



JOURNÉE DE SENSIBILISATION À LA
VALORISATION – DIM SIRTEQ

“Can we / should we transform researchers into entrepreneurs?”

Entrepreneurial Mindset & Finance

Dr. Etienne Krieger, HEC Paris

EtienneKrieger@gmail.com

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Learn, do, teach...





QUIZ...

Please name an iconic Entrepreneur...



Elon Musk
Richard Branson
Steve Jobs



QUIZ...

Please name an iconic startup...

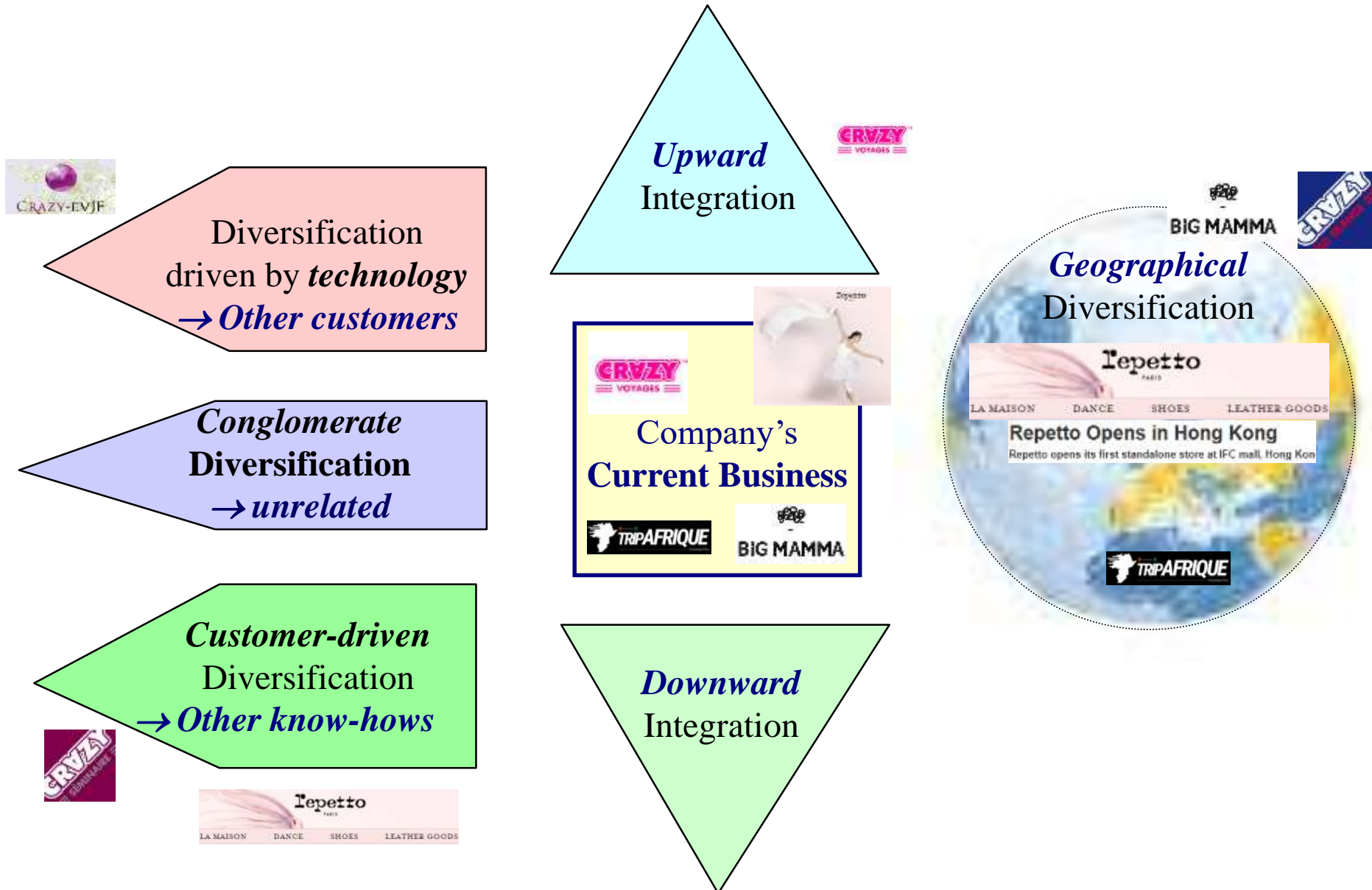


Apple
Facebook
Uber
Airbnb
Amazon



Strategic growth options

New offers, new territories and/or new segments?



Risk & return: back to basics...



Enterprise Value = PV = $\sum F_i / [1+t]^i$ => discounted cash flows
Net Present Value = NPV = PV - V₀ => discounted cash flows - present value

