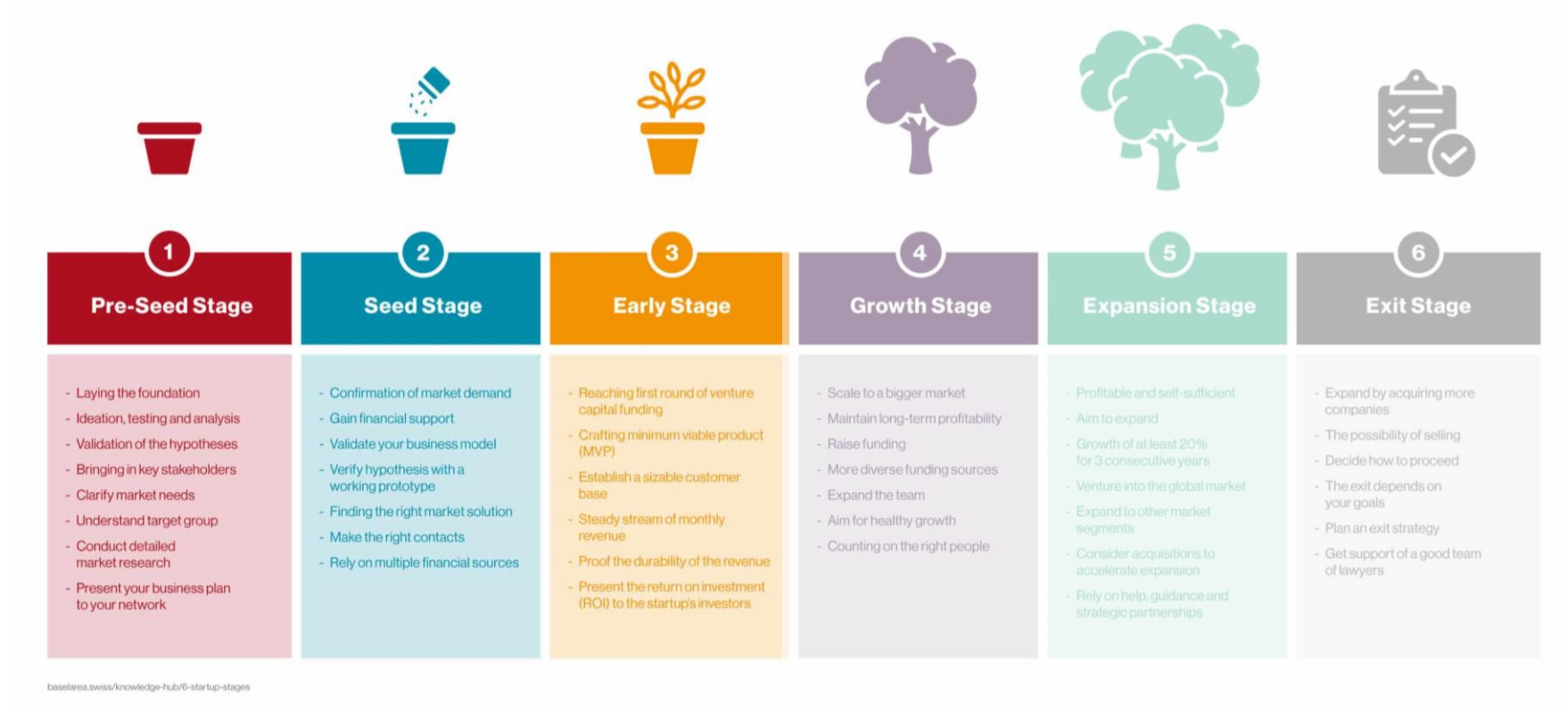
Stage 1 · Research foundation: the research breakthrough, the publications, and the first intellectual property (IP).

Stage 2 · Commercial validation: problem-market fit, customer discovery, competitive analysis. Talk to people, and search for the solutions they already use.

Stage 3 · Minimum viable product (MVP): technical translation, a working prototype, first customers as beta-testers.

