

Introduction to Venture Capital

Percorso formativo Venture Capital per spin-off e ricercatori

Nicola Redi, PhD

Padova, 20 Novembre 2024



Nicola Redi, PhD

TODAY

- Obloo Ventures – Managing Partner for Deep Tech venture capital (aerospace, data science, climate tech, robotics)
- MIB School of Management – Adjunct Professor of New Product Development and Business Planning for New Ventures
- University of Pavia – Adjunct Professor of Digital Manufacturing
- HLG Systems Innovation

PAST

- TTVentures – Chief Investment & Technology Officer
- ISI – Head of EMEA NPD PMO
- Pirelli Tyres – Head of Global PMO

EDUCATION

- MSc Aeronautical Engineering, Politecnico di Milano
- MBA with honors, Bocconi University
- PhD, Aston University



There are different phases in startups' lifecycle

IDEA



- Market need identification
- Alpha prototype
- Draft business model
- Human and financial resources estimation

MVP



- Final product and business model prototype
- Launch customers confirmed
- Industrial and financial plan
- Finalised core team

MARKET LAUNCH



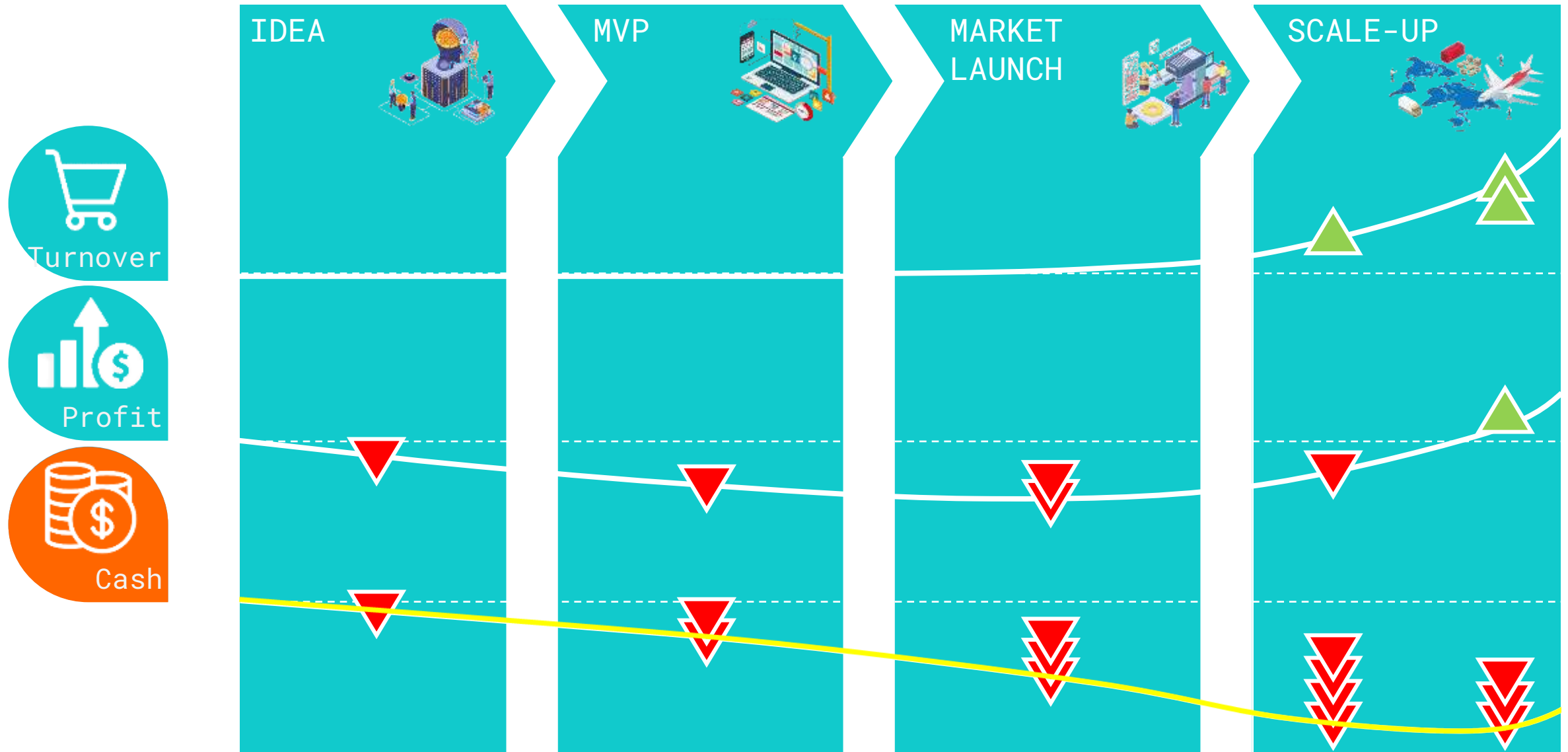
- Market entry with final product
- Proven effectiveness of business model
- Market expansion plan
- Full managerial and corporate structure

SCALE-UP

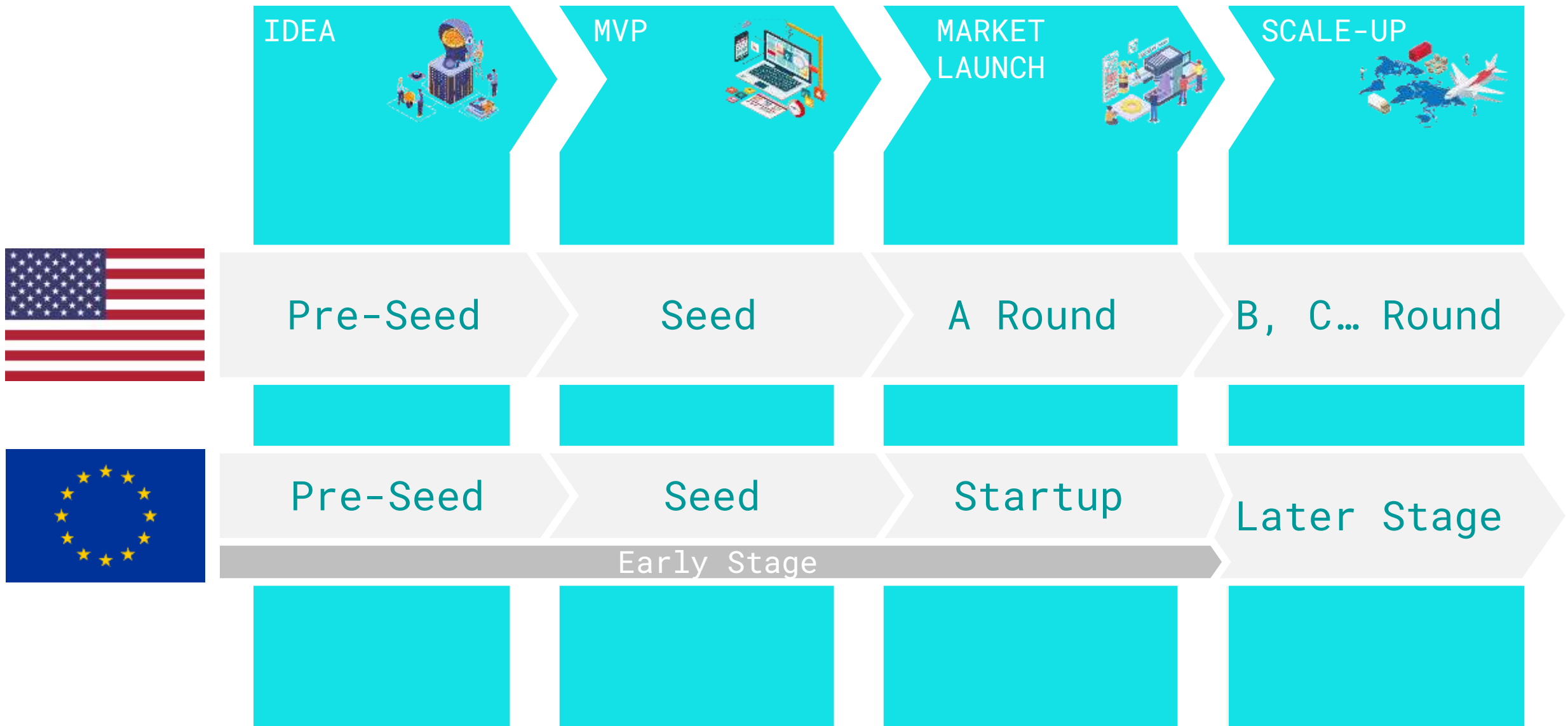


- Enter new international markets
- Internal or external lines growth (acquire competitors/partners)
- Final financial sustainability proof
- De-investment

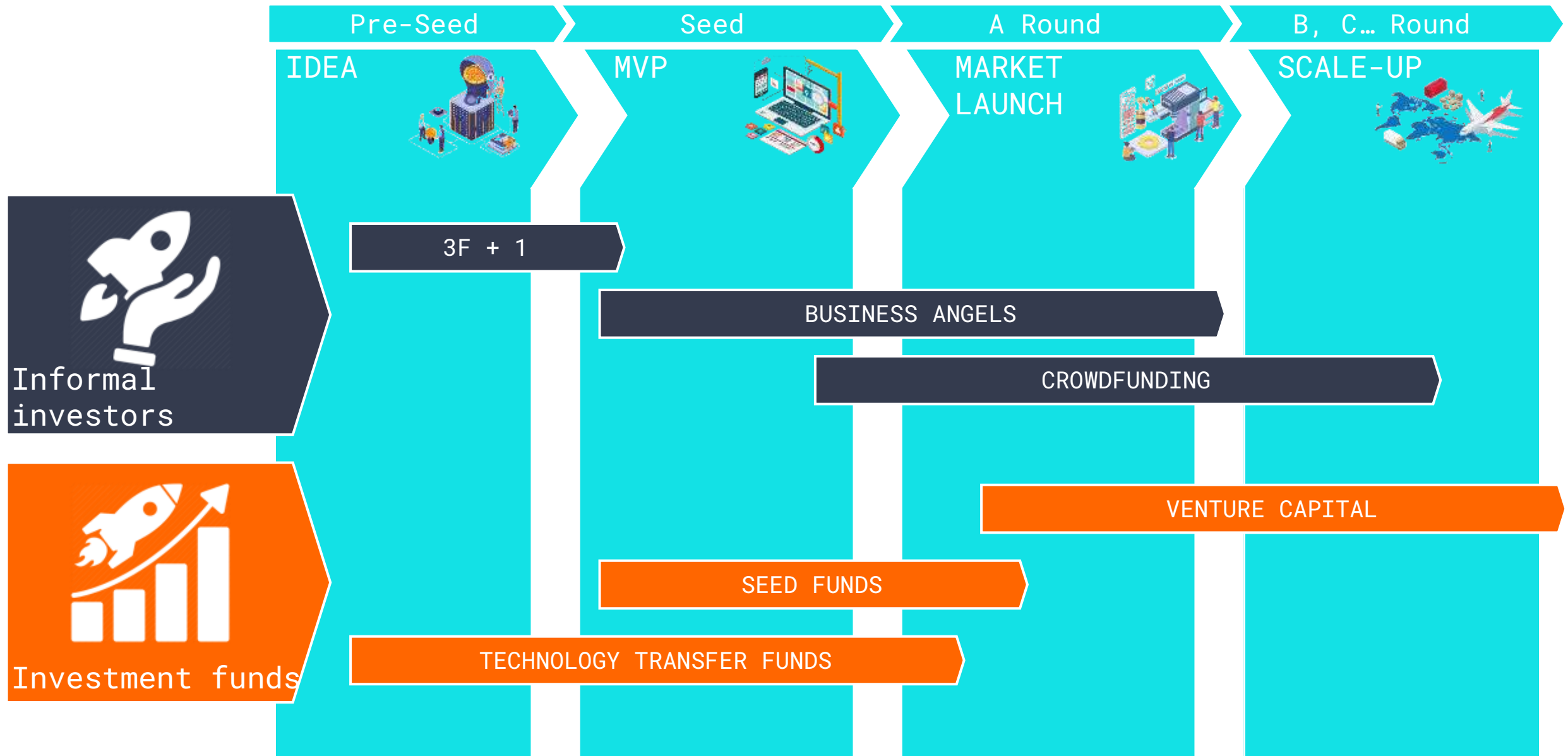
Revenues, costs and investments are very different in each phase



Every stage of investment has a specific name ...



... and a specific kind of investor (not just venture capital)





Informal investors



Invest their money



No deadline



Informal investors



Invest their money



No deadline



Investment funds



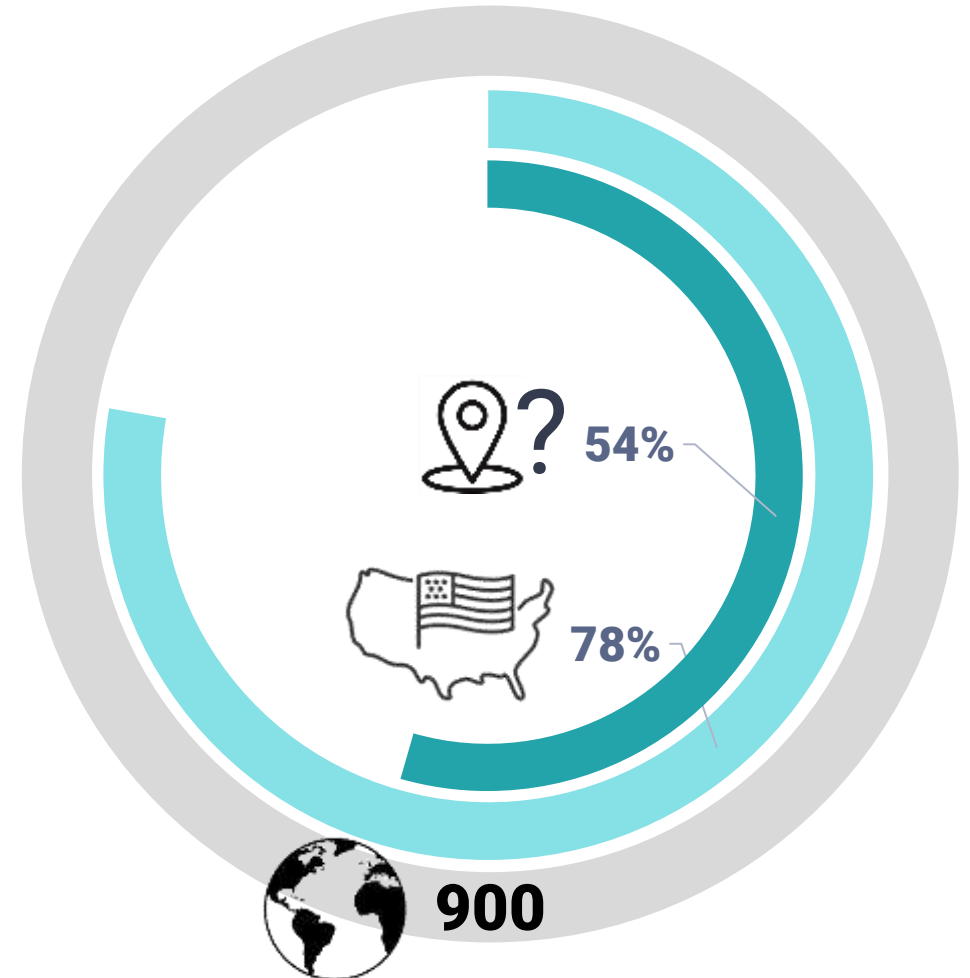
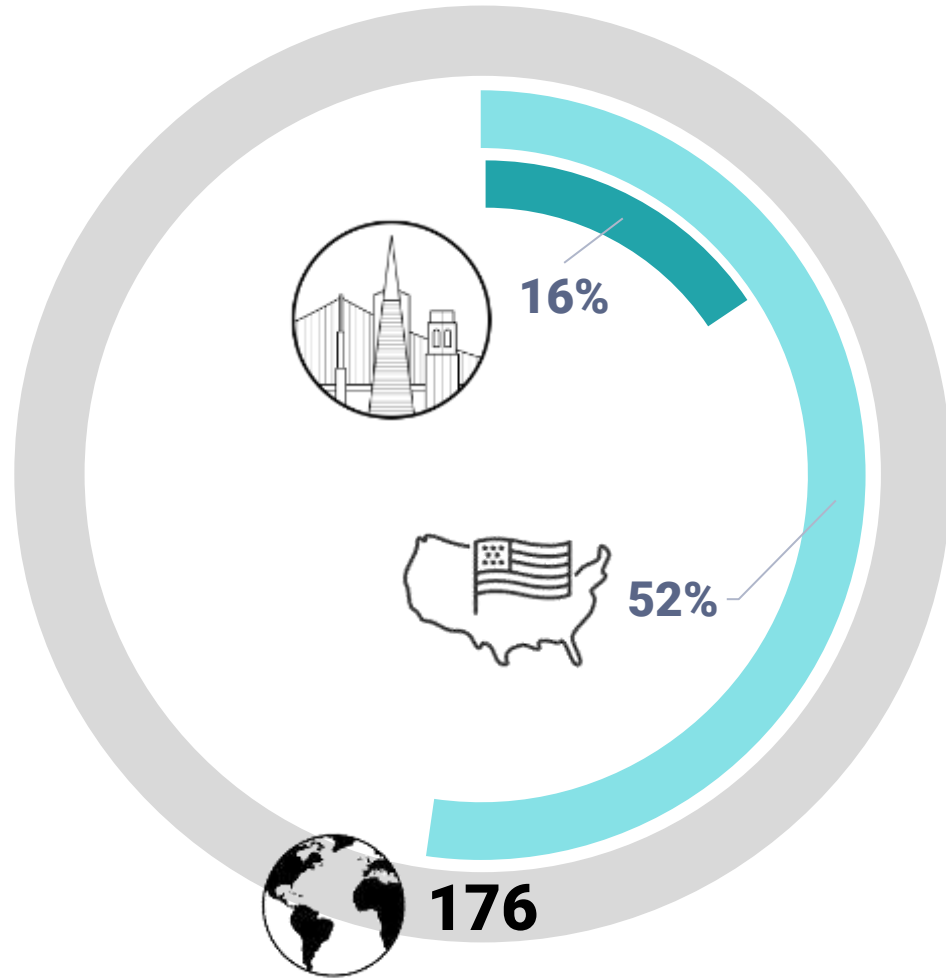
Manage third parties'
money



Duration \approx
10 years

2021

1859





Gideon Allen & Sons

60%



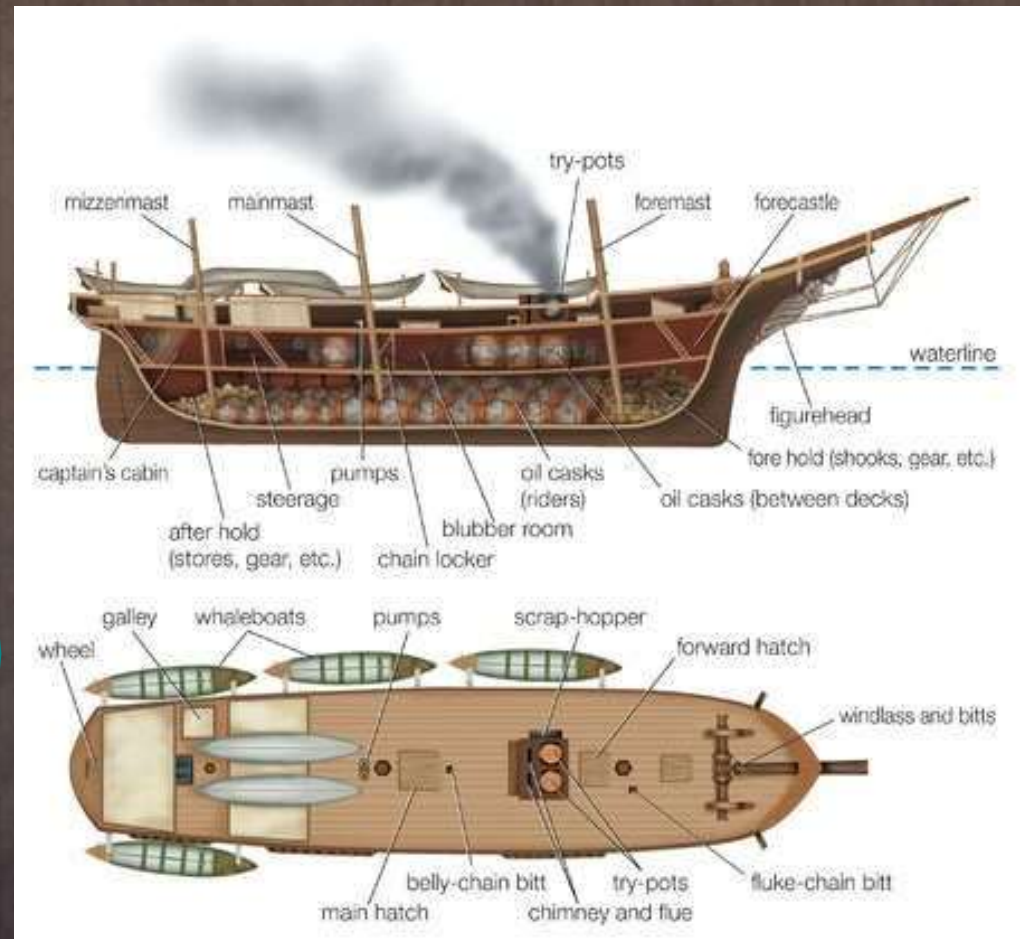
787



272



Gideon Allen & Sons



Investors
(Up to 75%)