Expected return = Expected Value of return rate : **R = E(r) = $\sum r_i p_i$**

Risk = volatility of enterprise value
Risk = $\sigma(r)$ = $V(r)^{1/2}$: standard deviation of return rates
 $V(r) = \sigma^2(r) = \sum p_i [r_i - E(r)]^2$

Capital Asset Pricing Model (CAPM):
Rate of return required by investors: **k = $r_f + \beta(k_m - r_f)$**

r_f : risk-free rate k_m : expected return of market portfolio
 β : coefficient of sensitivity (volatility) $\beta(k_m - r_f)$: **equity risk premium**

Extended model : k = $r_f + \beta(k_m - r_f) + (\lambda \times \text{liquidity premium})$

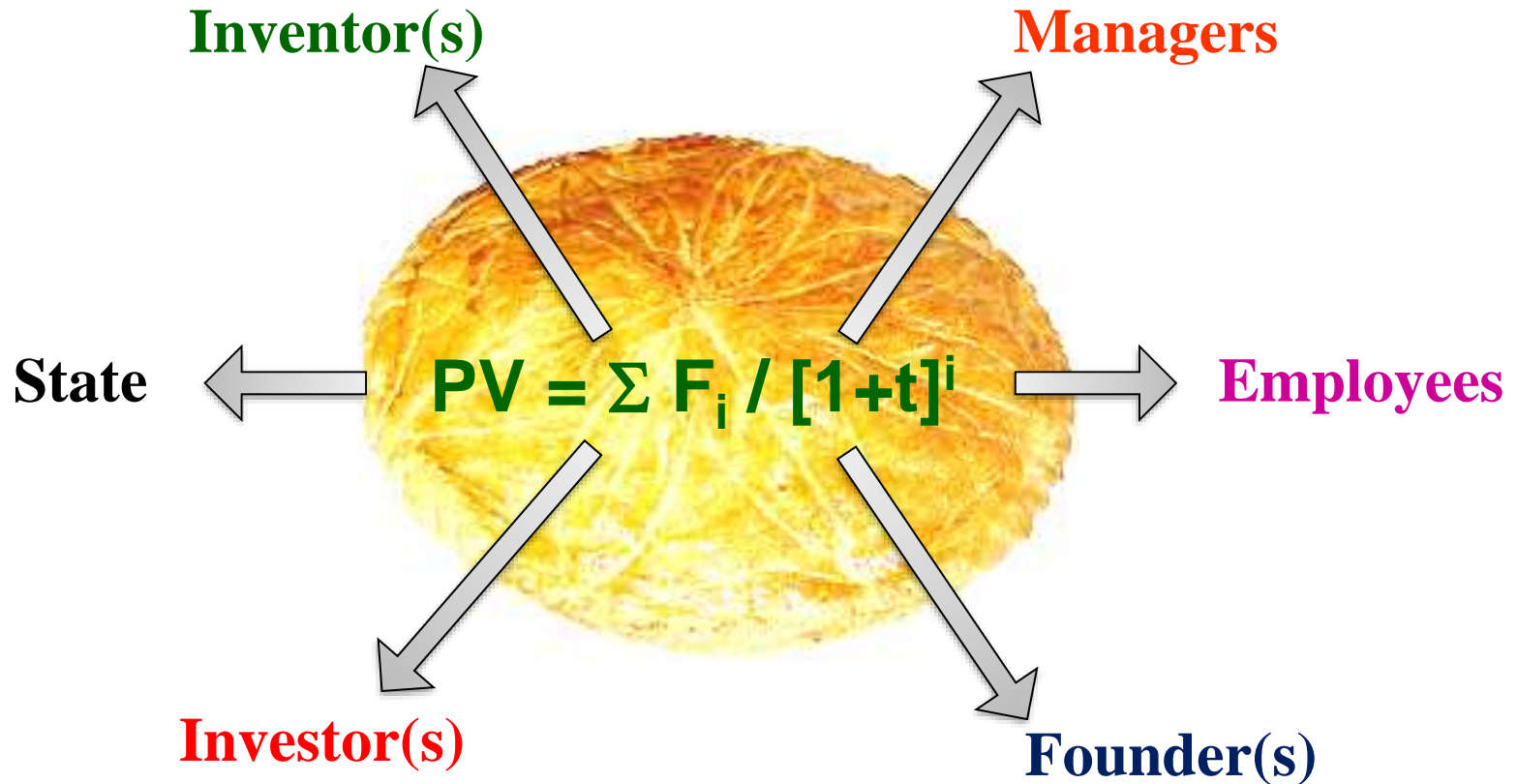
Example: **k = 3,1% + $\beta \times 6,4\%$ + $\lambda \times 2,3\%$** (Hamon & Jacquillat)
k = 11,8% if $\beta = \lambda = 1$ => Risk premium = **+8,7 %** (Source: Associés en Finance, 2009)