Stage 4 · Market entry: scaling, partnerships, growth funding.

Stages of a startup



Pre-seed

Personal network, bootstrapping, friends and family

Seed

Accelerators, angel investors, government and proof-of-concept grants

Early

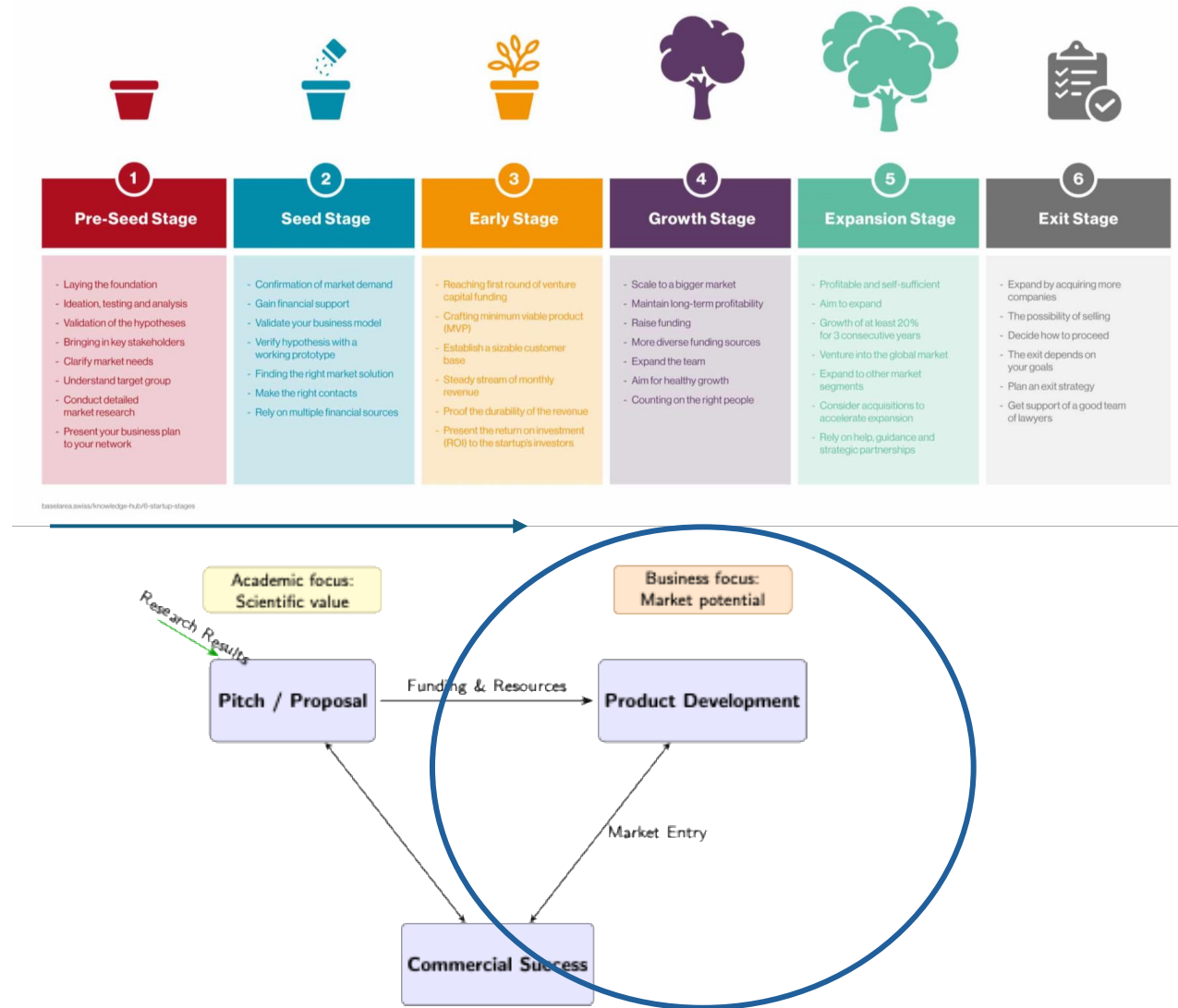
Minimum viable product, market traction, pitch deck, venture capital

Growth onward

Scaling

Of the startups that reach the seed stage, 7.5% advance to the next one.