Crew
(based on
role and
experience
)



The actors in a fund



INVESTORS
(limited partner)

MANAGERS
(general partner)

ENTREPRENEURS



INVESTORS
(limited partner)

- They select the fund based on:
 - ✓ Diversification of their portfolio
 - ✓ Alignment with their businesses (if industrial investors)
 - ✓ Investment strategy
 - ✓ Quality and track record of the manager
 - ✓ Economic conditions of the fund
 - ✓ Fund governance and controlling authority
- They make capital available
- Verify that the manager operates in accordance with the fund's rules (LPA, Limited Partnership Agreement)

MANAGERS
(general partner)

ENTREPRENEURS

- Defines the fund's strategy:

- ✓ Technology sector
- ✓ Geographical scope
- ✓ Startup phase

- ✓ Amount of investments

- Research investment opportunities

- Carries out technical, industrial and financial analysis of the investment



- Negotiate the terms of the investment
- Support entrepreneurs in the development of startups
- Research the best divestment opportunities
- Negotiate the terms of the sale of the investment

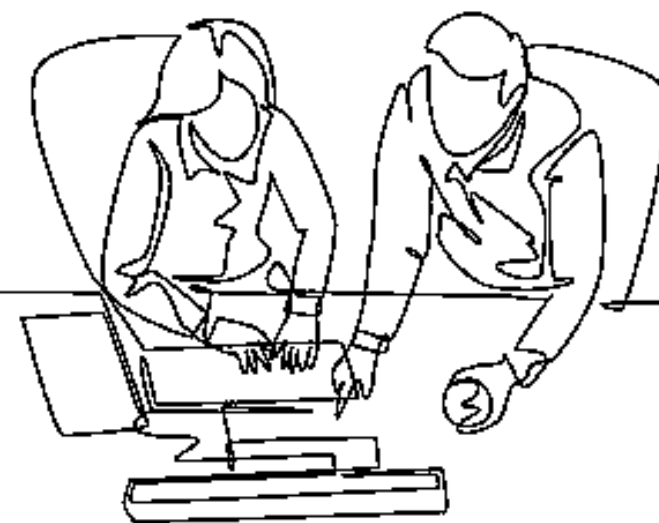


INVESTORS
(limited partner)

MANAGERS
(general partner)

ENTREPRENEURS

- They seek the most appropriate funds based on:
 - ✓ Alignment with investment strategy
 - ✓ Ability of the manager to support the growth of the startup
- Negotiate the terms of the investment
- Ensure reporting and manage the relationship with the manager
- They seek additional fundraising and divestment opportunities



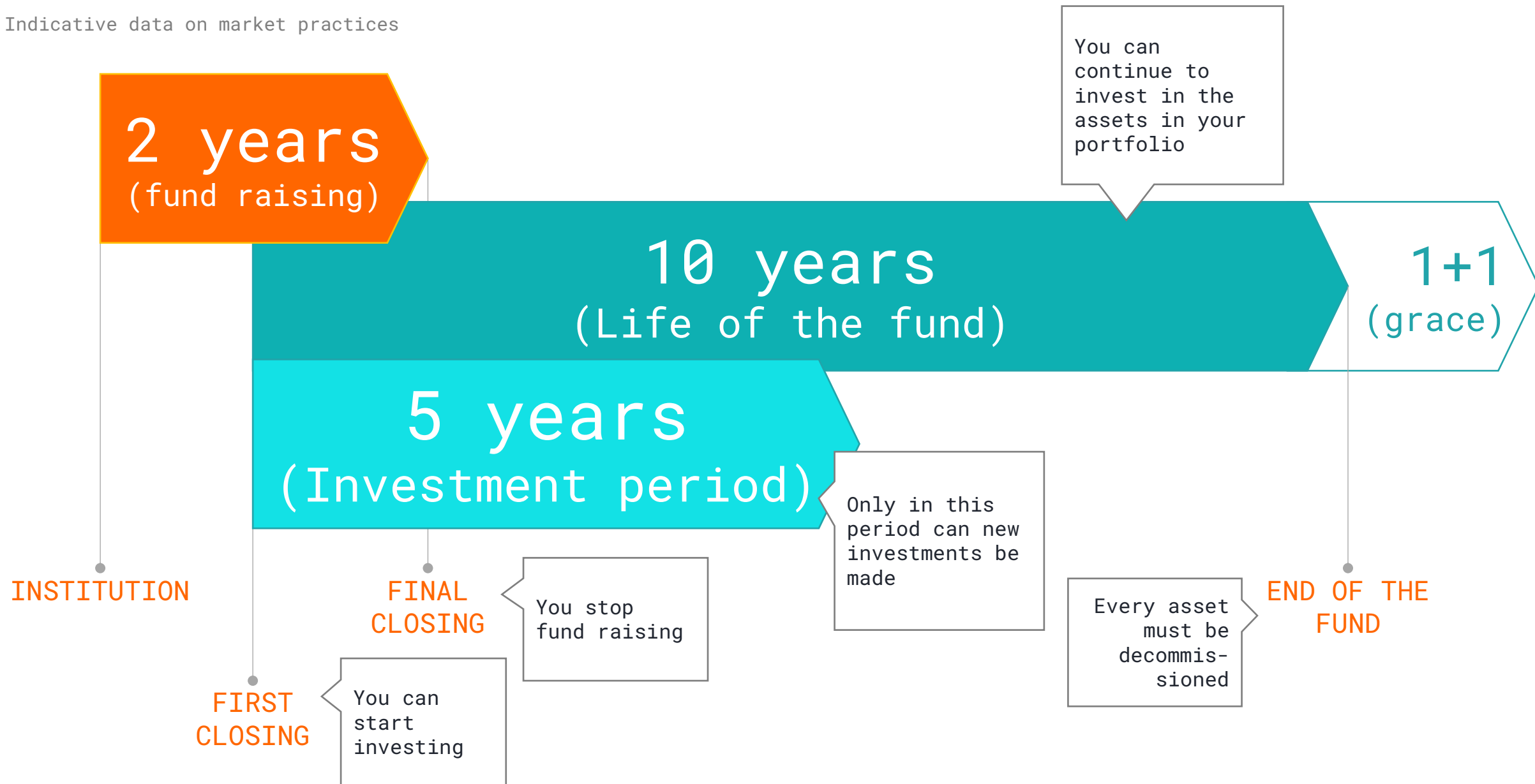
INVESTORS
(limited partner)

MANAGERS
(general partner)

ENTREPRENEURS

The life cycle of a fund

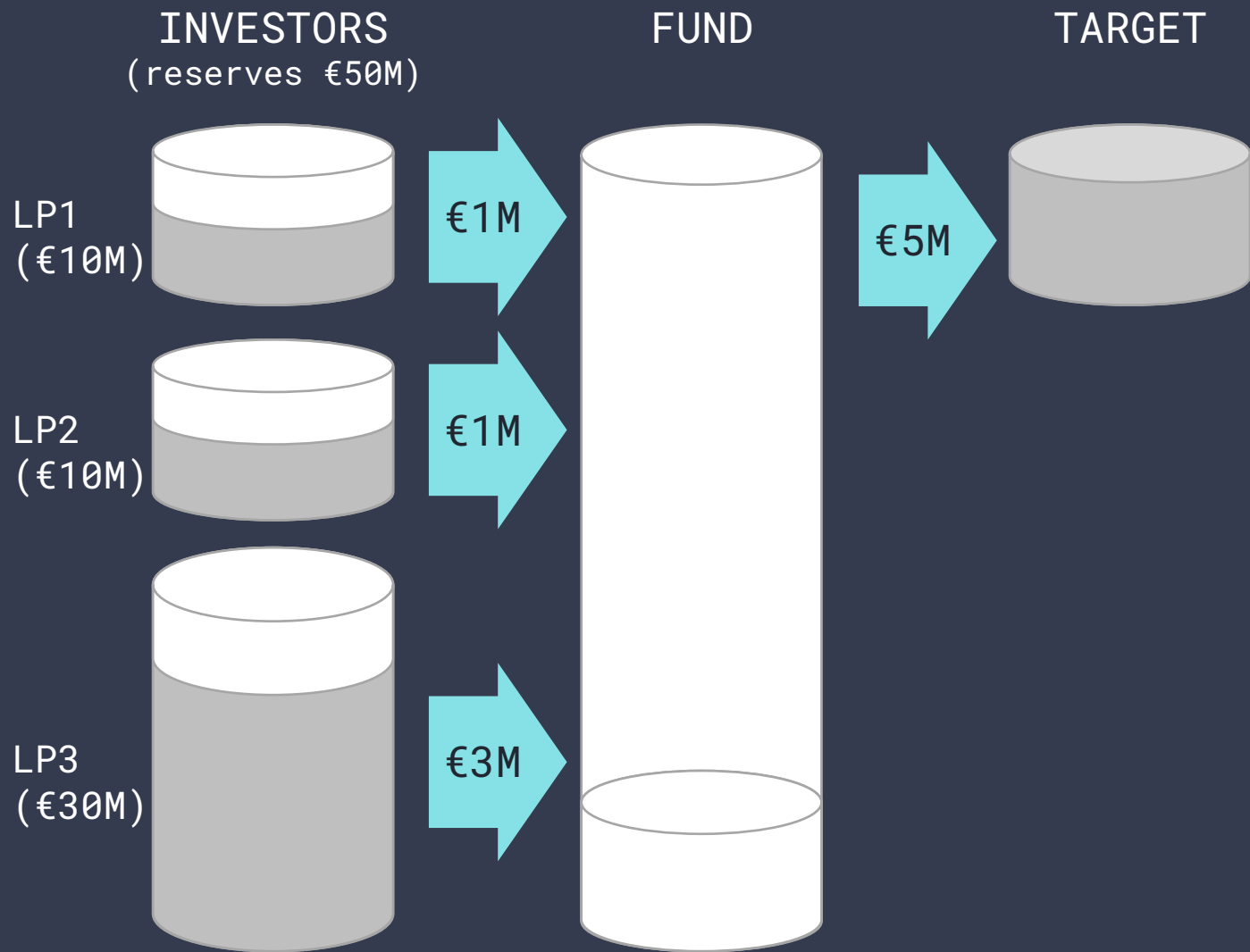
Indicative data on market practices



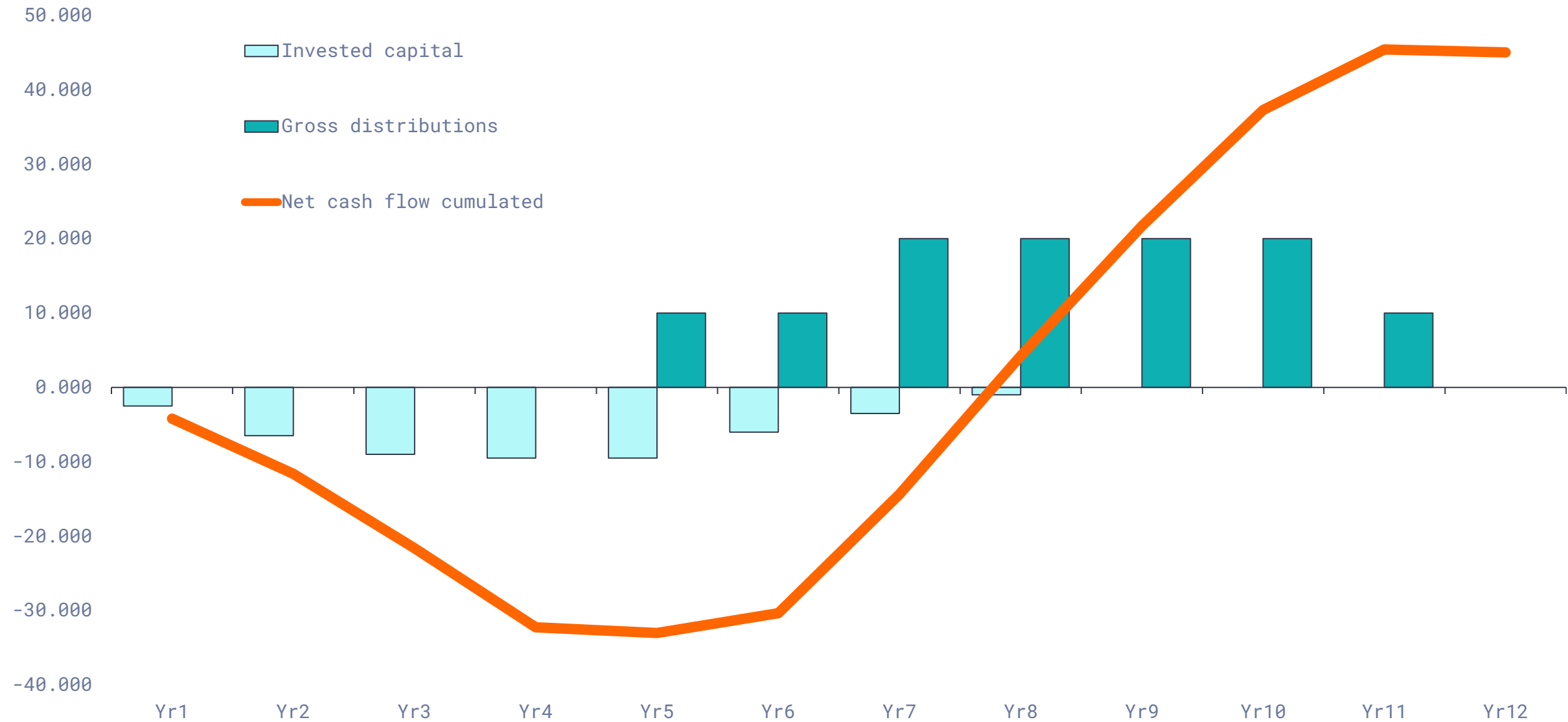
Funds are not current
accounts full of capital...



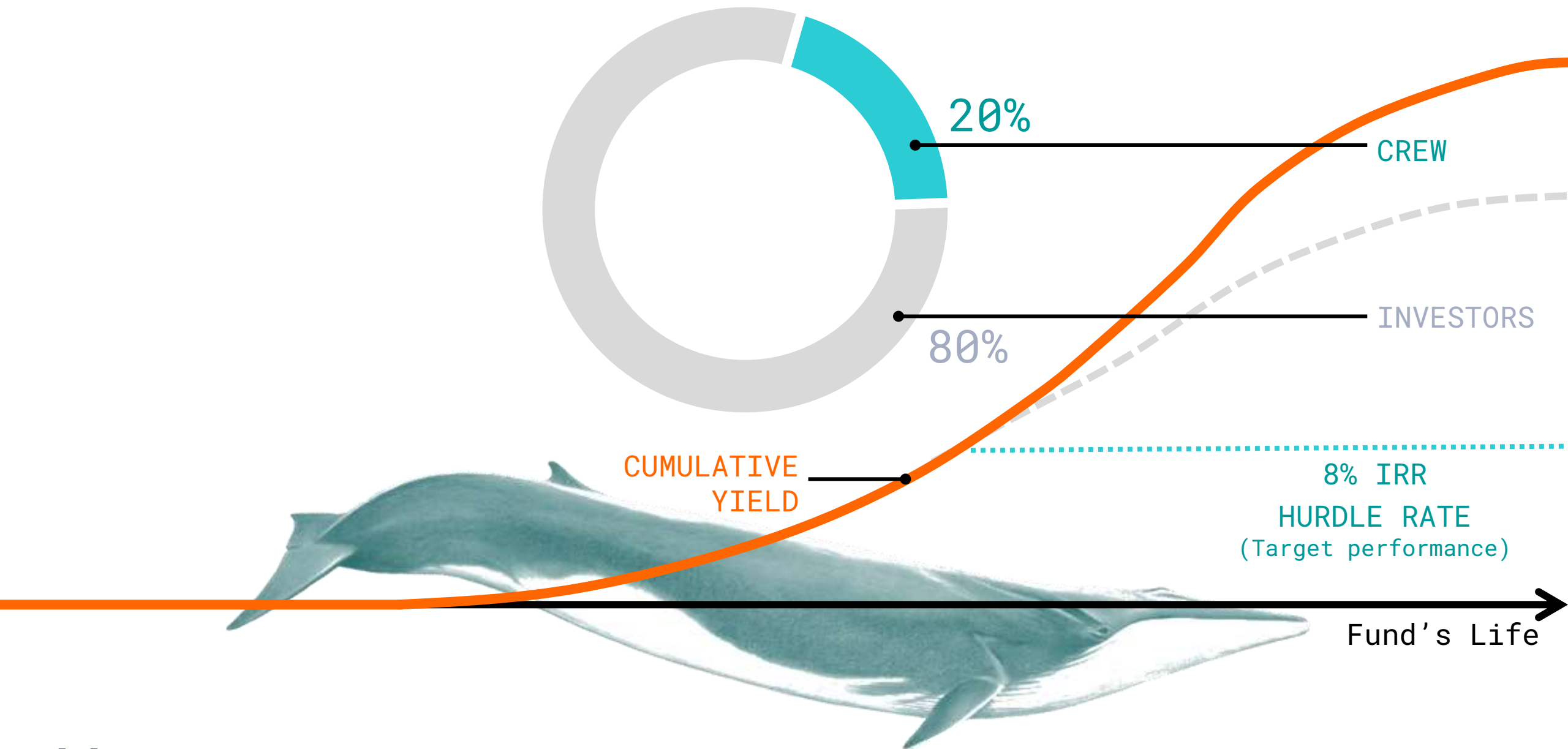
... but investors (LPs) undertake to make them
available pro-rata for any investment or expense



How does a fund work?