Sharpe ratio: S = $(R - r_f) / \sigma$ [Reward-to-variability ratio = marginal return per unit of risk]



Risk & return: back to basics...

The ballroom of talent and greed



How to share the cash flows and the future capital gains?

+ other issues of sustainability, value creation & sharing



Various funding sources... in theory!

From personal savings to IPO...



Personal savings	Self-financing	Refundable advances	Bank Loans
Region/State Subsidies	Friends & Family	Customer Prepayments	European Subsidies
Innovation Contests	Extra Activities	Venture Capital	Equity Loans
Loan of Honor	Privileged status (JEI)	Call for Proposals	Development Capital
Crowdfunding	Seed financing	Assets sales	Convertibles Bonds
Business angels	Tax credits (CIR/CII)	Supplier Credit	Initial Public Offering (IPO)



The reality of Startups & SMEs...

(Sources: AFIC & EVCA)



Risk and Reward Profile						
Lower risk			Higher risk			
Typically lower rewards			Typically higher rewards			
1	2	3	4	5	6	7

R ≈ 1,5% to 2,4%

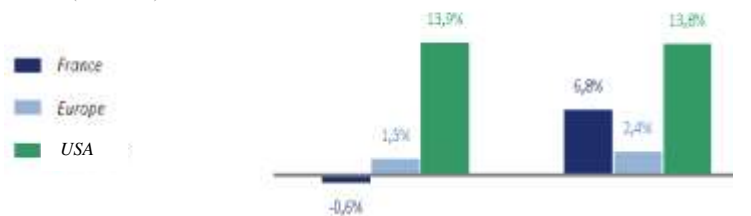
Venture capital

Development Capital

$\sigma(r) \approx 10\%$

1st quartile : +11,8%. Last quartile : -10,6% [VC FR]

IRR since the beginning
(until 2014)

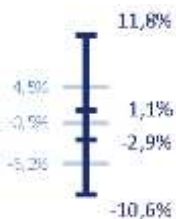


S < 1

Venture capital v. Development Capital

Liquidity ≈ 7 years



Average holding period



Fr. 2005-2014

Beyond risk management & financial modeling...



?  [02] Why did you decide to “make the jump” to create a new business? 