Pre-seed and seed: where a research spin-off starts



The pre-seed and the seed stages:

A team leaving the lab raises pre-seed money from grants, personal funds and angel investors, and spends it on reaching the evidence that unlocks seed funding.

Stage 1–2: from research to market validation

Assess: the breakthrough and the intellectual property (IP) behind it.

Problem: which real-world problem does this solve? Answer as specifically as you can.

Market: who has this problem? How do they solve it today, and where does that solution fall short?

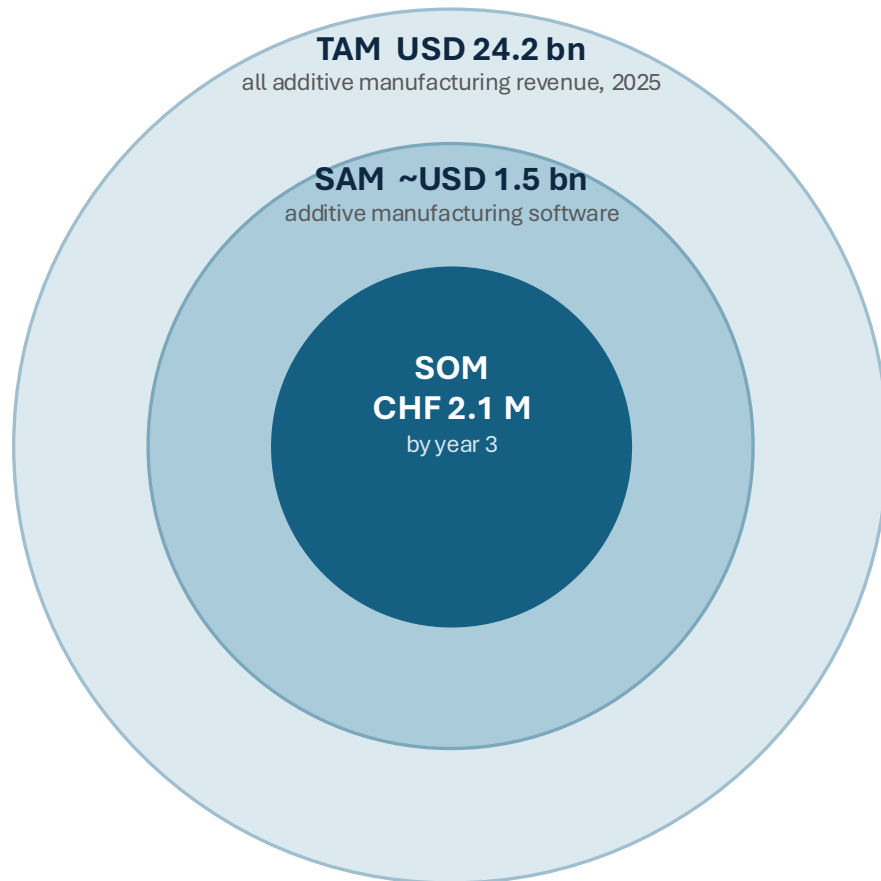
Validation: interview ten or more potential users, systematically.

Evidence: letters of intent, pilot agreements, quantified pain points.



42% of startups fail because they build a product nobody wants.

Market size: TAM, SAM and SOM



Total addressable market (TAM): everyone in the world who has the problem, if you could reach all of them. A context number.

Serviceable addressable market (SAM): the part your product, your channel and your geography can serve.

Serviceable obtainable market (SOM): what you can win in three to five years with the team and the money you are asking for. Reviewers judge this one.

Grants and investors test how you arrived at the number.

Note: "the additive manufacturing market" is USD 24.2 bn in the Wohlers Report 2026 and EUR 11 bn in the AMPOWER Report 2026, which counts industrial systems only.