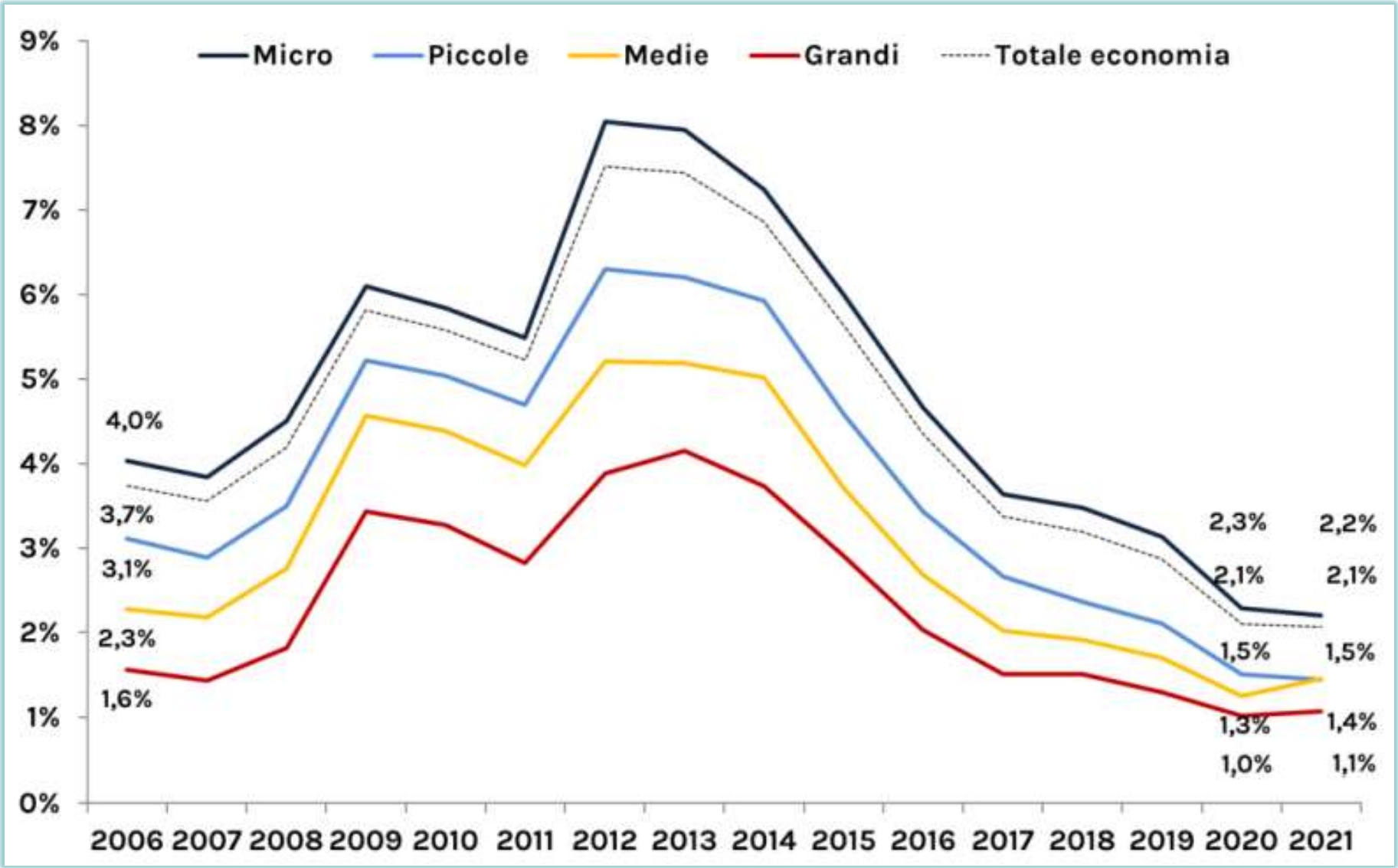


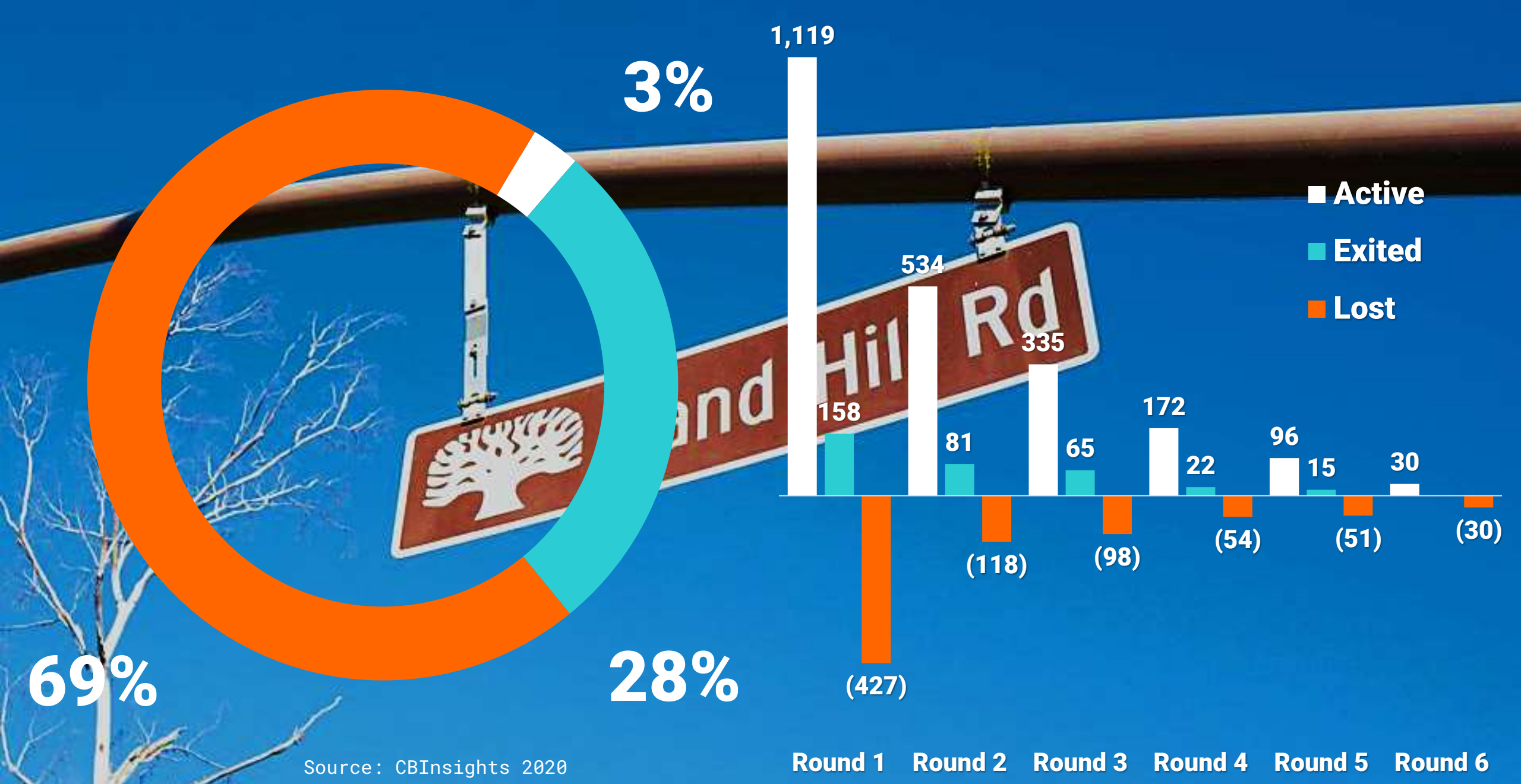
How does carried interest work?



Banking financing write off rates per company dimension

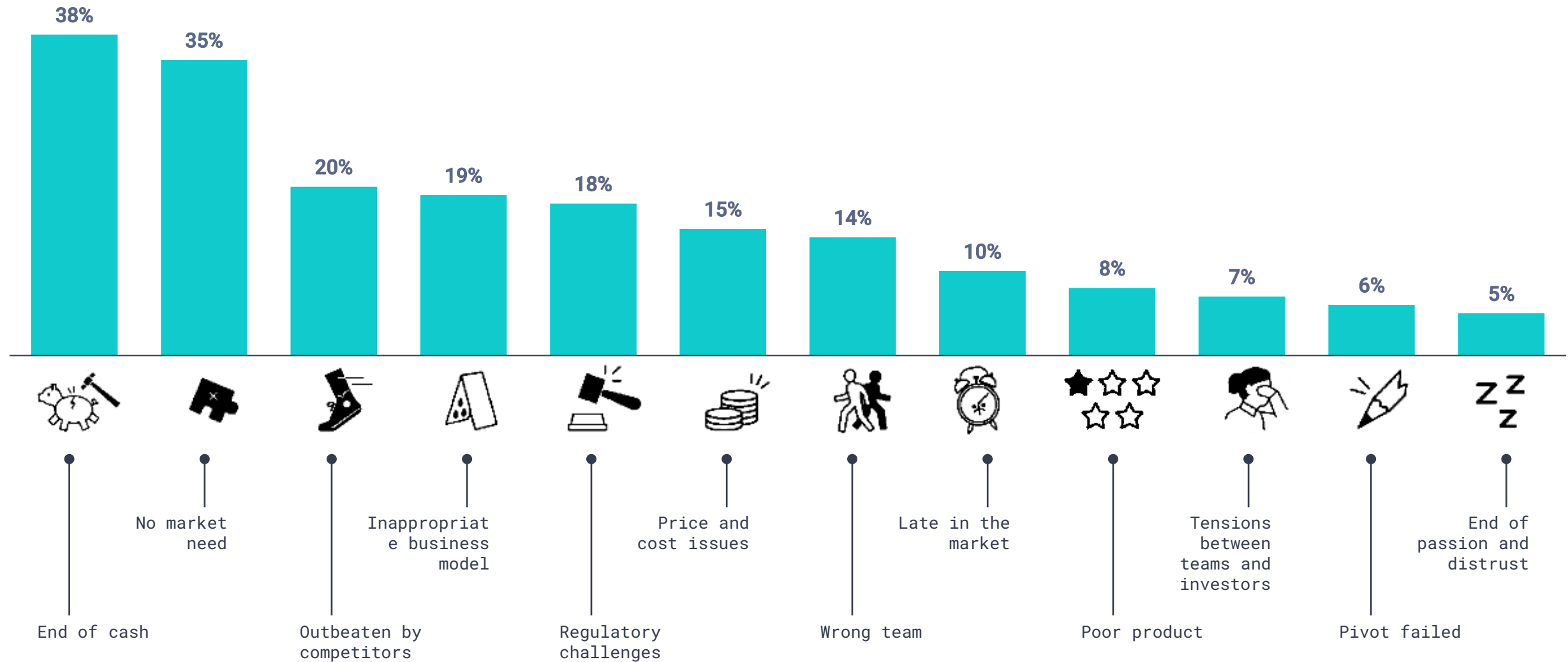
Source: Outlook Abi-Cerved on corporate junk credit February 2022





Why are start-up failing?

Source: Top Reasons Startups Fail, CBInsights, 2021





RIGHT NOW

OR

IN 1 YEAR



Bank loan

RIGHT NOW

=

IN 1 YEAR



Stock market

RIGHT NOW

=

IN 1 YEAR



Year 0



$$A_0 = €1$$

Year 1



$$A_1 = A_0 \times (1+10\%)$$

Year 2











$$A_2 = A_1 \times (1+10\%)$$

Year 3



$$A_3 = A_2 \times (1+10\%)$$

i = ACTUALISATION RATE | $A_0 = A_n / (1+i)^n$

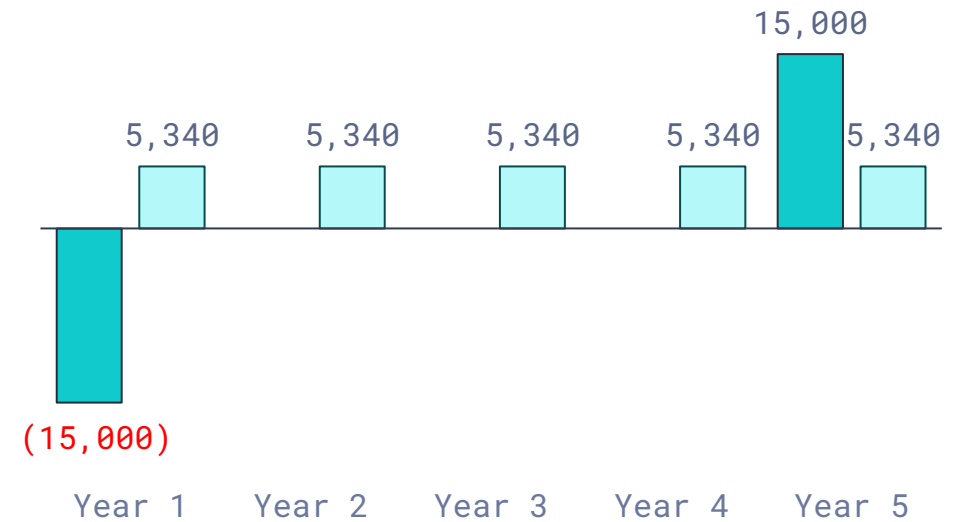
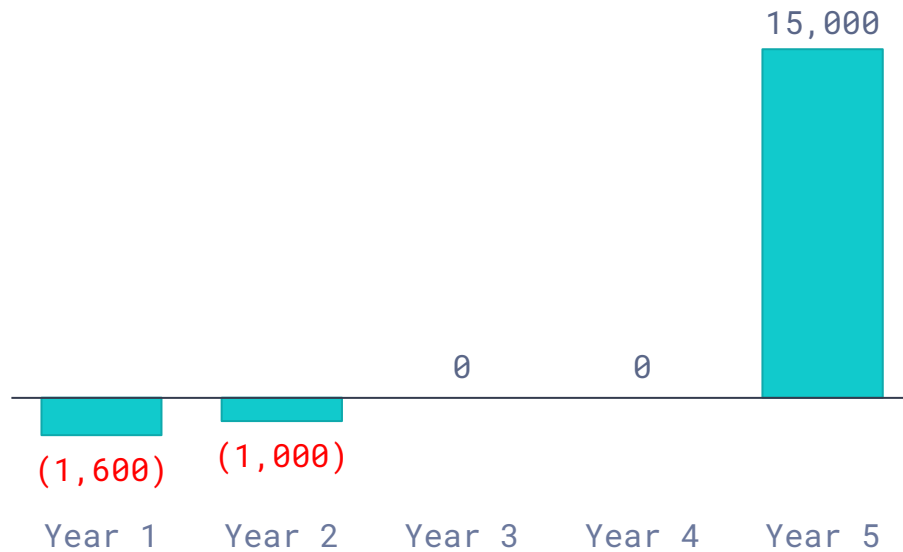
| | Year 0 | Year 1 | Year 2 | Year 3 | TOTAL |
|---------|--|---|--|--|---------|
| IN | |  |  |  | +€3.641 |
| OUT |  | | | | -€1.000 |
| | NET PRESENT VALUE (i=10%) | | | | |
| @ Today |  |  |  |  | +€2.000 |

Make your choice!