(Source: HEC)



Ning Li



Adèle Bounine



Nathalie Fargeon



André Choulika



David Sourdivé



Tatiana Jama & Lara Rouyres



Christian Kamayou



Boris Saragaglia



Simone Hammer



Adama Touré



Anaïs Barut



Pierre Kosciusko-Morizet



Nathalie Gaveau



Bertrand Jelensperger



Mailys Cantzler



Georges Liberman



Mehdi Cornilliet



Céline Lazorthes



Julien Coulon

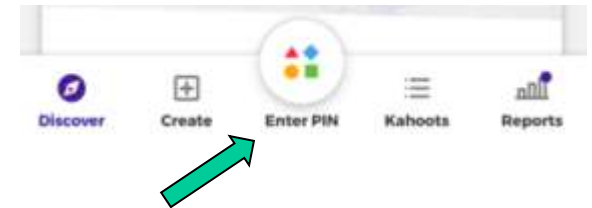
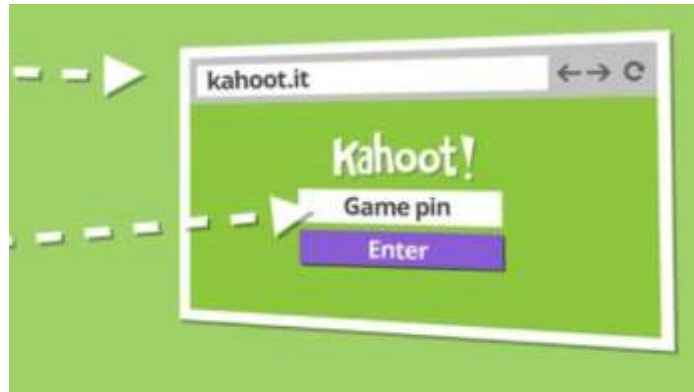


Valentin de Ruffray

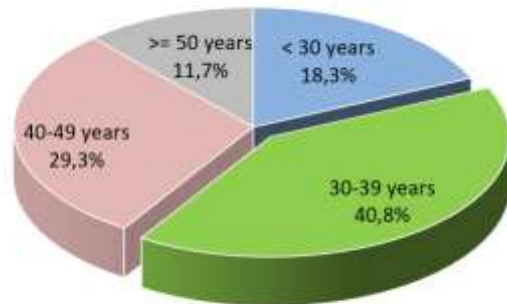


What are the entrepreneurs' main motivations?

Interactive Kahoot! Session



Age of Startups Founders



Average Age: 38 years

Over 35 years: 58,3%

[Sample of 515 startup founders]