The corresponding market sector drives the number, and it should be precisely stated (e.g. industrial systems, robot platforms, «garage shops», etc.

Bottom-up evidence is always stronger

TOP-DOWN: a share of a headline number

USD 24.2 bn × 1% = USD 242 M

The 1% is an assumption. It is chosen to sound good and to reach a number that is desired.

Direction stays hidden. Additive manufacturing revenue grew **10.9%** in 2025...

but shipments of corresponding industrial systems above USD 100 000, the machines a process controller attaches to, **fell 3%**.

The growth was in printing services and desktop printers – not relevant!

"The most consistent feedback in our VC survey was to dissuade founders from presenting their future revenue based on % market share of a large addressable market." — Pear VC, a venture capital firm

BOTTOM-UP: built from real evidence (in this case, hypothetical example)

customers you can name × annual revenue each

Input	Value	Evidence behind it
Reachable sites, German-speaking Europe	1 200	own list and three partner networks
Robotic cells per site	1.6	site visits
Licence and support, per cell per year	CHF 18 000	price confirmed in three letters of intent
Sites closed per sales representative per year	8	own pilot conversion so far

3 representatives × 3 years = 72 sites → 115 cells → CHF 2.1 M recurring revenue

That is under 0.01% of the headline total addressable market, and it is the number a reviewer accepts, because every line above it can be checked.

Evidence, strongest first: paid pilot › signed letter of intent with price and volume › a budget line a named customer will defend › interview with quantified pain, such as scrap rate or downtime hours › a figure from an analyst report

Sources: Wohlers Report 2026; CONTEXT printer shipment data, Q4 2025 and Q1 2026; Pear VC market sizing guide.

Stage 1–2: pre-seed funding

Bootstrapping: personal funds, university resources, part-time development.

Proof-of-concept grants for entrepreneurship: early career, full-time commitment, a peer-reviewed foundation required. The application resembles a postdoctoral grant.

Startup competitions: small prizes, useful visibility, and a deadline that forces a first pitch.

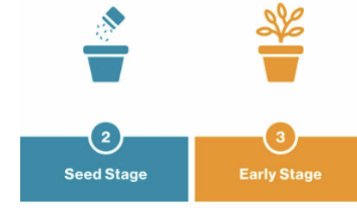


Pre-seed money buys the evidence on the previous slides.

Stage 2–3: minimum viable product (MVP)

Larger grants for entrepreneurship open at this stage. Reviewers expect:

- A balanced team that includes commercialization expertise.
- A defined problem, its solution, and the beneficiary.
- Competitive analysis. Its absence is a major red flag.
- Market validation evidence: potential customers, letters of intent.
- A go-to-market roadmap with specific steps.



Entrepreneurship grants: three criteria

Innovation potential, evidenced by previous research output.

Measurable impact.

Quality of the implementation plan.