Investment 1

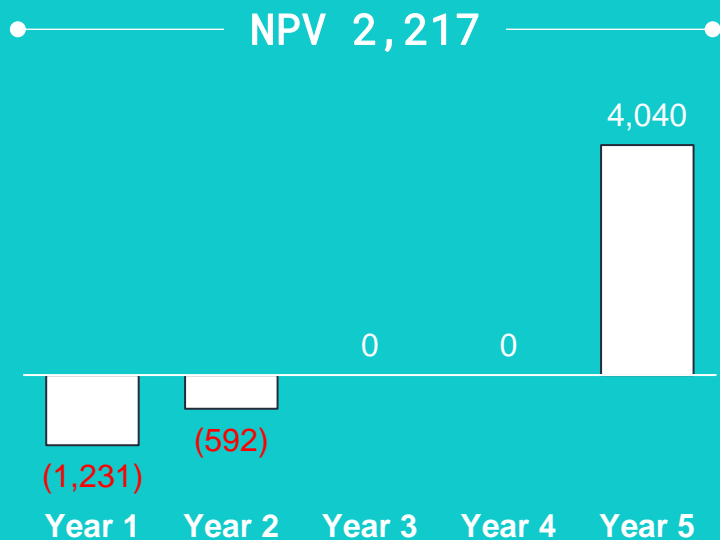
OR

Investment 2

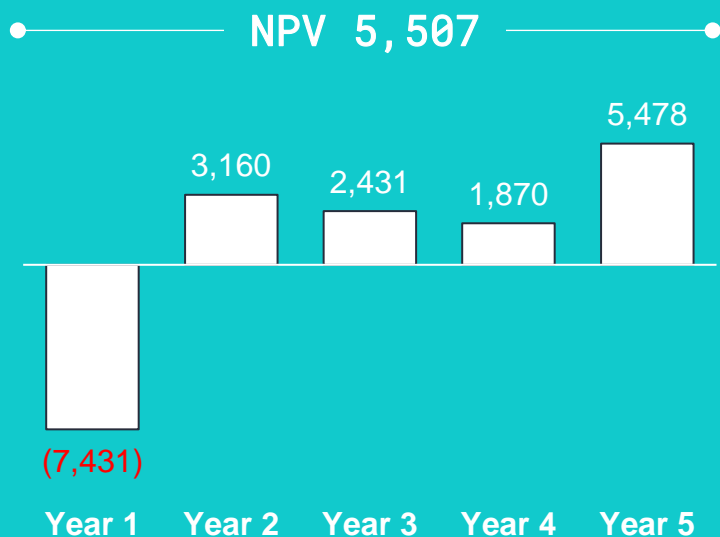


30%

Investment 1

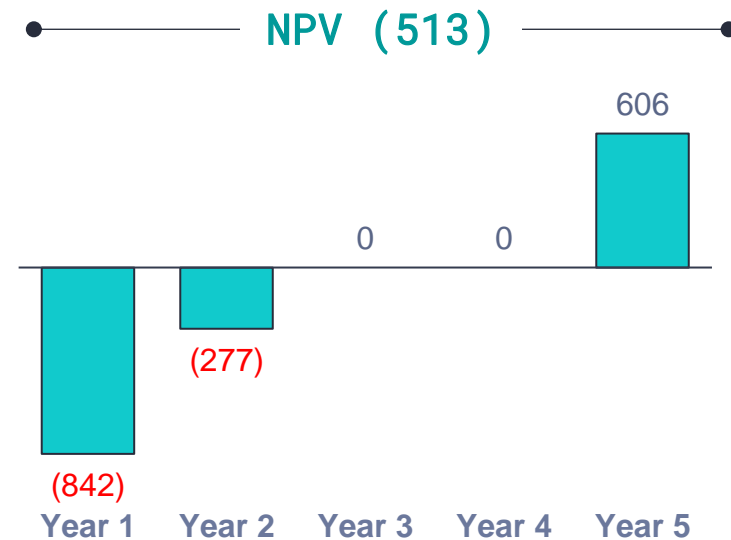


Investment 2

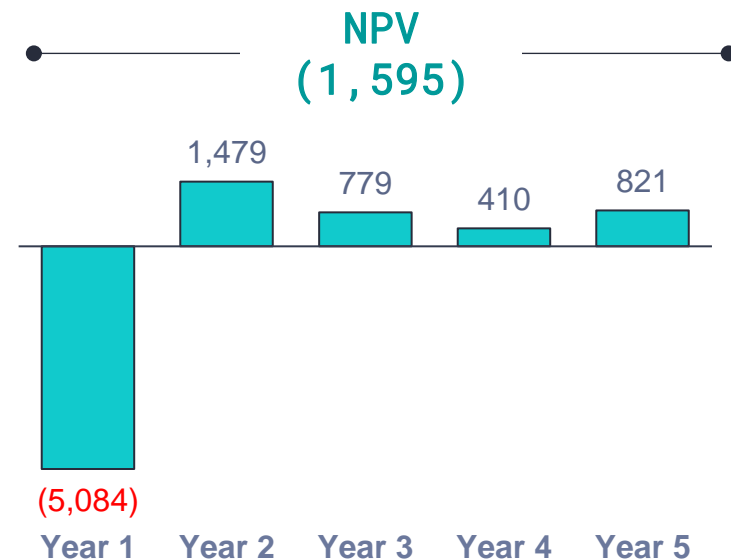


90%

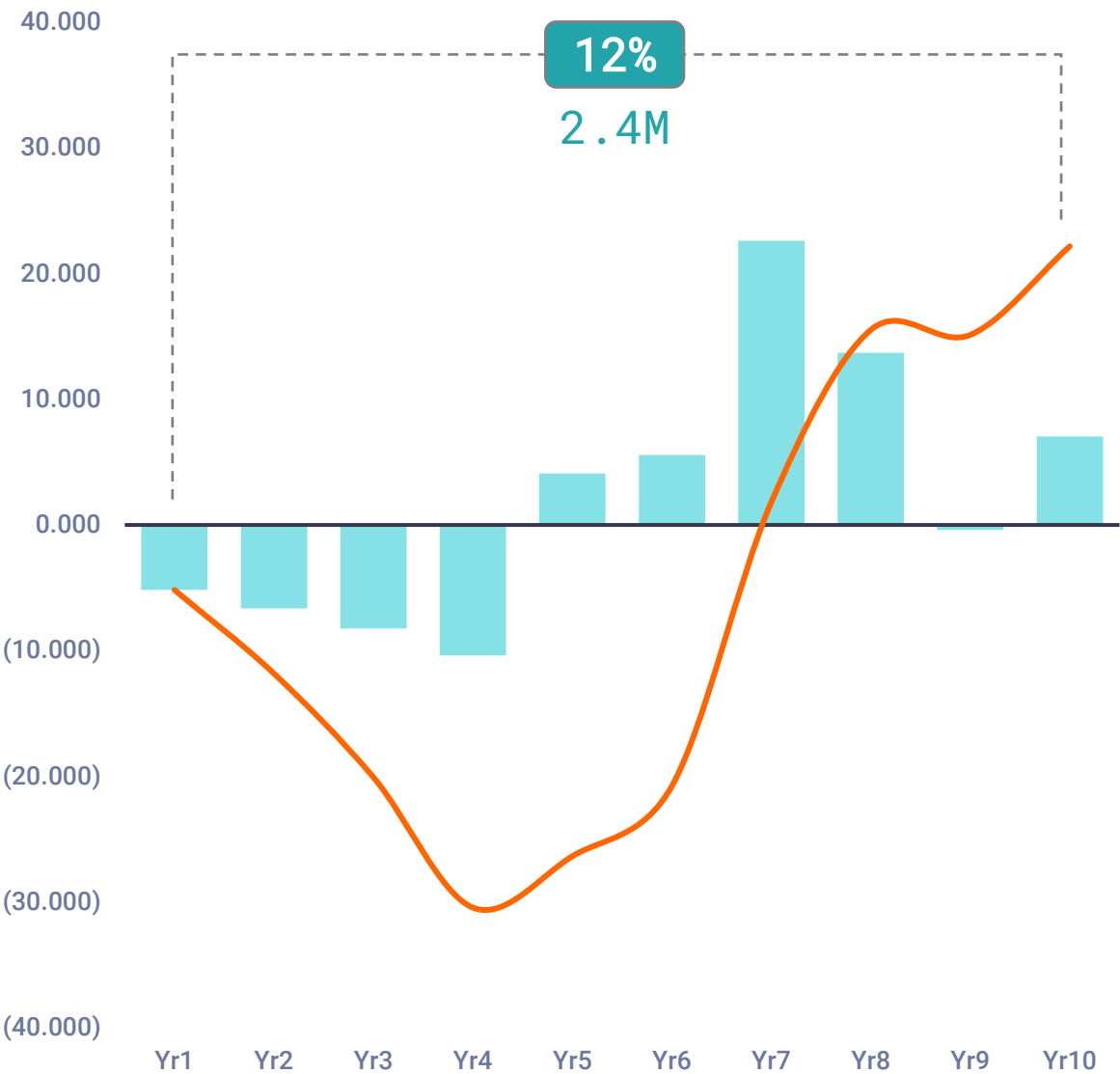
Investment 1



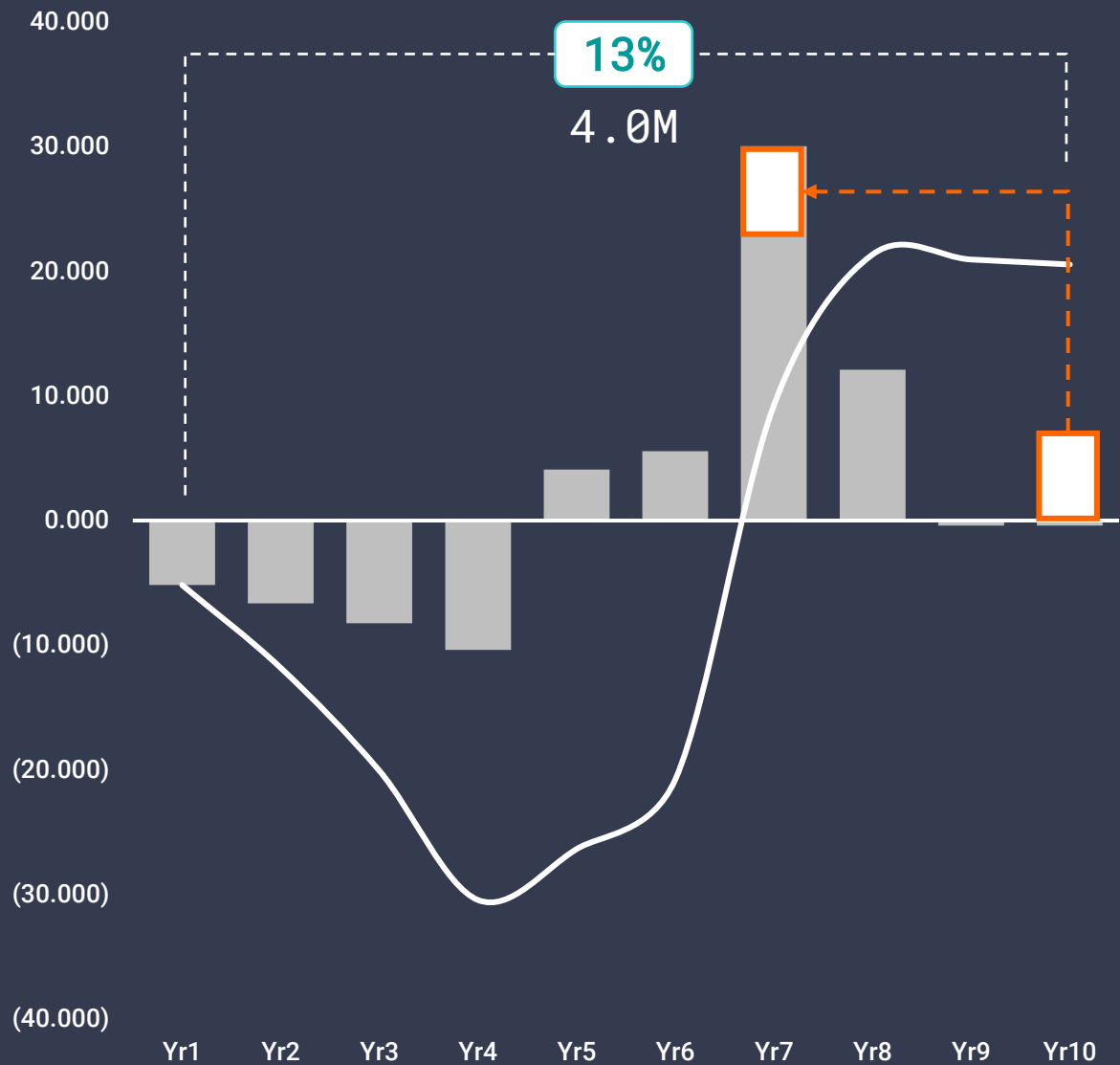
Investment 2



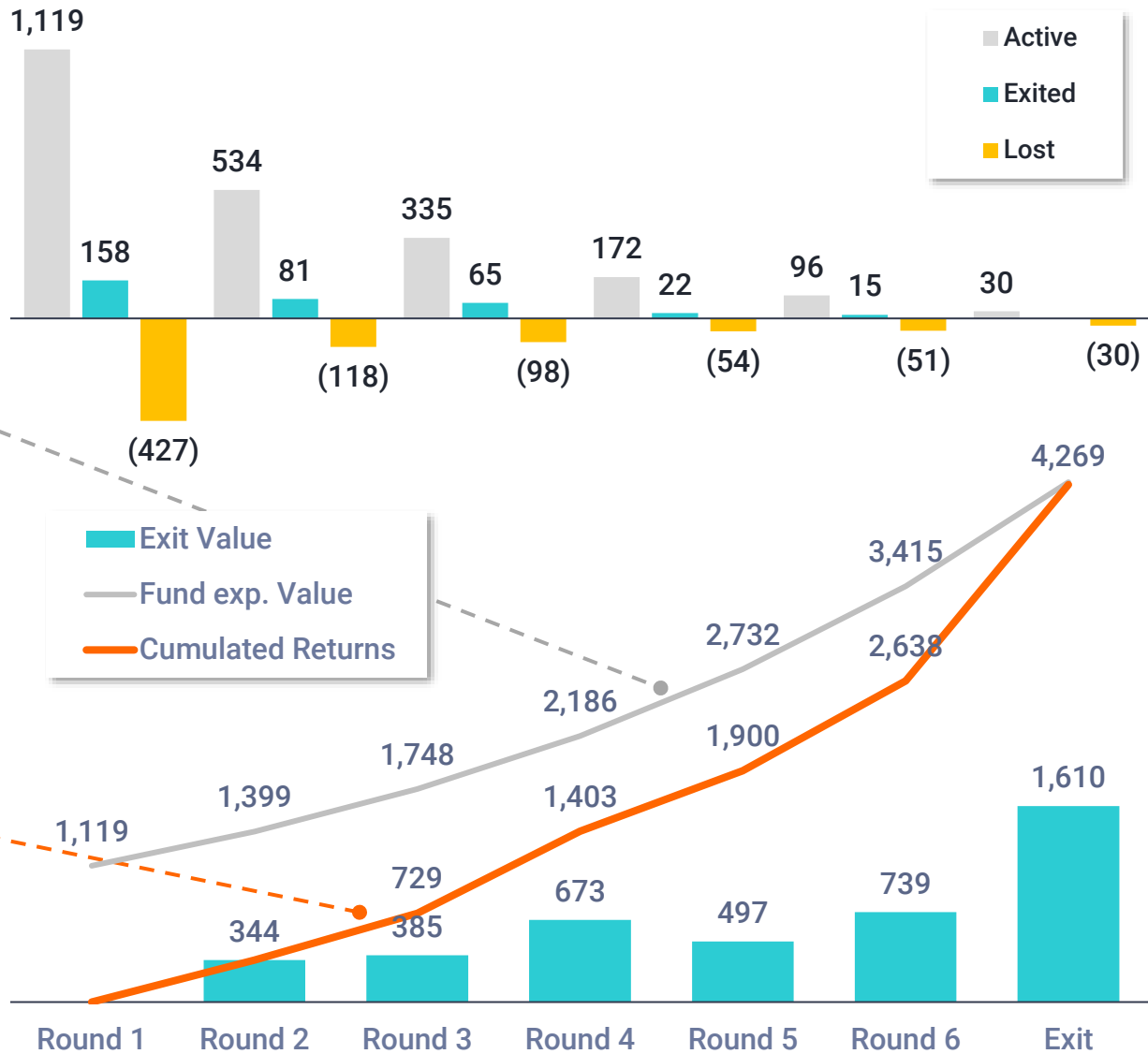
Time is fundamental for fund manager's carried interest



Simulation: the positive cash flows generated by year 10 exits in the previous chart are anticipated to year 7, without changing the nominal value. Fund's IRR increases by 1% and carried interest value increases from 2.4M to 4.0M



Portfolio effects in risk-reward expectations

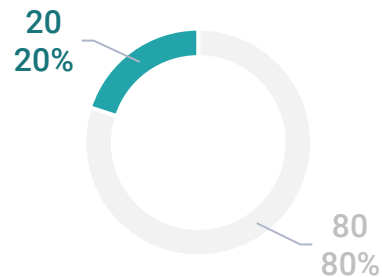
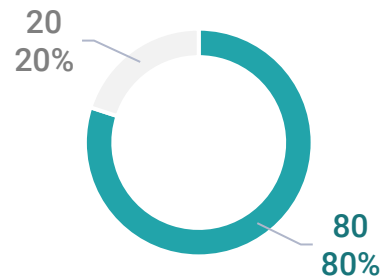
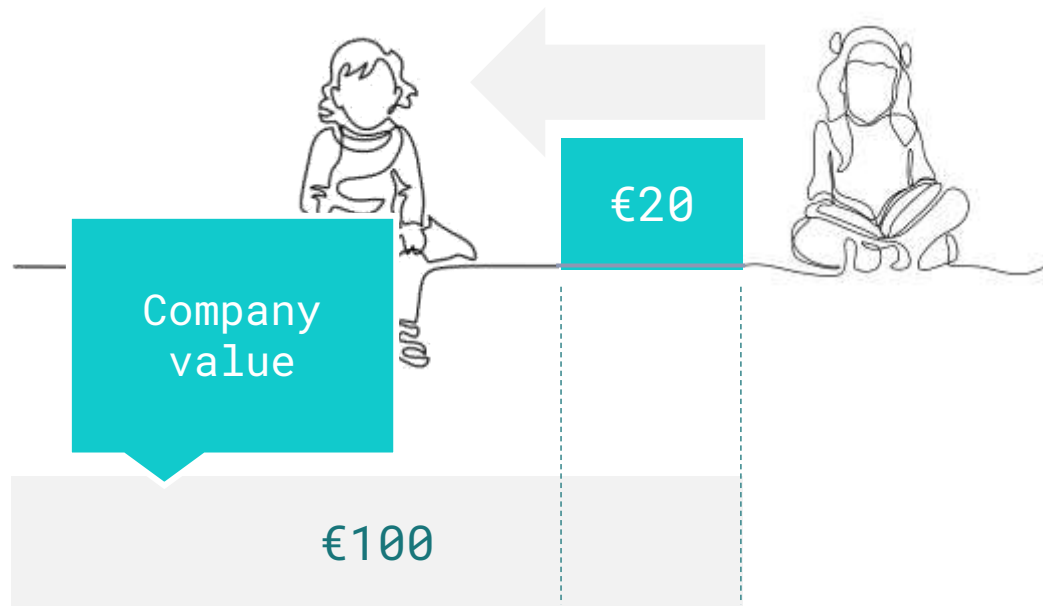


Target IRR per stage

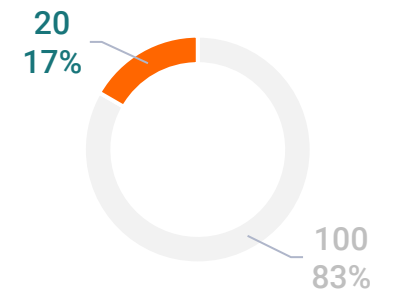
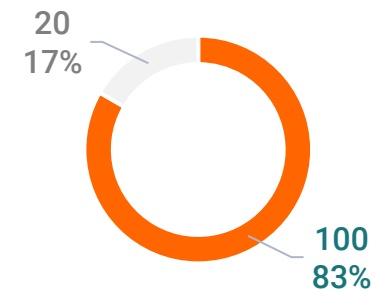
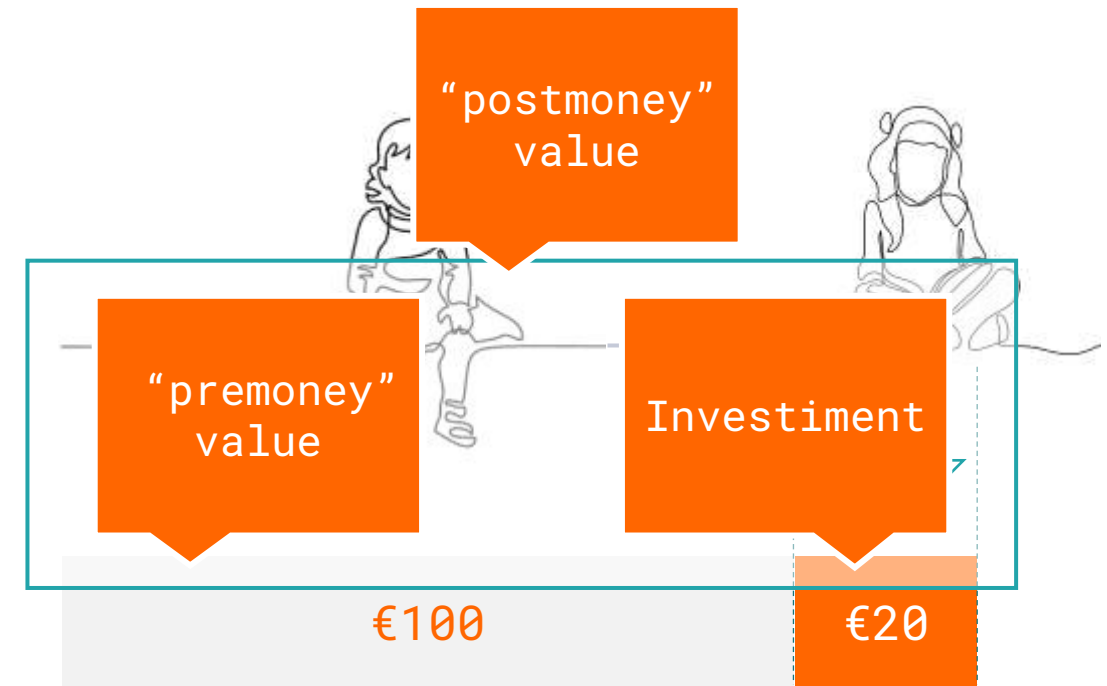
Source: Patrick Frei & Benoît Leleux ; Jean-Pierre Vuilleumier, Angel Days

| Stage | Target IRR |
|-----------|------------|
| Seed | 70-100% |
| Start-up | 50-70% |
| Round A/B | 50-70% |
| Round C/D | 35-50% |
| Expansion | 25-40% |

Buyout



Capital Increase





- Time is a relevant variable in any investment decision
- Every investment has a risk associated with
- The higher the risk, the higher the expected reward

Fair value of a (startup) company is all about shared expectations on future returns

TODAY (for sure)



AFTER (?) YEARS (hopefully)



Using the most common methodologies is often inappropriate for startup companies



MULTIPLES

EV/Sales

"This Valuation Technique is likely to be appropriate for an Investment in an established business with an identifiable stream of continuing earnings or revenue that is considered to be maintainable."

EV/EBITDA

DCF

DCF

"The Discounted Cash Flows (DCF) technique is flexible in the sense that it can be applied to any stream of cash flows (or earnings). In the context of Private Capital valuation, this flexibility enables the Valuation Technique to be applied in situations that other techniques may be incapable of addressing. While this Valuation Technique may be applied to businesses going through a period of great change [...], there is a significant risk in utilising this Valuation Technique."

Investors evaluate companies based on expected returns

Analyse business hypotheses

Evaluate risk

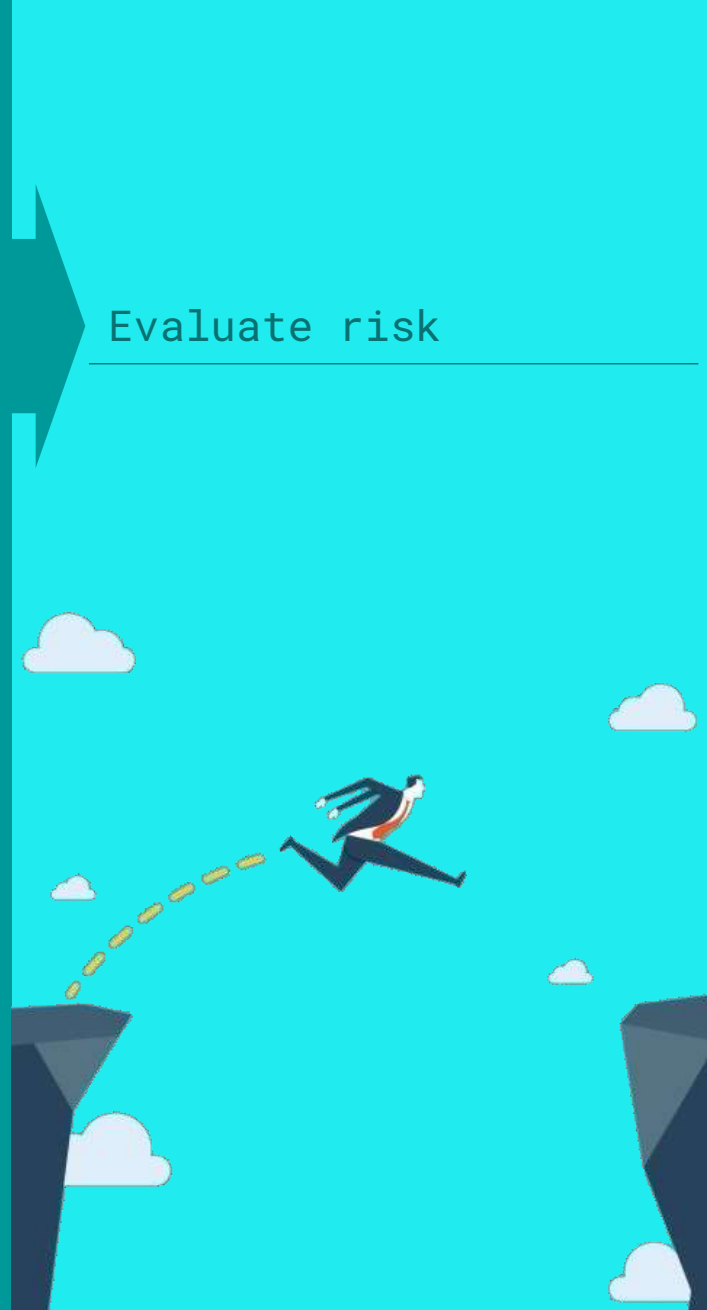
Determine expected returns (IRR)