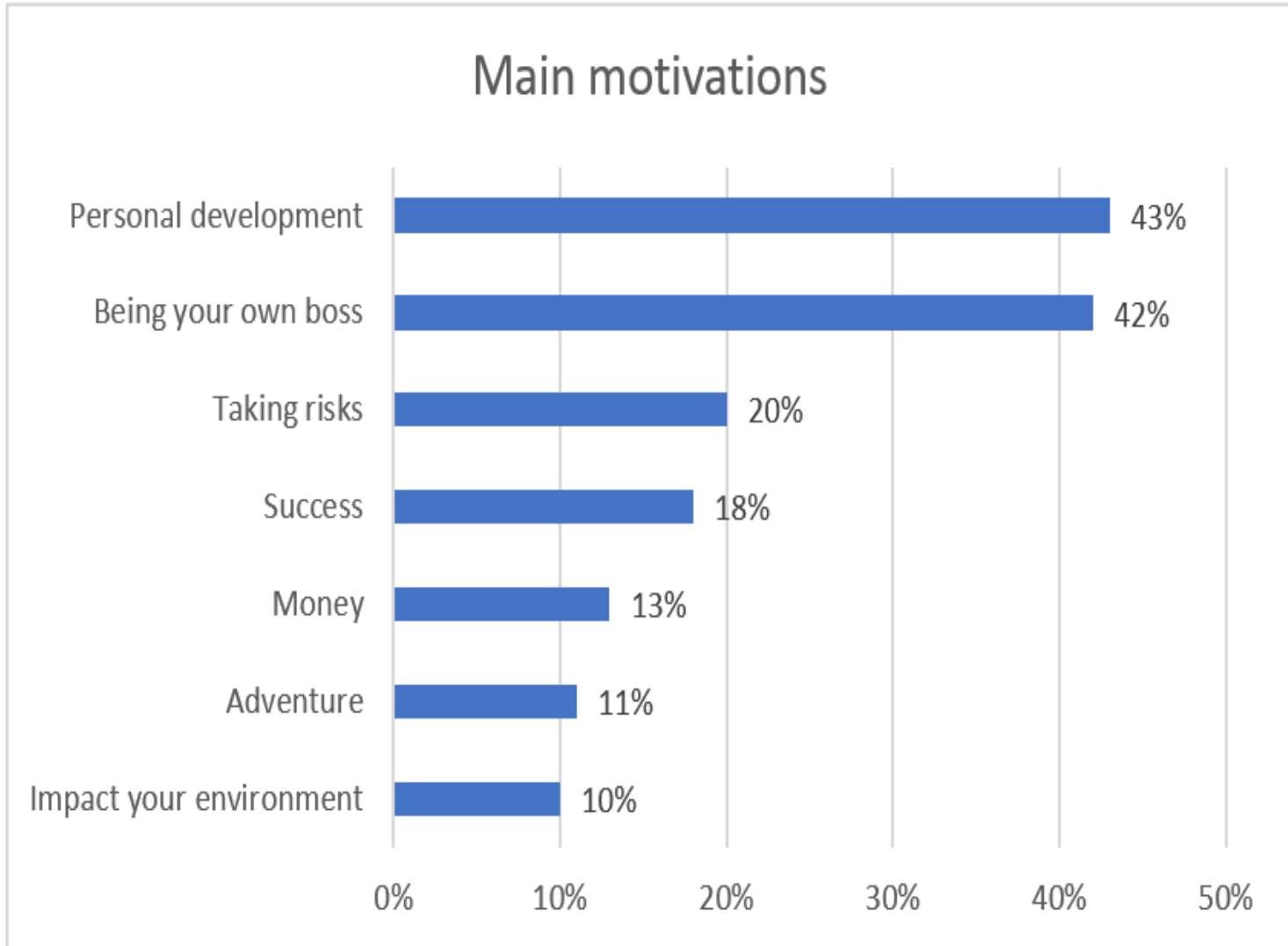
Ikigai (生き甲斐)
Purpose / Joy of Life



Main motivations

Items associated with creating or taking over a business

(Source: A. Letowski)



+ [01] Can you summarize your business in a few words?



Innovation without borders



"Innovation is cheaper than (direct) competition"





« Open innovation »

Some sources of innovation

“Every problem is a big opportunity” (Sheikha Athba Al Thani)



06] How did you select your target markets?

	Strategic Efforts	Essential Activities	Enabling Technologies
MARKETING	Market Segmentation	Market Entry Strategy	Market Development Strategy
TECHNIQUE	Product Development	Process Development	Technology Development



Bypassing Patents



External Labs



Internal R&D



Value Analysis



Design Thinking





360° innovation...

How to address unmet needs?



More reliable
Honda Accord



Custom-designed
Lamborghini Aventador Roadster



Smaller / More compact
Renault Twizy



More comfortable
Tesla Model S



Stronger
Knight XV, Conquest Vehicles



Faster
Venom GT, 435 km/h



More visible
Cadillac, 30 meters, 24 wheels...