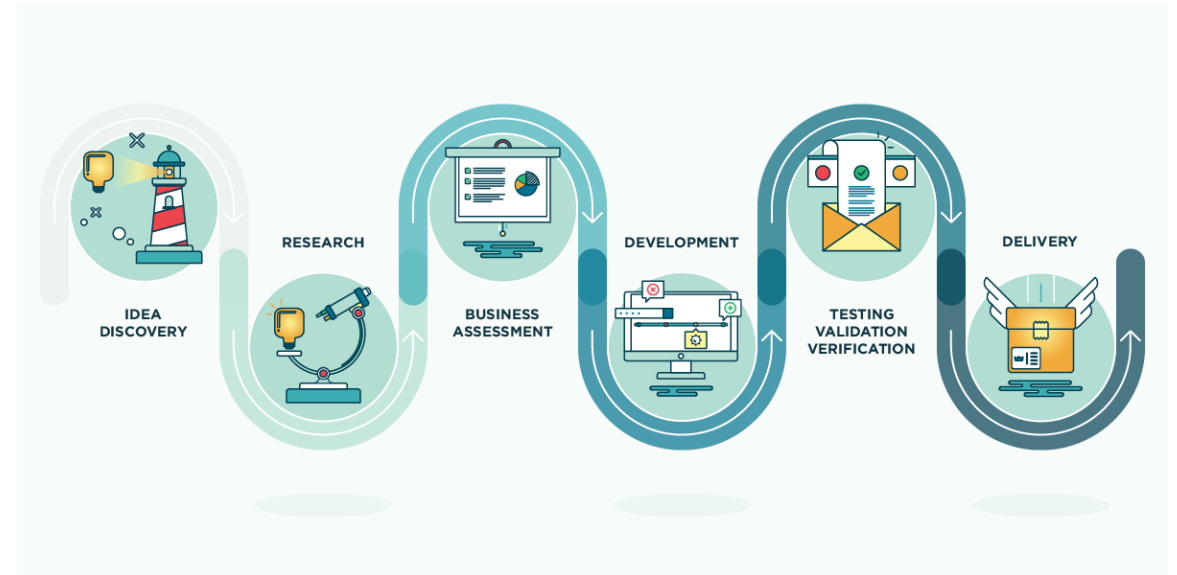


Image: innovationcloud.com

Entrepreneurship grants: what reviewers read

Scientific excellence.

Economic and social impact: quantified improvements, such as 20% faster, CHF 50 M saved, 10 000 patients helped.

Competitive analysis: current solutions, their limitations, your advantage.

Market validation: customer interviews, pilot studies, letters of interest.

Team balance: an excellent research team carrying commercialization expertise.

Go-to-market plan: specific steps, timelines, a licensing or spin-off strategy.



Reviewers expect applied work with a named beneficiary.

Part II

Interactive exercise



Scoping canvas

Team:

1

The challenge: how might we...

The challenge is human and subjective. Understanding human behaviour is key to project success.
Project is geared towards discovery and not towards short term delivery.
Challenge does not dictate solution space or user needs/ problems space.
Challenge space is narrow enough to enable more depth than breath during discovery.

2

Why this challenge?

How did the team come up with this challenge?
Why is this challenge important for the team? What are the strategic ambitions behind this challenge?

3

Customer segment

Who do you want to create value for?
Are there existing personas?

5

Assumptions

What are the underlying assumptions/ hypothesis that lead us to do this project?

7

Goal/Success

What is it you want to achieve with this project?
What would be a successful outcome for you?

4

Current situation

Who do you want to create value for?
Are there existing personas?
Which other stakeholders might be affected for better or worse?

6

Questions

What are some questions we want to address?
What are some unknowns we want to find out more about?

8

Related initiatives & resources

Are there any projects which recently explored similar business areas/challenges? Do you have any market research/reports done which could help us out?
What are some insights, facts we already know that can guide the team to better understand the challenge? Who should we speak to that's sitting on insights, expertise, experiences that are valuable for our challenge?



Business Model Canvas

Designed for:

Designed by:

Date:

Version:

Key Partnerships



Key Activities



Value Propositions



Customer Relationships



Customer Segments



Key Resources



Channels



Cost Structure



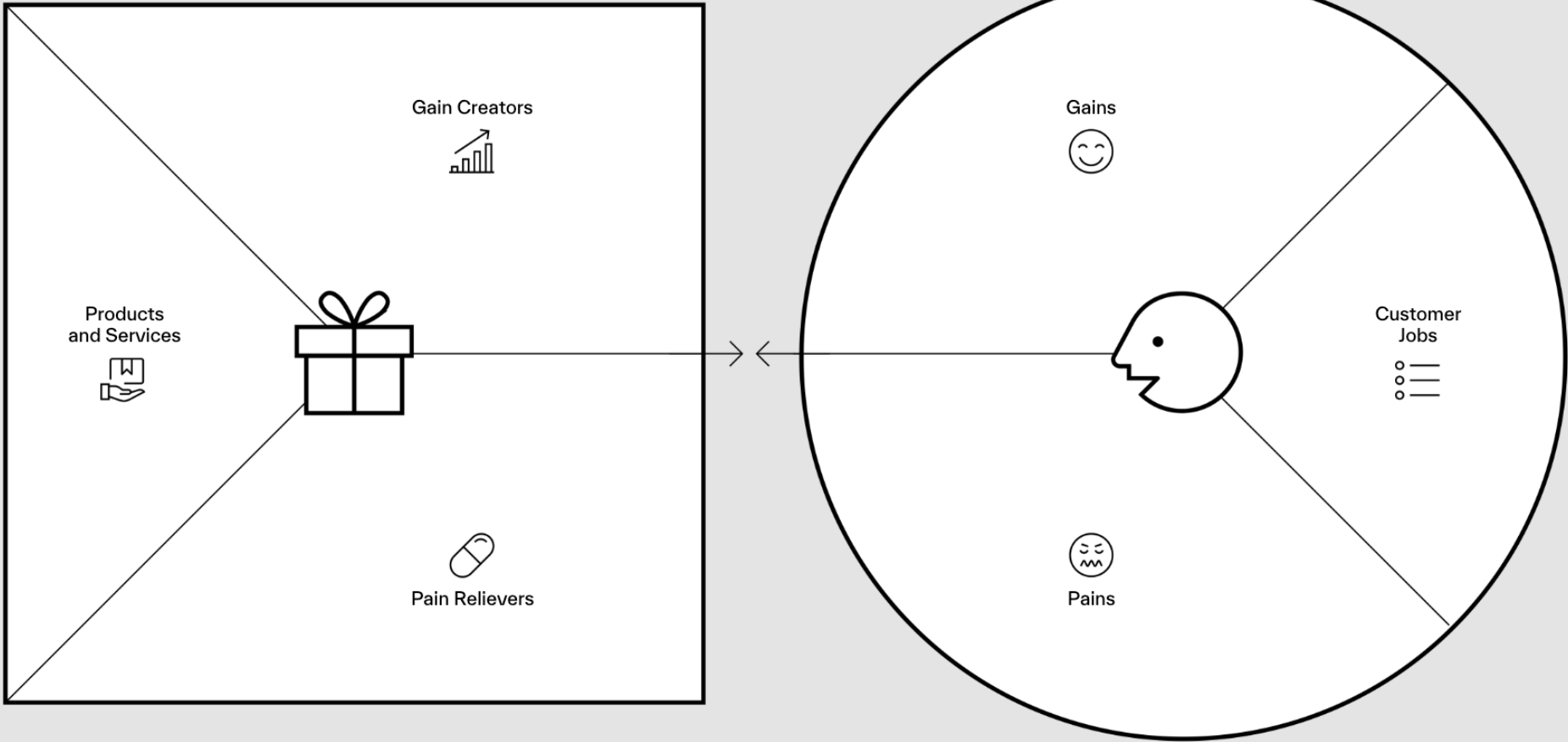
Revenue Streams



The Value Proposition Canvas

Value Proposition:

Customer Segment:

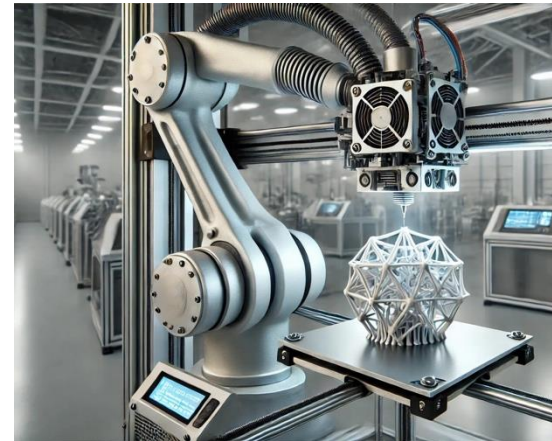


Exercise

- Share research directions that could turn into product
- Nominate one
- Try to fill the canvas
- Do a short pitch!

Thank you

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Industry Committee, Task Force Entrepreneurship. Join us.