Capturing the value

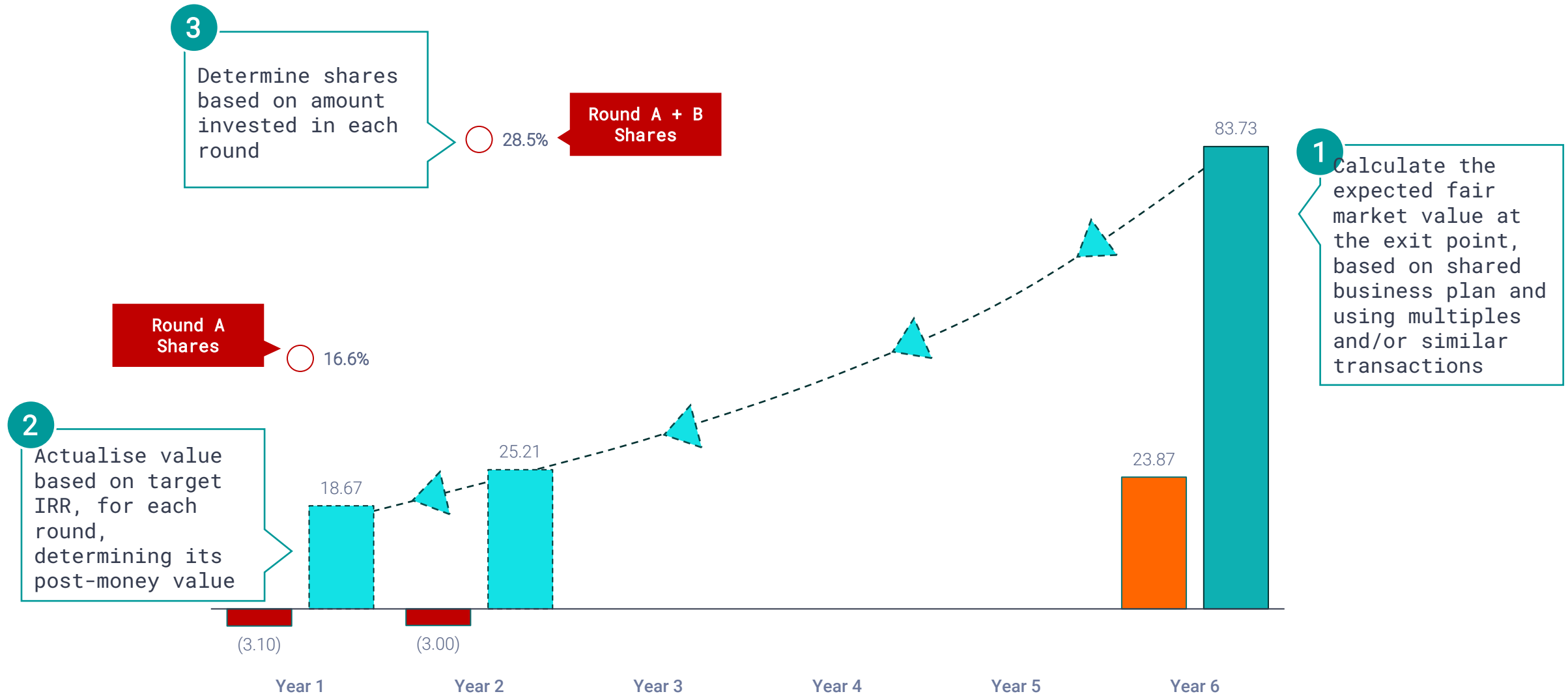
Market need & customer experience

Market size and trends

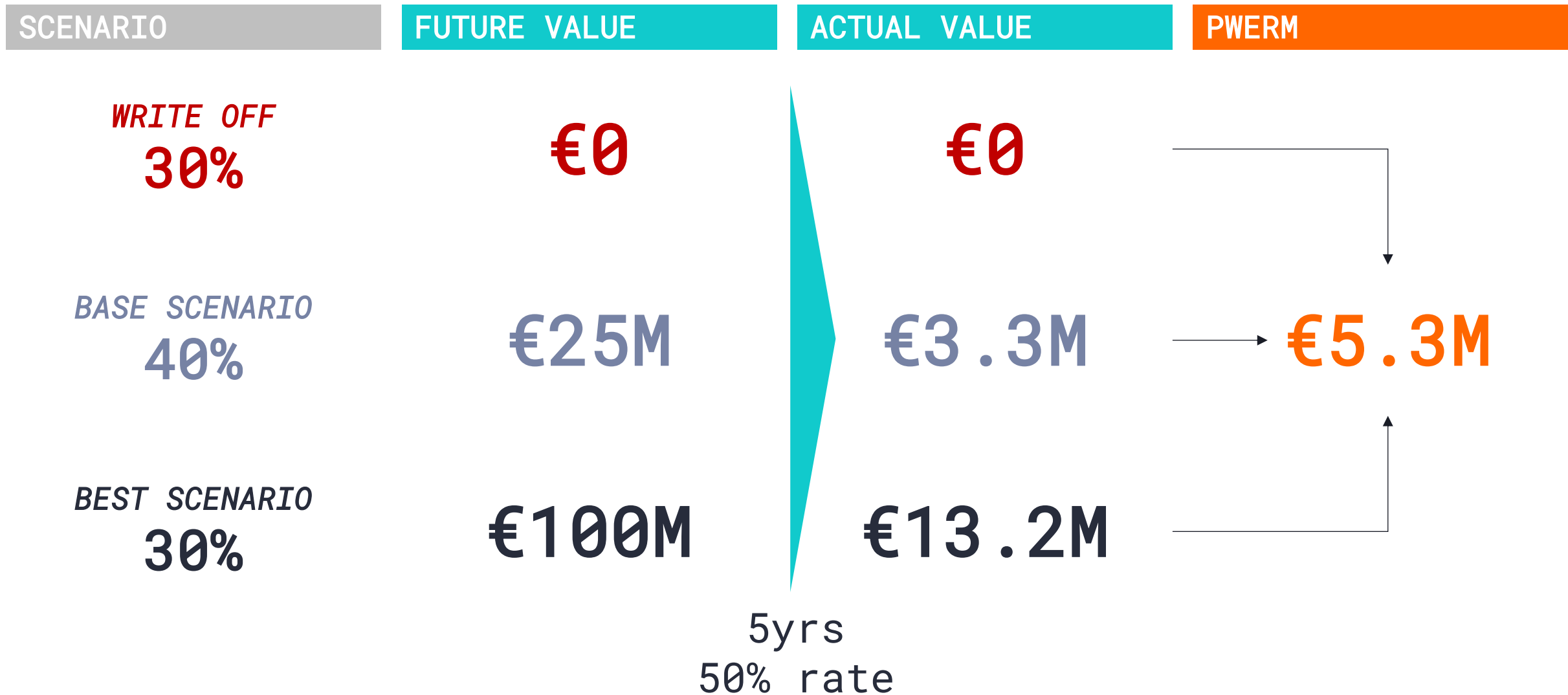
Solution and its uniqueness



Venture capital method determines the price (pre-money valuation) investors are willing to pay for each round based on expected exit value and target IRR (which is risk-correlated)



Probability Weighted Expected Return Method

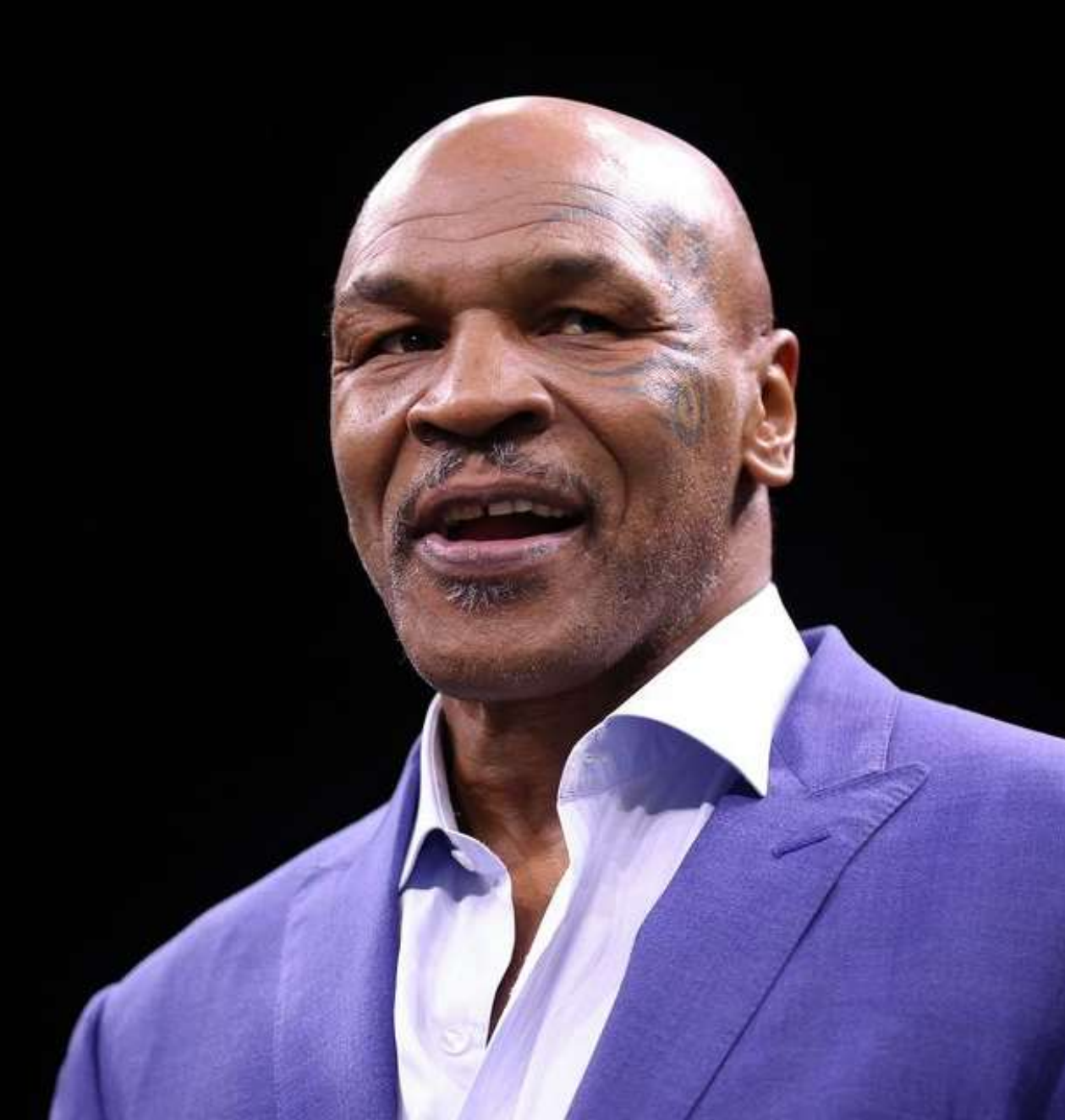




Business Planning

Business

Planning



“Everyone has a plan until they
get punched in the mouth”

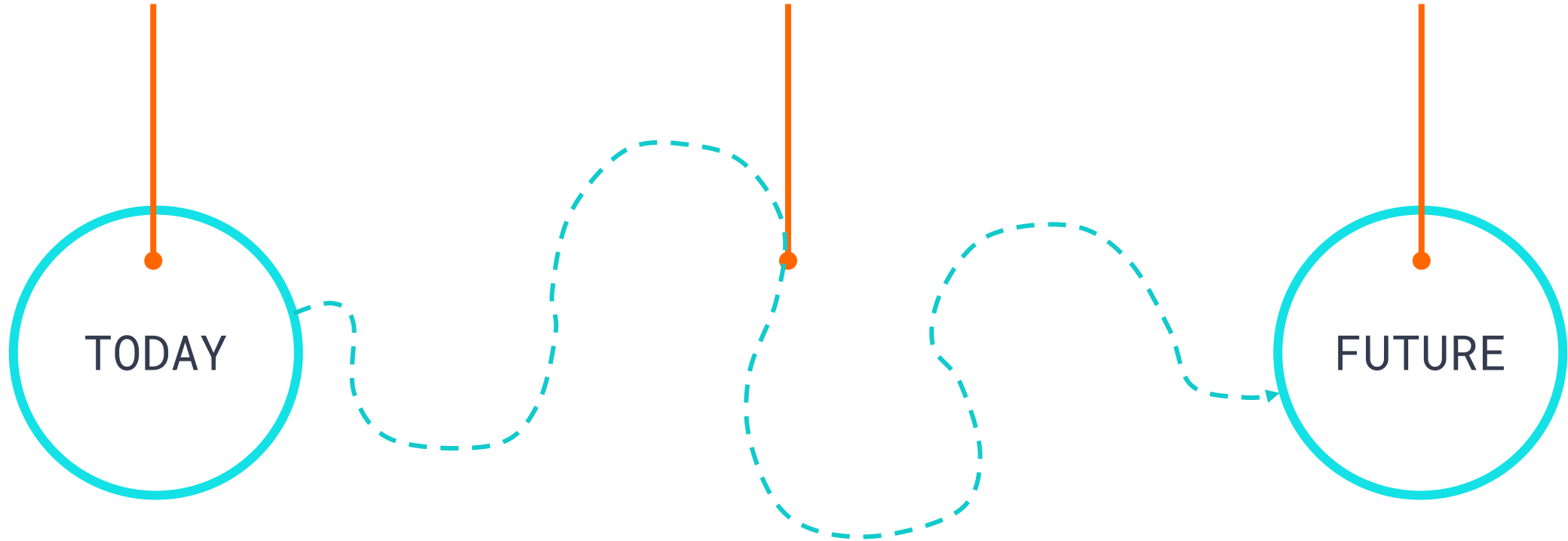
Mike Tyson

Business plan is a document describing company's business activities and how it plans to achieve its goals

Where is our company today?

How are we going to get there?

Where do we want to go?



Business planning is a fundamental process for both established companies and start-ups

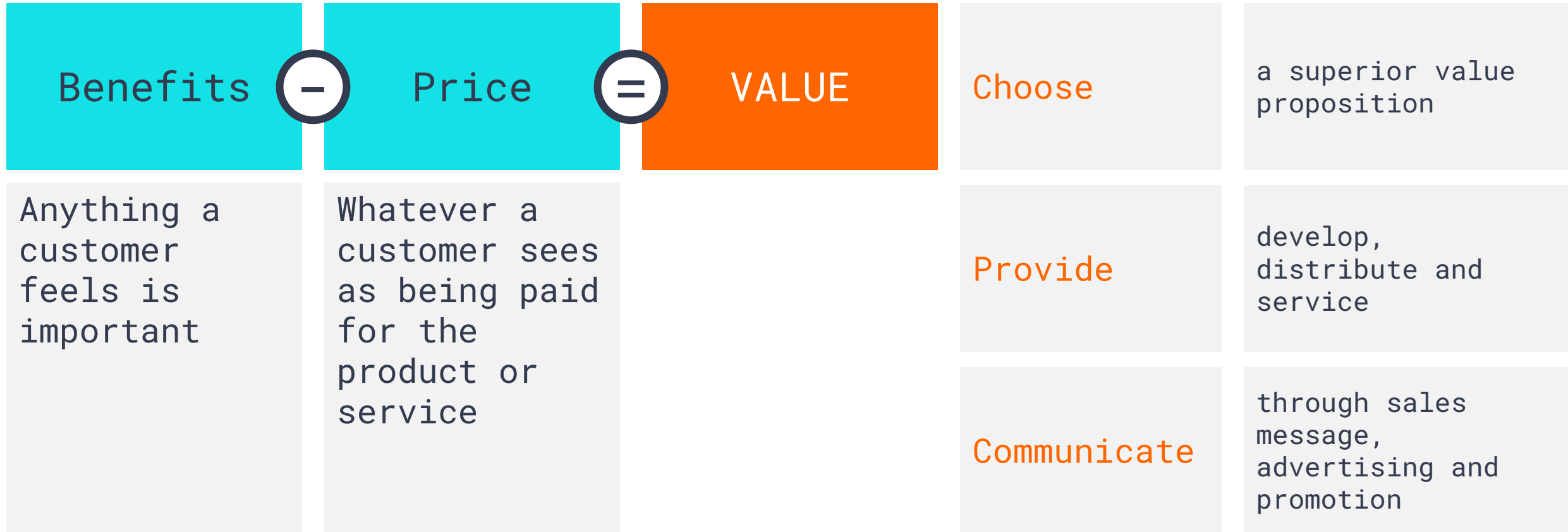
| | Internal stakeholders | Find resources | Revision of plan |
|----------------------|---|---|------------------|
| Established business | <ul style="list-style-type: none">• Think through ideas before investing• Highlight obstacles | <ul style="list-style-type: none">• Evaluate investment plan• Support lending requests | Once per year |
| Start-up company | <ul style="list-style-type: none">• Keep management team on the same page• Set up priorities and stick to them | <ul style="list-style-type: none">• Attract investors and close new investment rounds | Quarterly |

Business

Planning

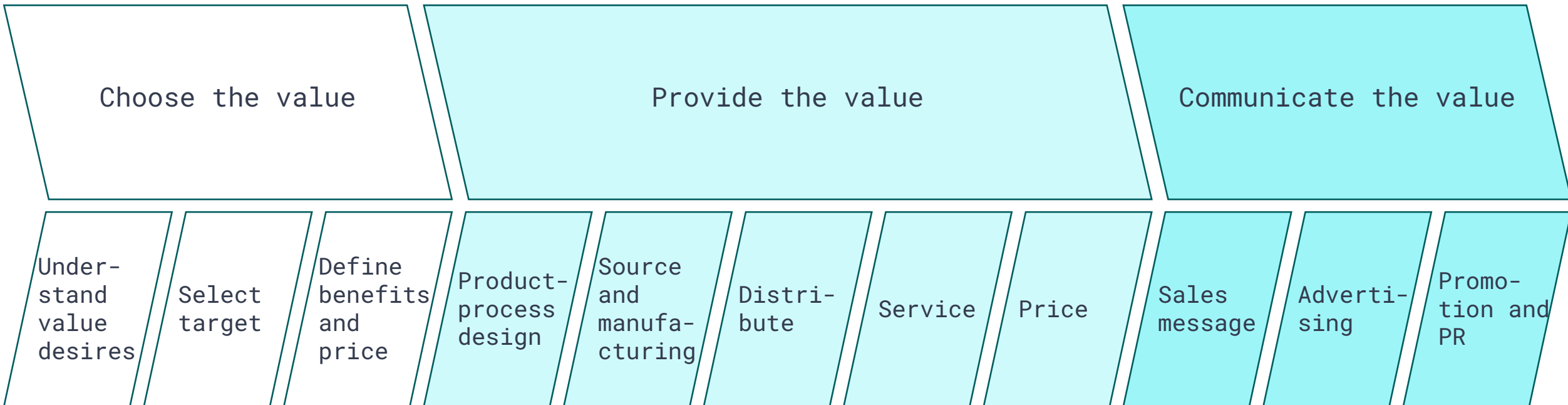
“A business is a superior Value Delivery System”¹

¹ M.J.Lanning, E.G.Michaels, McKinsey Staff Paper, 1988



To make a sound business plan, the company should be shaped and analysed as a Value Delivering System

Our elaboration based on M.J.Lanning, E.G.Michaels, McKinsey Staff Paper, 1988



Understanding customers' benefit and price desires is mandatory to see how a company can create value

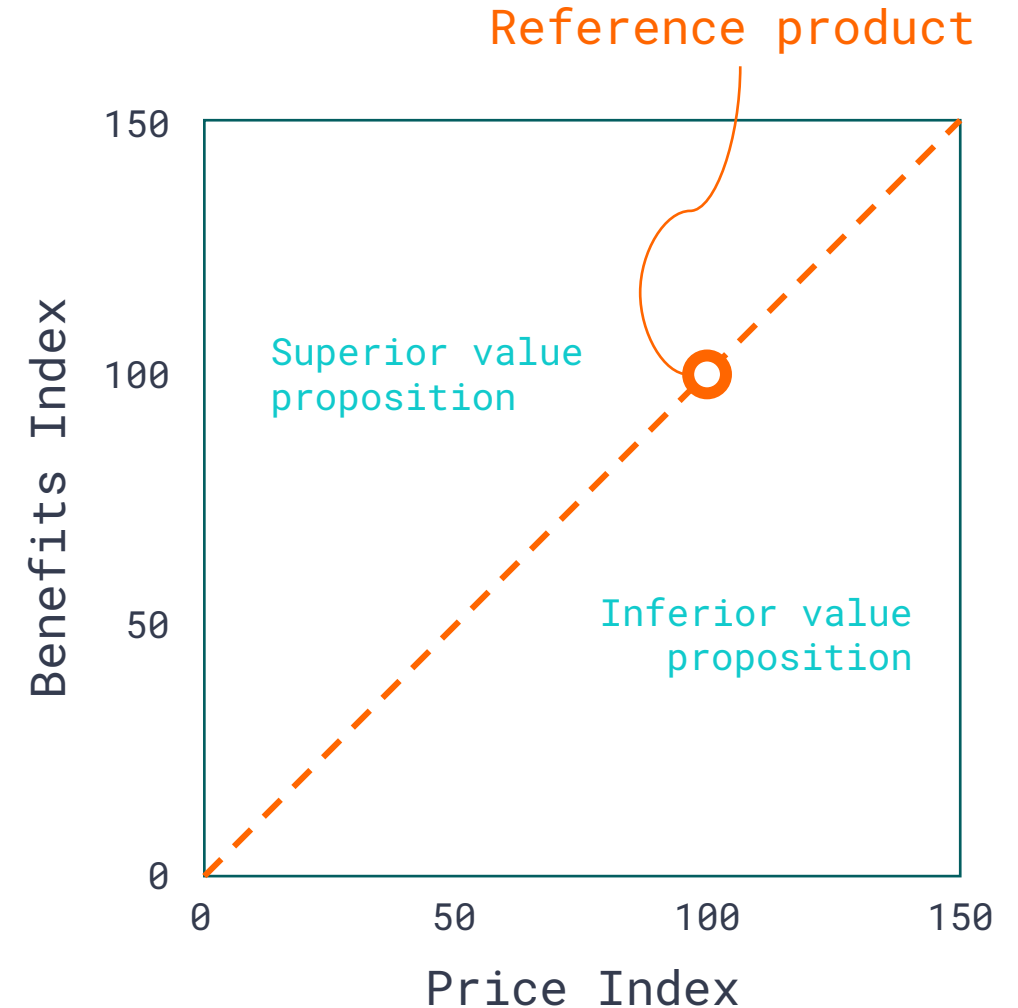
Our elaboration based on M.J.Lanning, E.G.Michaels, McKinsey Staff Paper, 1988

Look for very specific benefits:

- Jeans: not just “quality” but “durability”, “consistency of colour” etc.
- Cars: not just “performance” but “speed”, “acceleration”, “fuel consumption”.

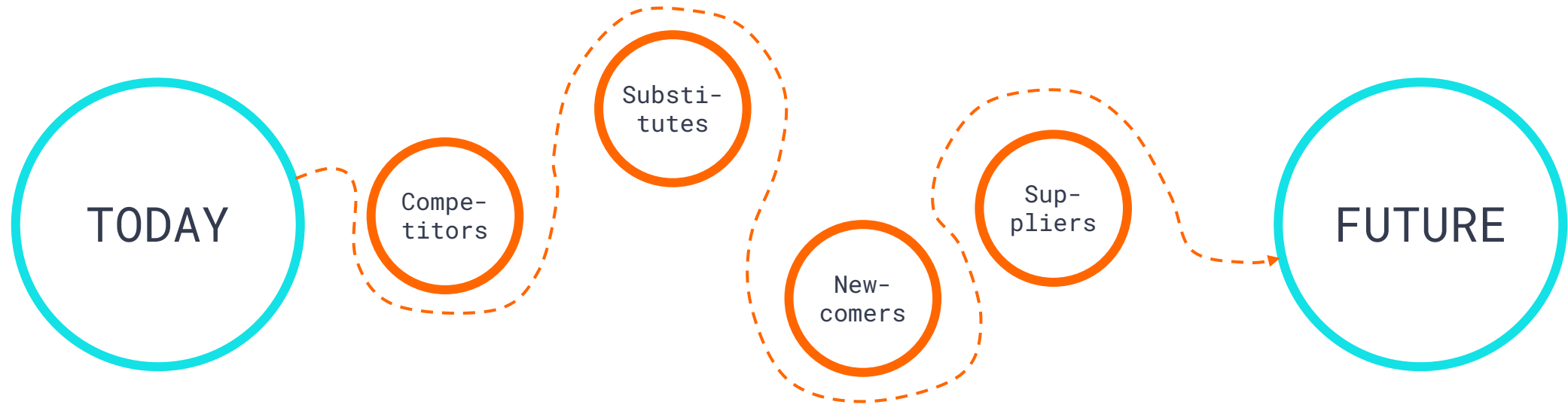
Find what customers would really pay:

- Price
- Lifecycle cost
- Switching costs

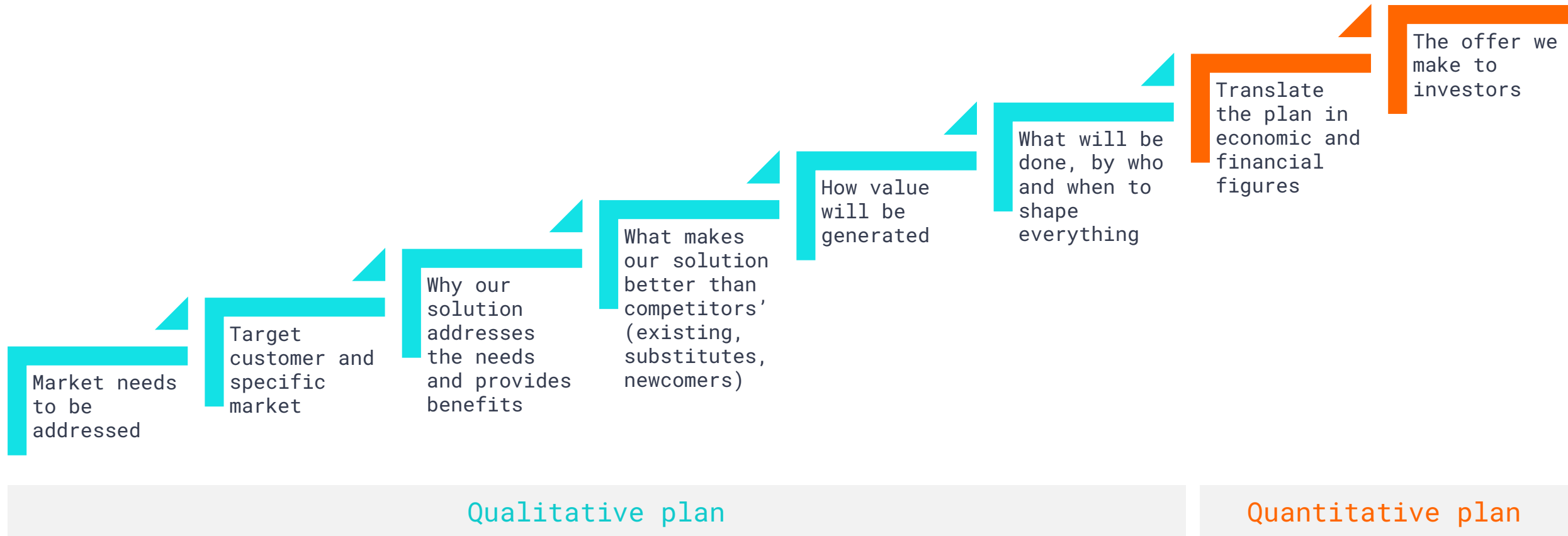


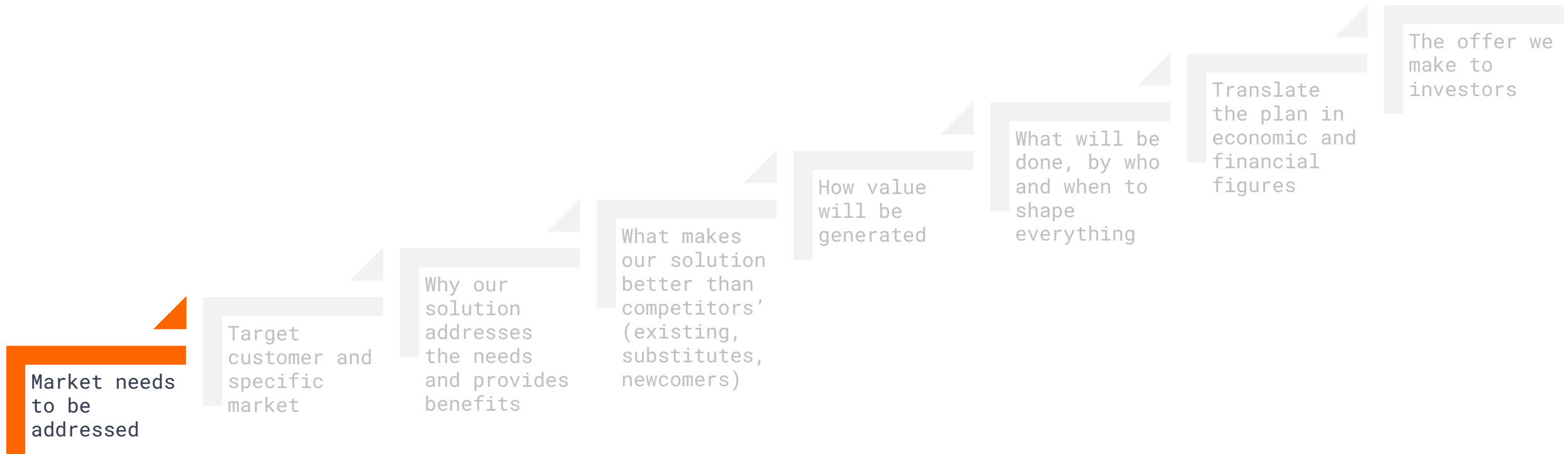
A business plan should indicate how the company would reach its goals beside all obstacles along its path

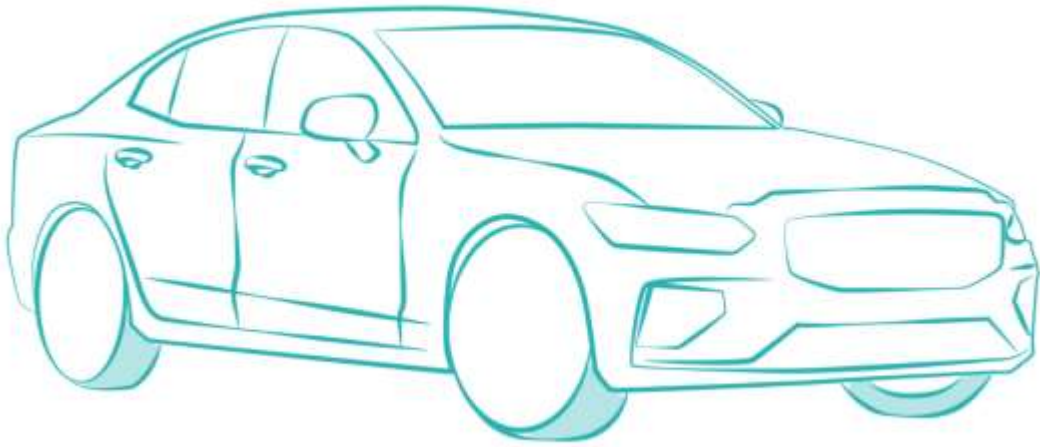
Our elaboration based on M.E.Porter, "The Five Competitive Forces That Shape Strategy", Harvard Business Review, 2008



There are several points a sound business plan should address

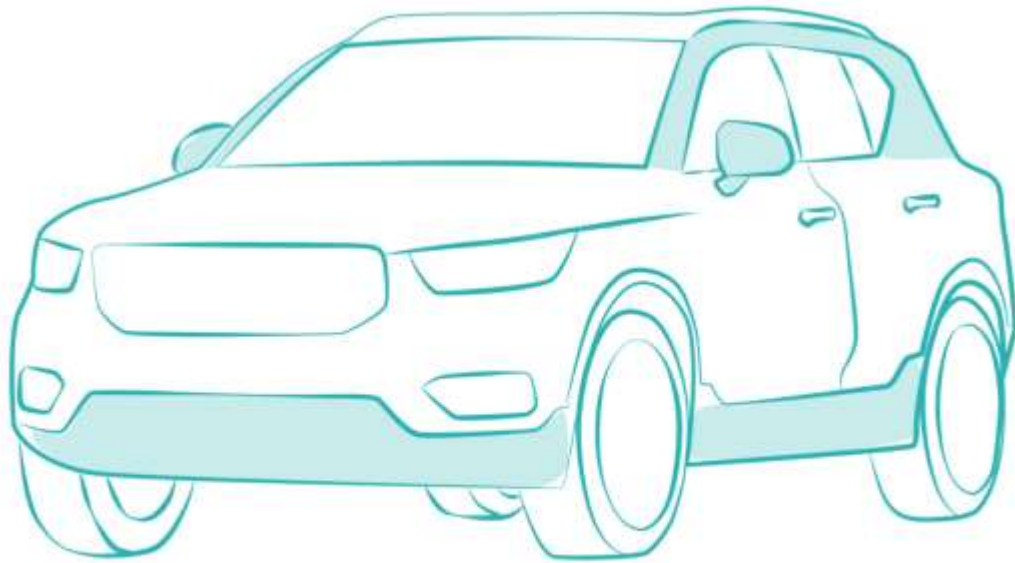






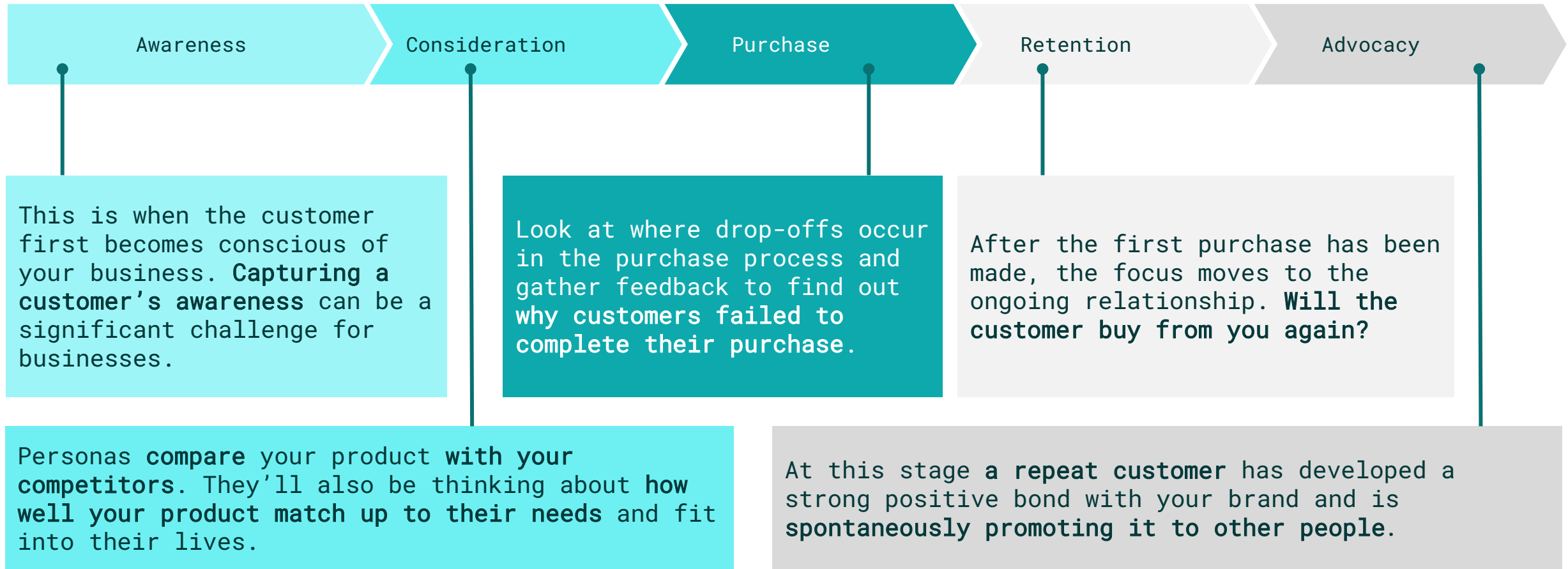
Choosing a car

What would you be looking for?



Needs to be addressed should be considered throughout the whole customer journey

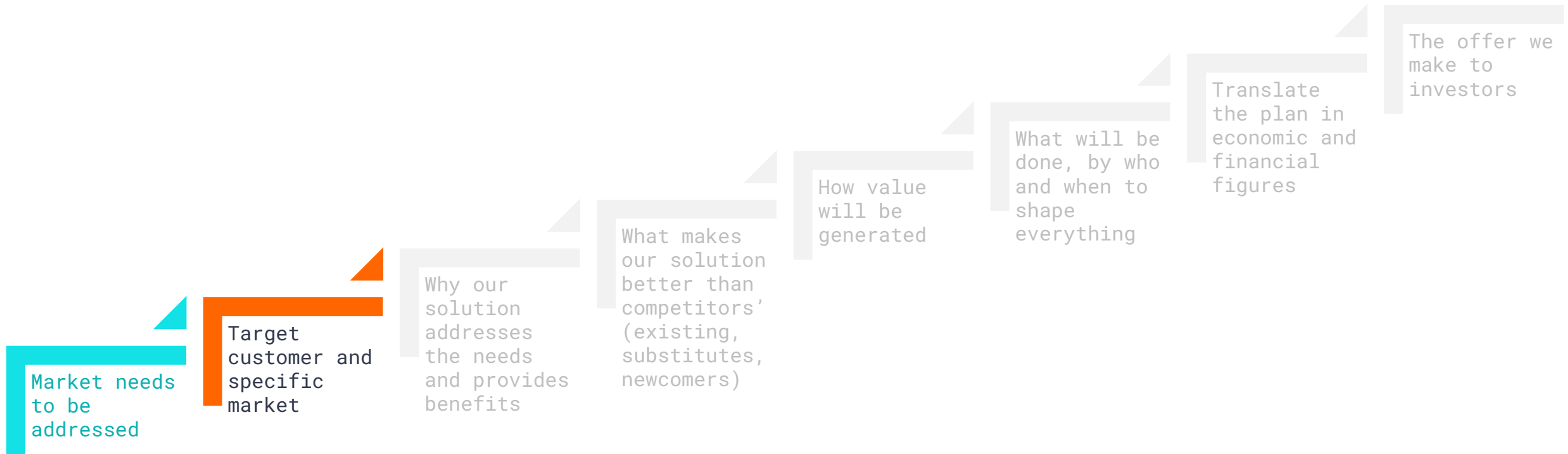
Source: our elaboration based on "Guide to creating user personas", Justinmind, 2020



Key questions on needs a business plan should answer to

- How big is the problem or the cost of not having the solution?
- Are those who have the problem aware of it?
- Do we have objective elements to validate the need of the market?
- Are there any beta users?
- Are potential customers ready to buy the solution without aggressive demand creation campaigns?
- Who really are our customers: who uses, who pays, who decides, who influences the decision?





Every market segment in each industry has very specific dynamics, needs and players

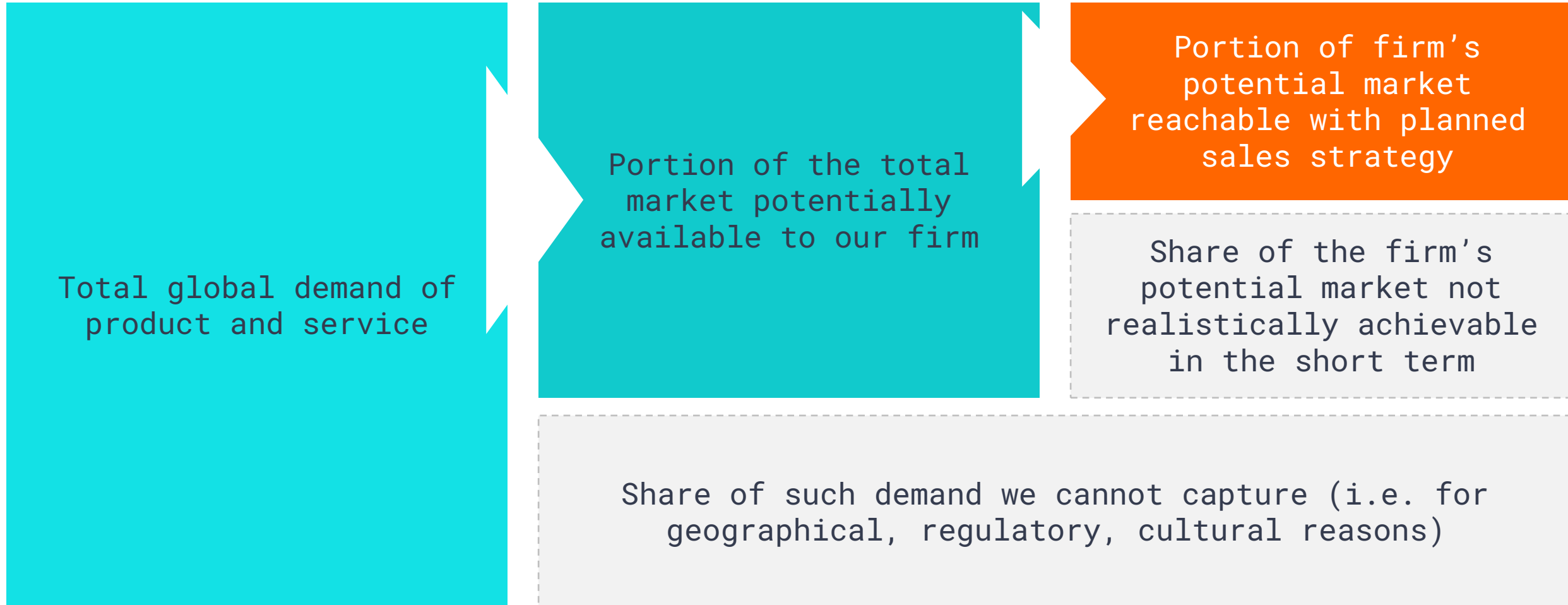
Passenger

| | Turbofan | Turboprop |
|-------------|--|---|
| Wide body |  | none |
| Narrow body |  | none |
| Regional |  |  |

Freighter

| | Turbofan | Turboprop |
|-------------|--|--|
| Wide body |  | none |
| Narrow body |  |  |
| Regional |  |  |

Once the target market is identified, we should understand which slice of it our company would reach



Market size and future sales guesses is a balanced top-down and bottom-up approach



Move from the concept of the lonely customer to a wider perspective on all “personas” involved in the customer journey

Opinion Leader



End user



Decision Maker



Service Engineer



In every market there are multiple people involved in the product journey. each one's benefit should be met.

Distributor



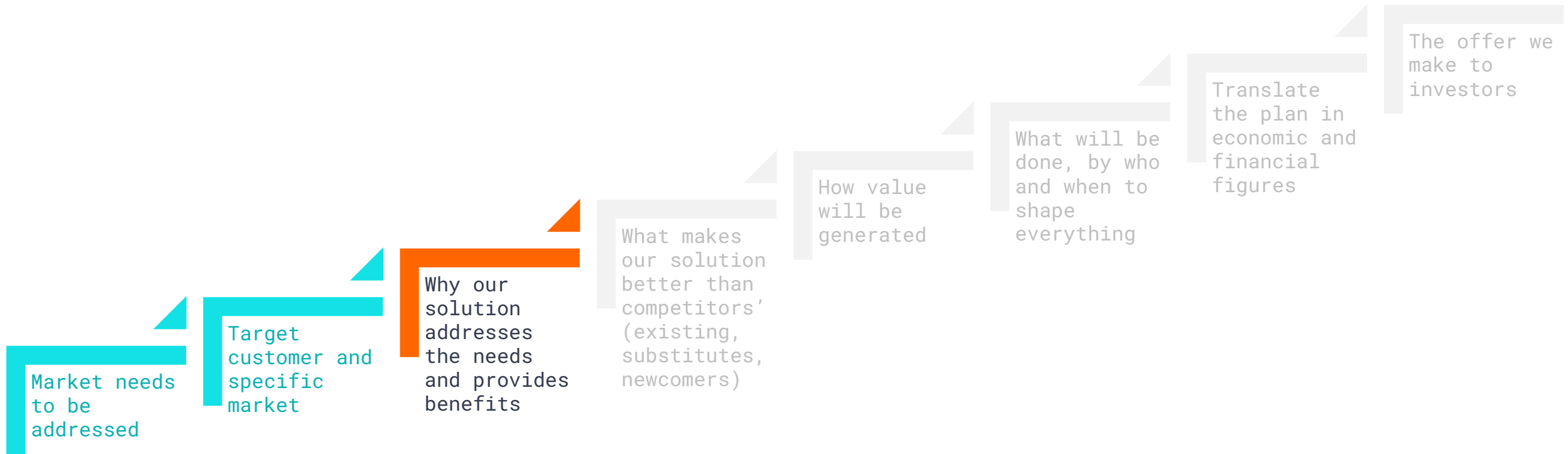
Payer



Beneficiary



- End users
- Decision makers
- Payers (authorise the purchase)
- Distributors
- Opinion leaders/influencers
- Post sales / service team



Addressing the needs goes beyond their resolution...

Perception



Demonstrate that your customers are aware of their problem and willing to address it. If not, show how you will raise awareness.

Acceptance



Your solution (product or service) has to be accepted by customers. Describe how and why.

Satisfaction



Describe how benefits are going to be satisfied. Be very specific and fact based.

Side effects



Analyse any perspective side-effect of your solution, raising the switching costs for your customers.

...and a business plan should include a technical and market validation of the solution

Proof of concept

- Lab data
- Early customers feedbacks
- References.



Prototype

- Results of pilot trials with launch/beta customers.
- Pipeline of launch sales.

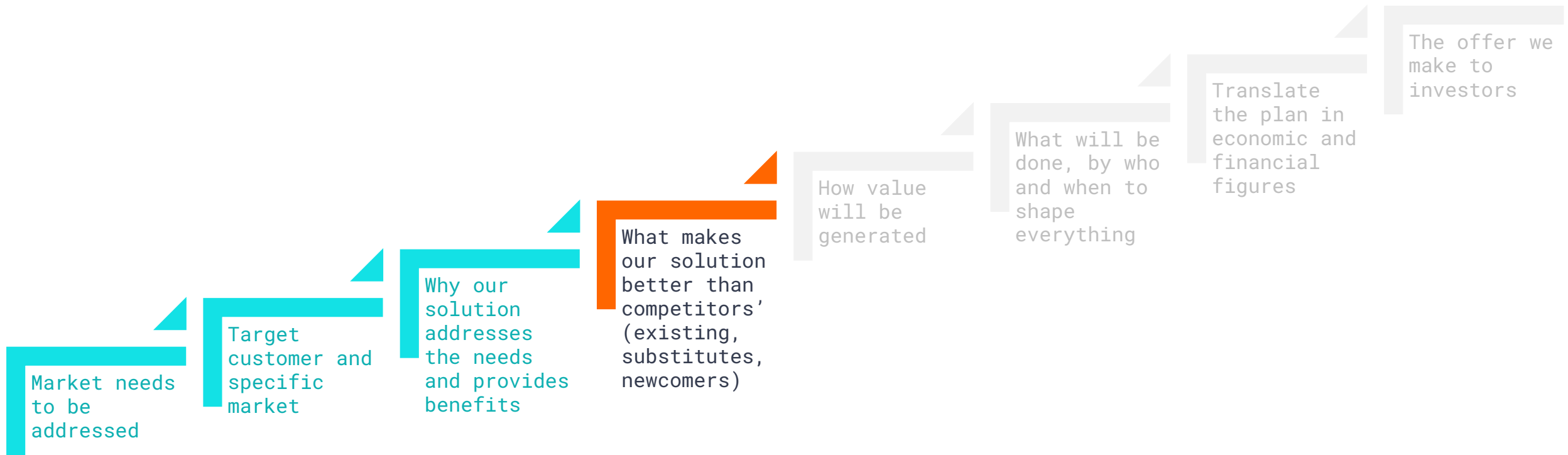


Product in the market

- Market feedbacks
- References
- Traction
- Conversion rates from lead to customer.



Maturity of product



Any business ALWAYS have competitors...

Competitors

Companies selling the same product to the same customers' target.

Zero-sum game



VS



Substitutes

Companies solving the same need with different products.

Not Zero-sum game



VS



No purchase

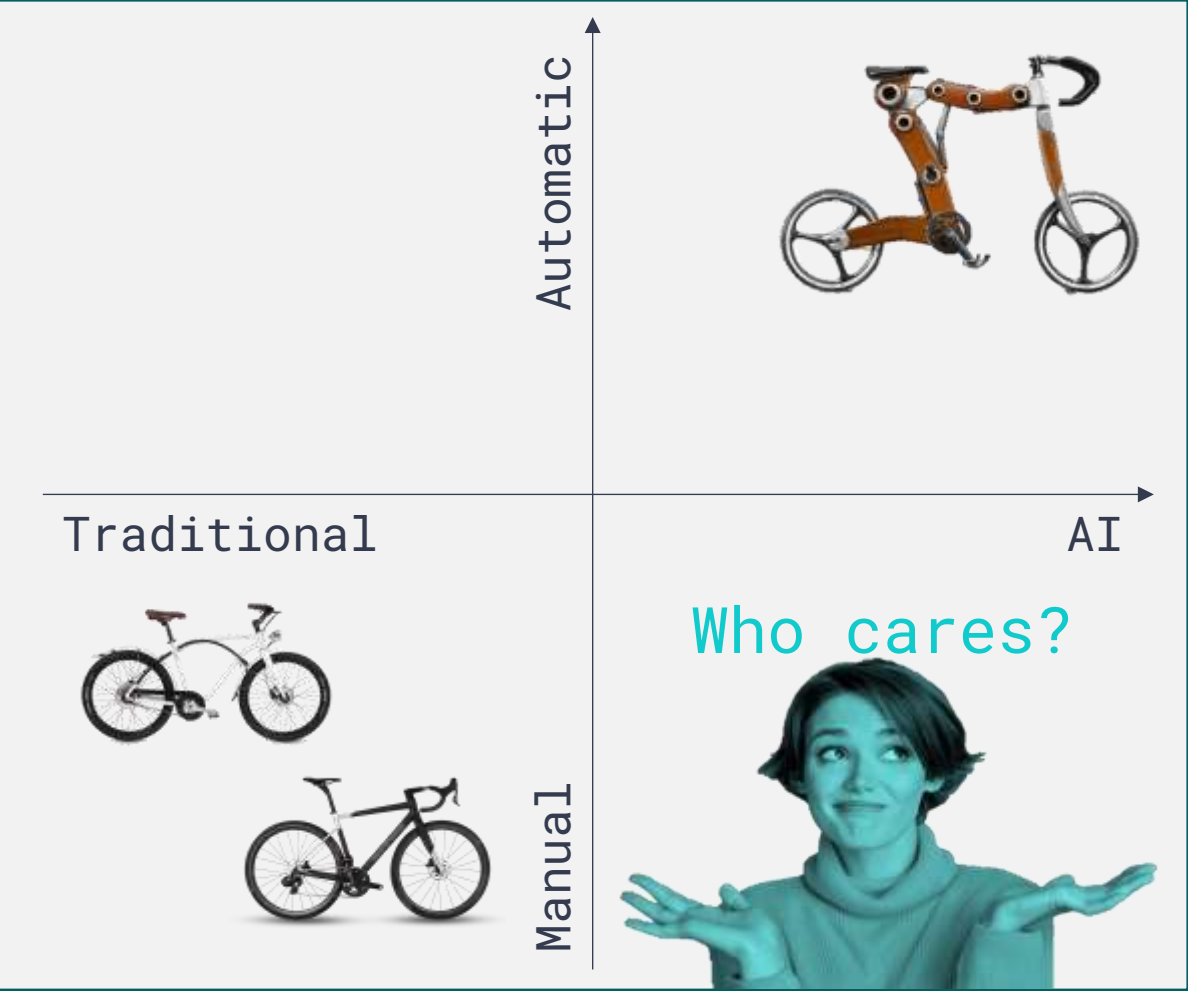
Customers always have the option not to buy.



VS

Competitive positioning has to be defined against benefits, not technical features

“Our company is the only one offering an AI driven, automatic bike gear”



“We enable safe and effortless bike climbing”





Start-up companies should
address both sides of
barriers to entry

Any business plan should show how a company copes with incumbent's barriers to entry and creates new ones

ENTERING THE MARKET

Incumbents have their barriers to entry and will react if your business becomes a threat to theirs

BARRIERS

- Much stronger brand reputation (recognition by customers, opinion leaders and ability to influence them)
- Intellectual property (make an FTO!)
- Financial strength (for any legal dispute too)

POTENTIAL REACTIONS

- Dumping (they serve global markets; dumping will be limited to markets where your company is entering in)
- Raising switching costs (i.e. lowering discounts for distributors signing agreements with your company)

HOLDING POSITION AND GROWING

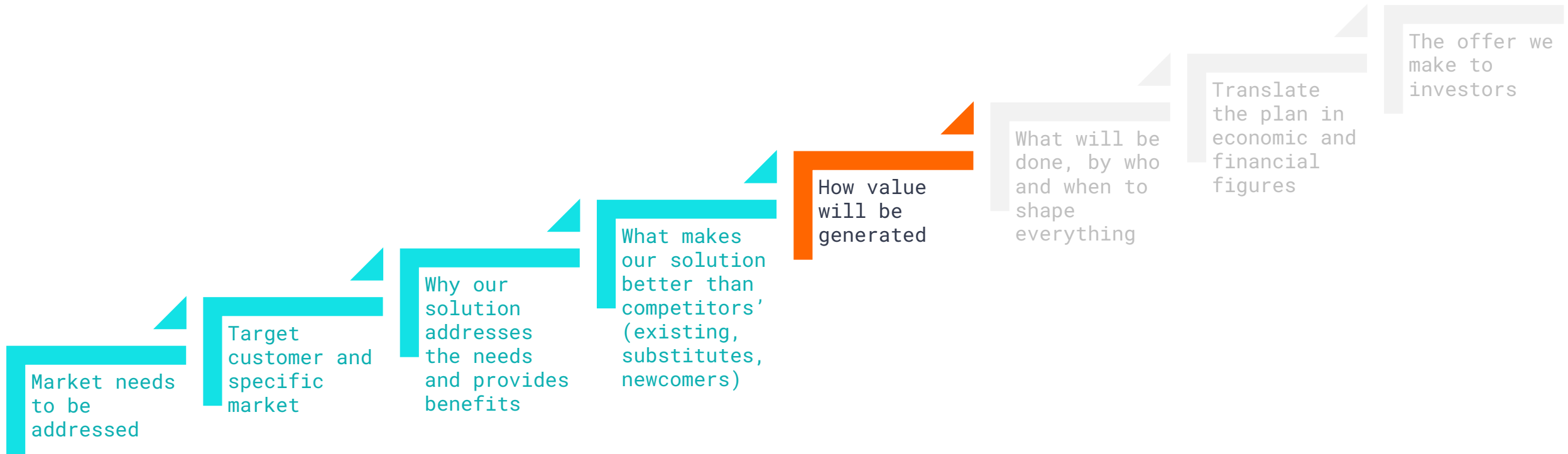
Once your company enters the market, it should create its own barriers to entry and deploy a growth strategy

BARRIERS

- Intellectual property
- Invest in brand (do not look like a start-up and attract opinion leaders)
- Technological advantage (if your technology only enables critical performances and benefits)
- Include switching costs in your model

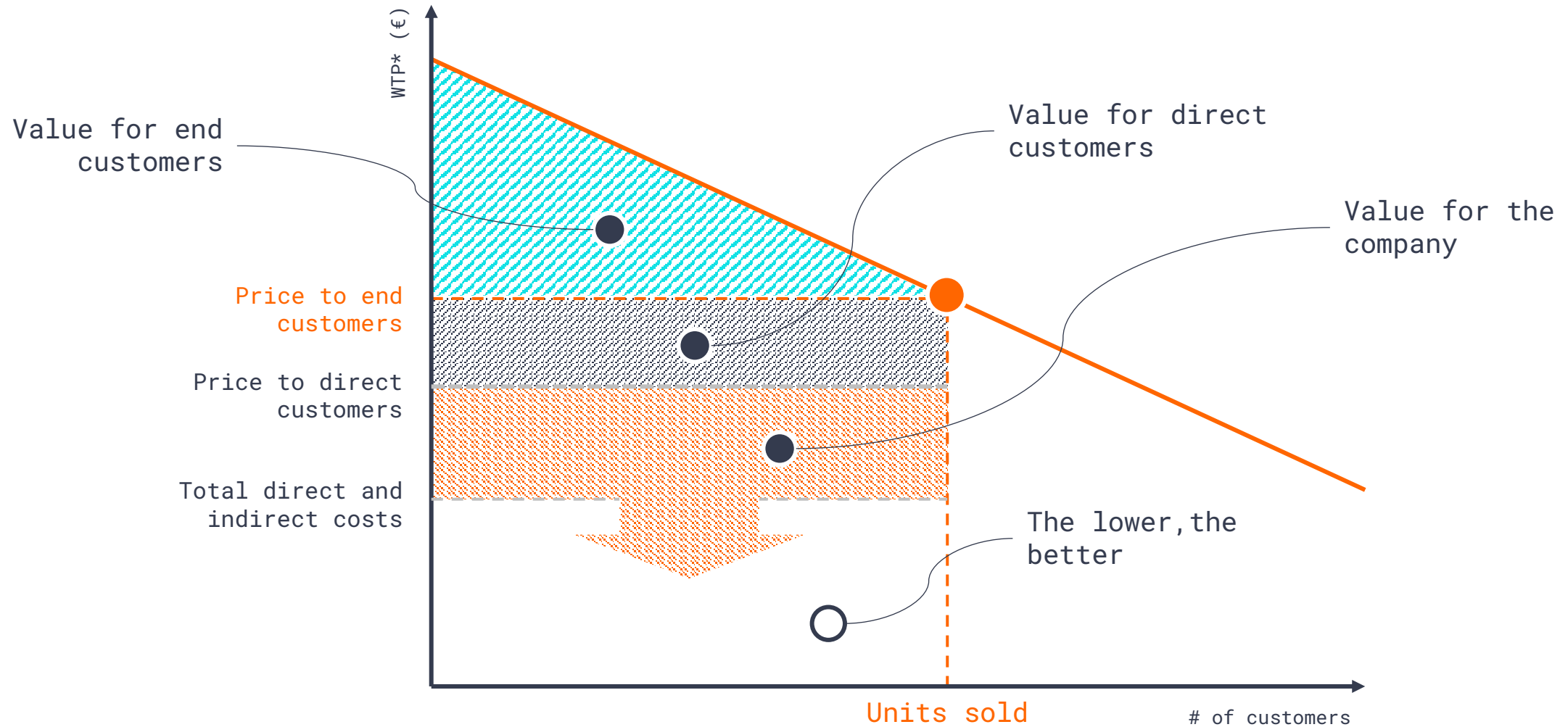
GROWING ACTIONS

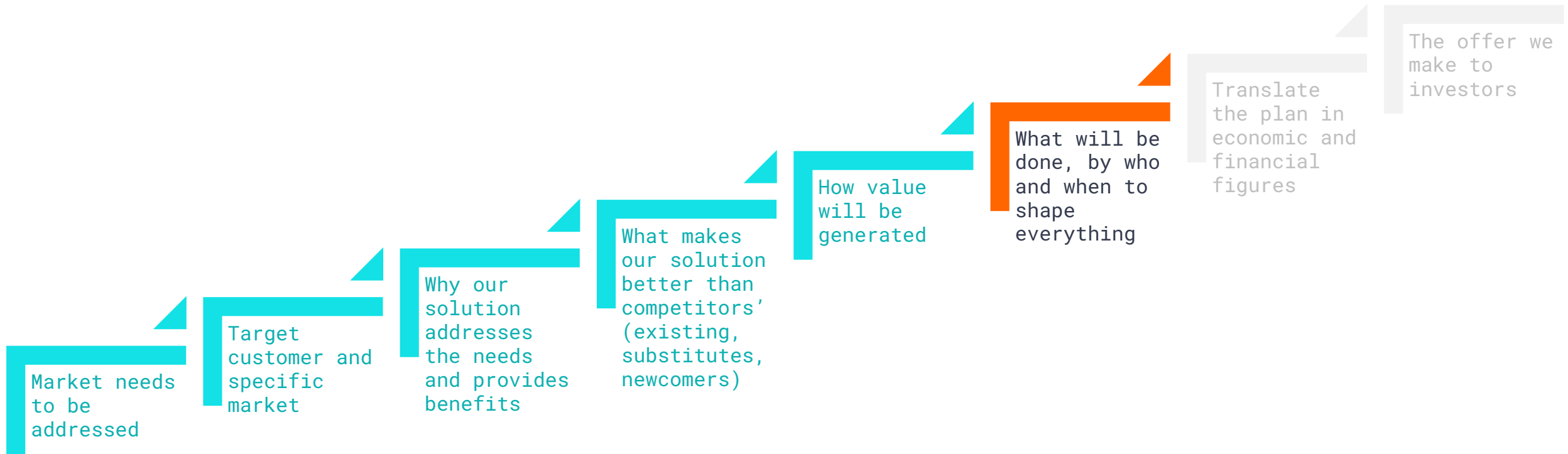
- Speed to market
- Invest in any service initially required to make the switch for your customers easier (i.e. system integration, training, re-engineering, free pilot use, etc.)



A successful business is the one creating value for all stakeholders

* Willingness To Pay





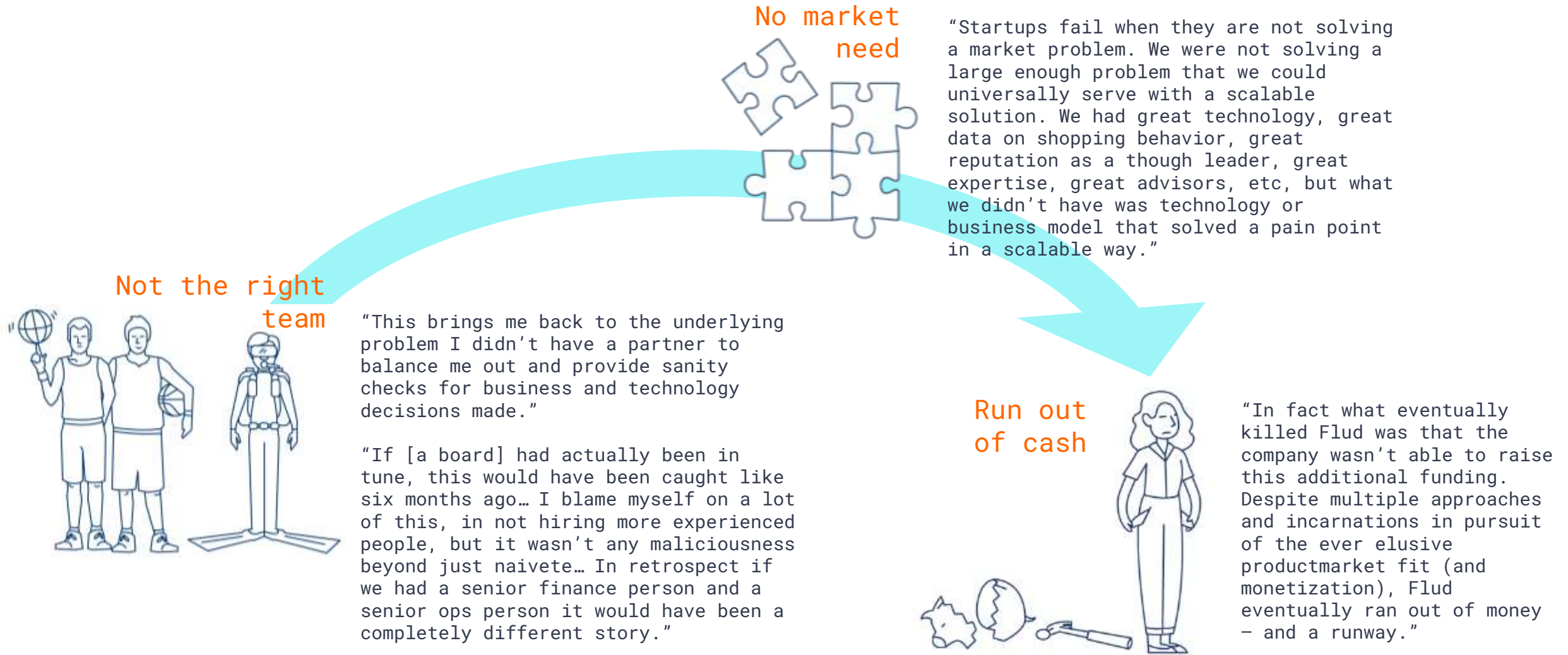


**“WINNERS MAKE THINGS HAPPEN.
LOSERS LET THINGS HAPPEN.”**

-UNKNOWN

Lack of appropriate management leads startups into a vicious cycle reducing their ability to raise funds and bringing them to fail

Quotes from «Top 20 reasons why startup fail», 2019, CBInsights



These are, therefore, the key questions the qualitative part of a business plan should answer to

What is the pain point we address and how big is it

Who has the need and how painful is it

What is our solution and how will it solve the needs

How is the need addressed today and why our solution will satisfy it more than others

Why our customers will buy from us and how we will make money

How we will make it happen

The offer we make to investors

Translate the plan in economic and financial figures

What will be done, by who and when to shape everything

How value will be generated

What makes our solution better than competitors' (existing, substitutes, newcomers)

Why our solution addresses the needs and provides benefits

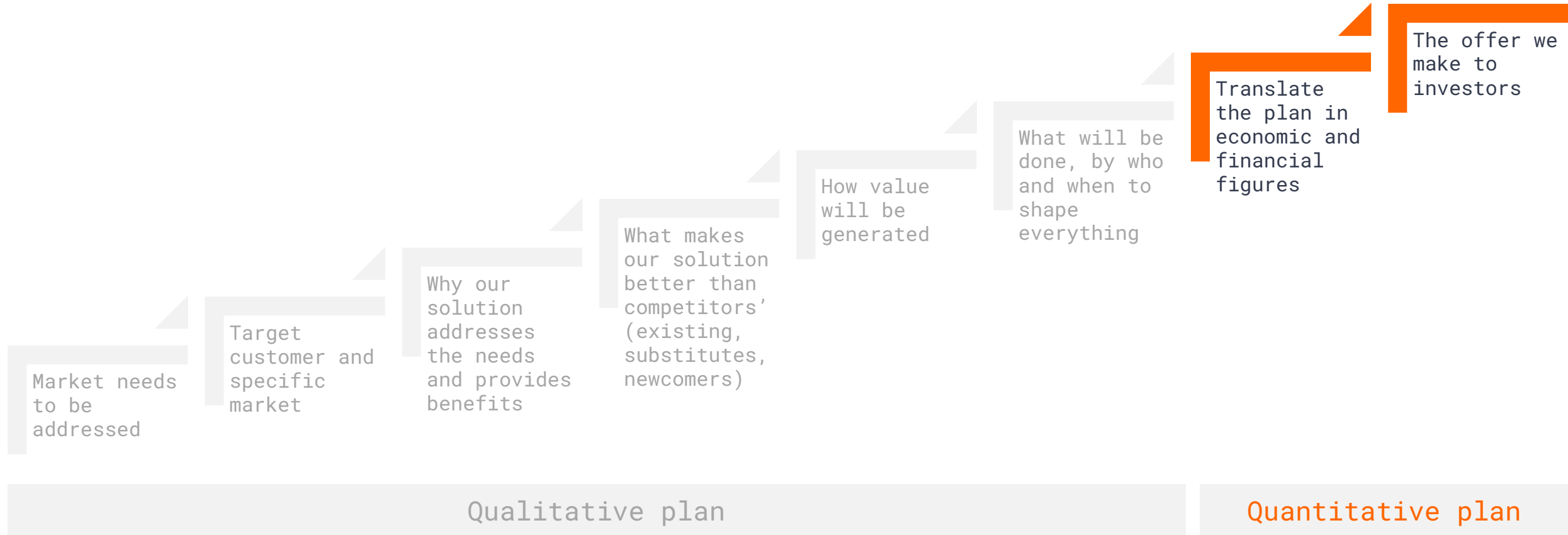
Target customer and specific market

Market needs to be addressed

Qualitative plan

Quantitative plan

Quantitative business planning translates business hypotheses into figures and expected returns for investors



The quantitative section of a business plan is made of three main sections

Translate the plan in economic and financial figures

Financial Projections

- Assumptions and comments
- Consistent revenue model
- 5 year detailed income statement
- 5 years balance sheet forecasts
- 24 month detailed cash flow planning
- 5 years cash flow statement

Expected economic and financial metrics of our company in the next five years

Financial Planning

- Capital needs as from projected cash flows
- Foreseen financial rounds
- Use of funds

What is the financial need of our plan and how money will be used

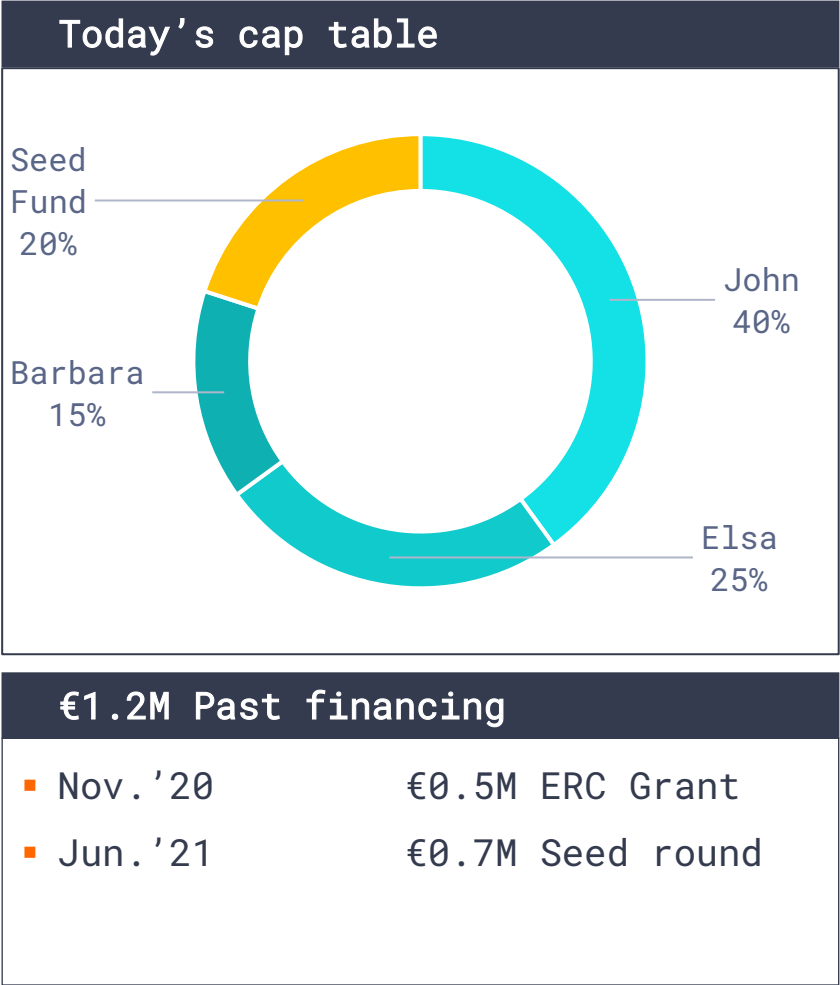
Offer to Investors

Investment Opportunity

- Current shareholders structure
- Funding history
- Planned financial rounds and investors shares
- Expected IRR for investors
- Exit strategy

Why an investment in our company represents a financial opportunity

Offer to investors has to be a concise, well detailed description enabling a clear understanding of the opportunity



| €5M Series A Round | |
|--------------------|-----------------|
| PRE-MONEY | €11.0M |
| Good Fund | €0.7M |
| Dummy Ventures | €1.3M (lead) |
| B ROUND, | €15M, 18 months |

| EXIT STORIES |
|-----------------------------------|
| Feb'22 \$500M Jack&Co by BigCo |
| Jun'23 €320M Pluto srl by SuperCo |
| Sep'23 €1.3B Pippo – IPO London |

| EXIT OPPORTUNITIES | | | |
|--------------------|---|--|---|
| | Describe here why they should be acquiring your company | | Describe here why they should be acquiring your company |
| | Describe here why they should be acquiring your company | | Describe here why they should be acquiring your company |
| | Describe here why they should be acquiring your company | | IPO is an option because... |



Provide the appropriate level of information at the appropriate timing

Executive summary

- 1, max 2 pages
- Market description, potential and growth
- Unmet market needs
- USP: unique selling proposition
- Presence of IP
- Competitors
- Team
- Project milestones
- Funds needs and use
- Cash forecasts

Send via mail (no spam, focused mailing)

Pitch

- 10/15 slides max
- Market description, potential and growth
- Unmet market needs
- USP: unique selling proposition
- IP and technology brief description
- Competitors
- Team
- Project milestones
- Expected market share and price positioning
- Funds needs and use
- Cash forecasts
- SWOT

Upon first meeting or request for further information

Full business plan


- 30/60 pages
- Executive summary
- Team – full cvs
- Full market description
- Unmet needs in details
- USP: unique selling proposition and stakeholders advantages
- Detailed technological description and IP
- Competitors and possible reactions
- Detailed development plan
- Marketing plan
- Resource needs
- Cash needs and detailed use
- Provisional P&L, BS and CF

After further interest is shown and NDA is signed

The structure of a good short presentation

- Slide 0: Event, logo, date, speaker, contact Info
- **Slide 1: The Problem**
- **Slide 2: Our Solution**
- Slide 3: The market (size, potential, segments)
- Slide 4: Revenue Model – sales process
- Slide 5: Value chain: what is kept internal and how you protect it
- Slide 6: Competitors and competitive Technologies
- Slide 7: Achievements and next steps
- Slide 8: Management team (key figures + photos)
- Slide 9: Financials (sales, net profit, cash flow, # employees)
- **Slide 10: Offer to investors**
- Q&A: Links to additional slides

Who will I meet?



Steve Jurvetson

Partner















[Twitter](#) [Facebook](#) [LinkedIn](#) [Email](#)

Steve Jurvetson is a partner at DFJ. His current board responsibilities include [SpaceX](#), [Synthetic Genomics](#), and [Tesla Motors](#) (TSLA). He was the founding VC investor in [Hotmail](#), [Interwoven](#) (IWOV), [Kana](#) (KANA), and [NeoPhotonics](#) (NPTN). He also led DFJ's investments in other companies that were acquired for \$12 billion in aggregate. Previously, Steve was an R&D Engineer at [Hewlett-Packard](#), where seven of his communications chip designs were fabricated. His prior technical experience also includes programming, materials science research, and computer design at HP's PC Division, the Center for Materials Research, and Mostek. He has also worked in product marketing at [Apple](#) and [NeXT Software](#). As a consultant with [Bain & Company](#), Steve developed executive marketing, sales, engineering and business strategies for a wide range of companies in the software, networking, and semiconductor industries.

At [Stanford University](#), he finished his BSEE in 2.5 years and graduated #1 in his class, as the Henry Ford Scholar. Steve also holds an MS in electrical engineering from Stanford. He received his MBA from the Stanford Business School, where he was an Arjay Miller Scholar. He also serves on the advisory boards of [SRI International](#), [WAVC](#), [STVP](#), and [SEVF](#).

He was honored as "The Valley's Sharpest VC" on the cover of Business 2.0 and chosen by the SF Chronicle and SF Examiner as one of "the ten people expected to have the greatest impact on the Bay Area in the early part of the 21st Century." Steve was chosen by *Forbes* as one of "Tech's Best Venture Investors", by the *VC Journal* as one of the "Ten Most Influential VCs", and by *Fortune* as part of their "Brain Trust of Top Ten Minds." Steve was honored as a Young Global Leader by the World Economic Forum, as a [Distinguished Alumnus](#) by St. Mark's (where he was [Commencement Speaker](#)), and as Deloitte's "Venture Capitalist of the Year" for 2012.

ACTIVE COMPANIES:

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Who will I meet?

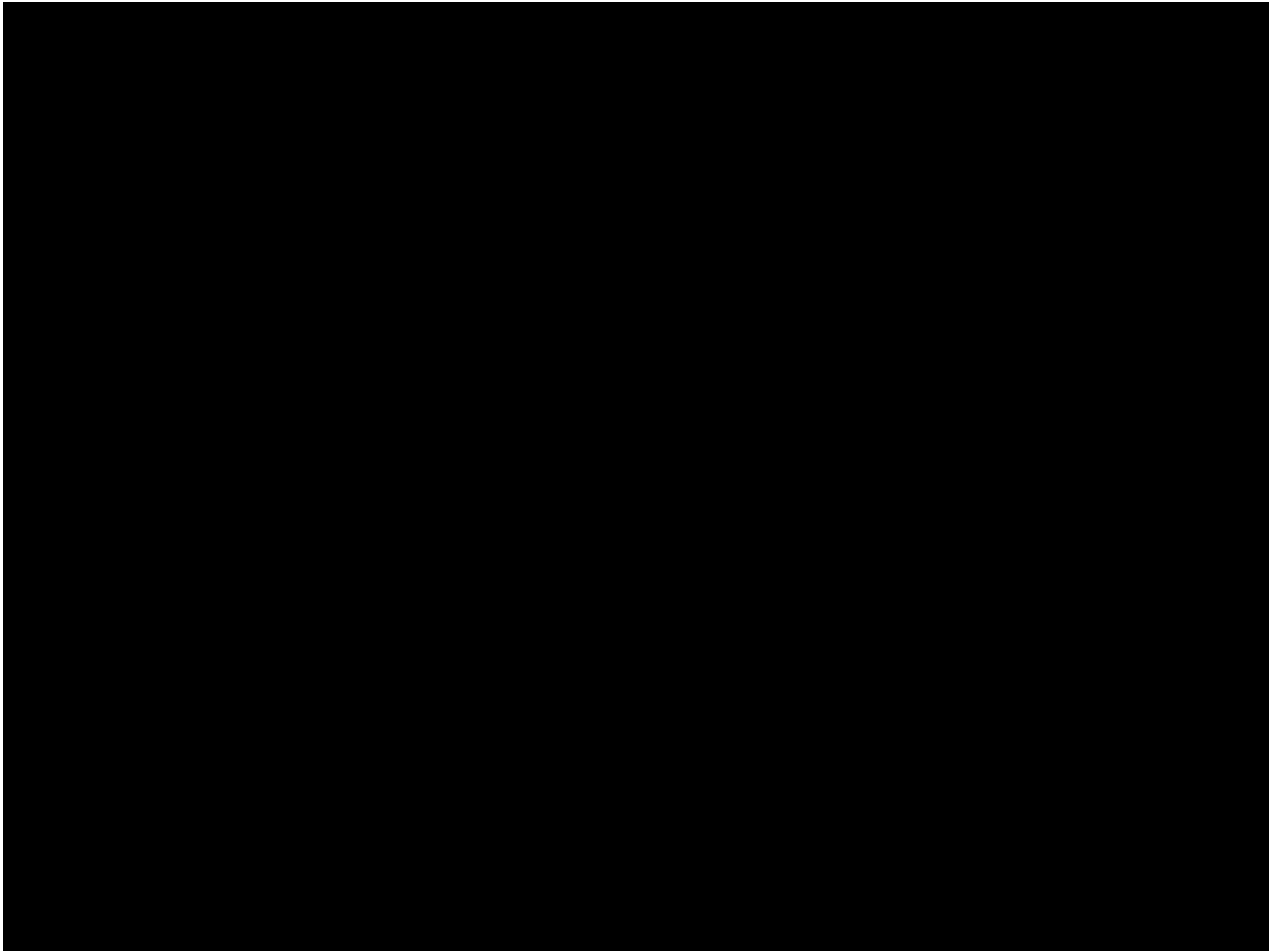


KAZUMI SHIOSAKI, PH.D.
MANAGING DIRECTOR

Cambridge Office

Kazumi Shiosaki, Ph.D., joined MPM in 2003. Her interests and expertise include identifying companies and technologies in novel drug discovery areas. Kazumi has helped to found and served as the start-up CEO of several MPM companies including Primera Diagnostics, Epizyme (EPZM), and most recently Mitobridge. She serves on the boards, as well as scientific advisory boards, of several MPM portfolio companies.

Kazumi brings extensive strategic and operational experience in the pharmaceutical-biotechnology industry with a career that began at Abbott Laboratories (now AbbVie: ABBV) where she managed a number of programs in various therapeutic areas. As SVP of Drug Discovery at Millennium Pharmaceuticals (acquired by Takeda:TSE 1st 6488.0), she helped lead the efforts to transition Millennium from a genomics into a drug discovery organization and was part of the team that secured as well as implemented large, precedent-setting pharma partnerships. Kazumi received her Ph.D. in Synthetic Chemistry from the University of California, Berkeley, and a B.S. in Chemistry from Whitman College.





Introduction to Venture Capital

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