More silent
BMW 730d



Cheaper
Tata Nano, 1600€

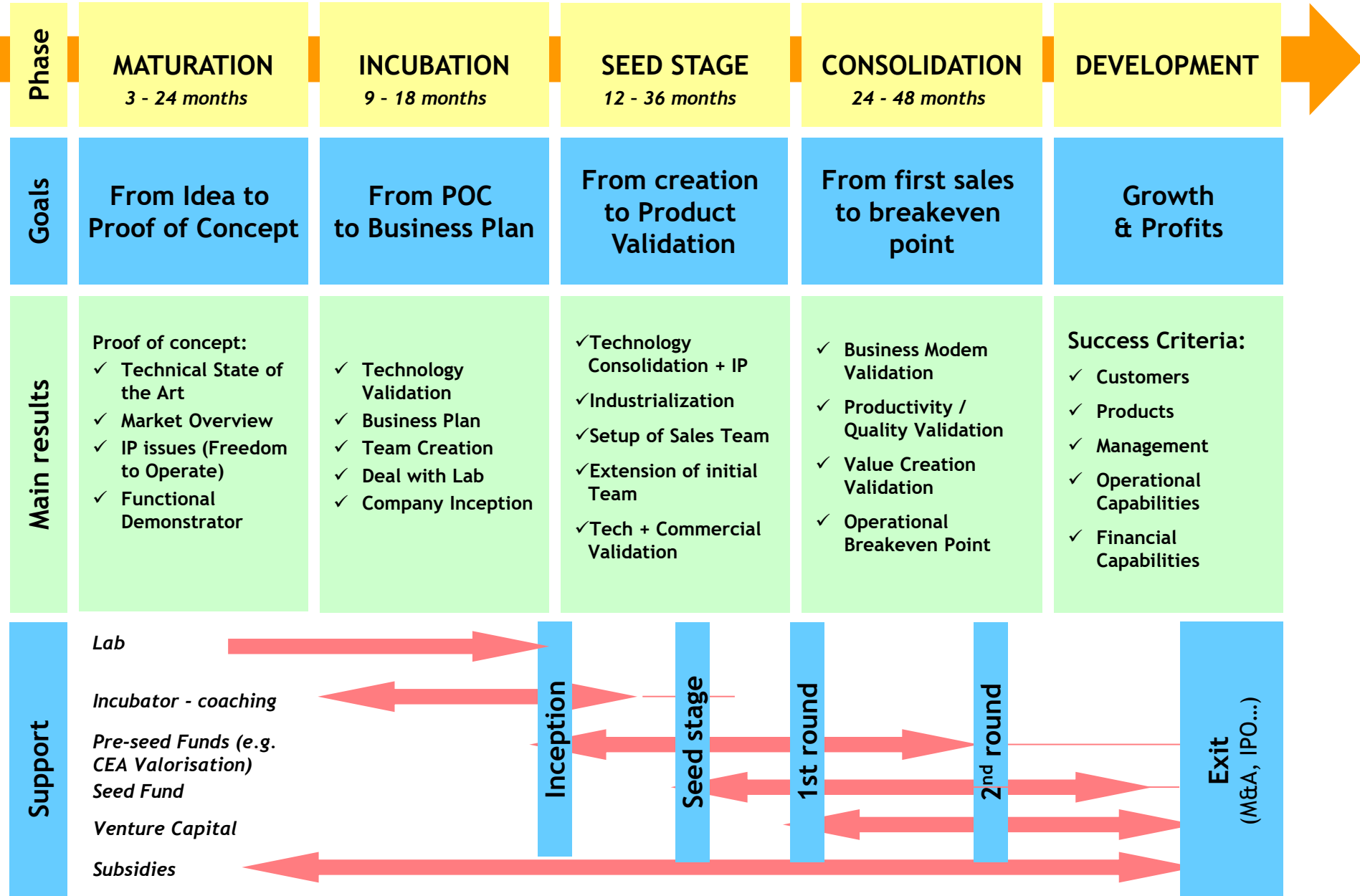
Security / Pride / Novelty /
Comfort / Money / Sympathy

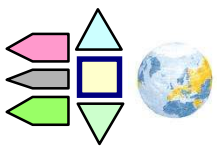


More ecological
Lexus CT 200h

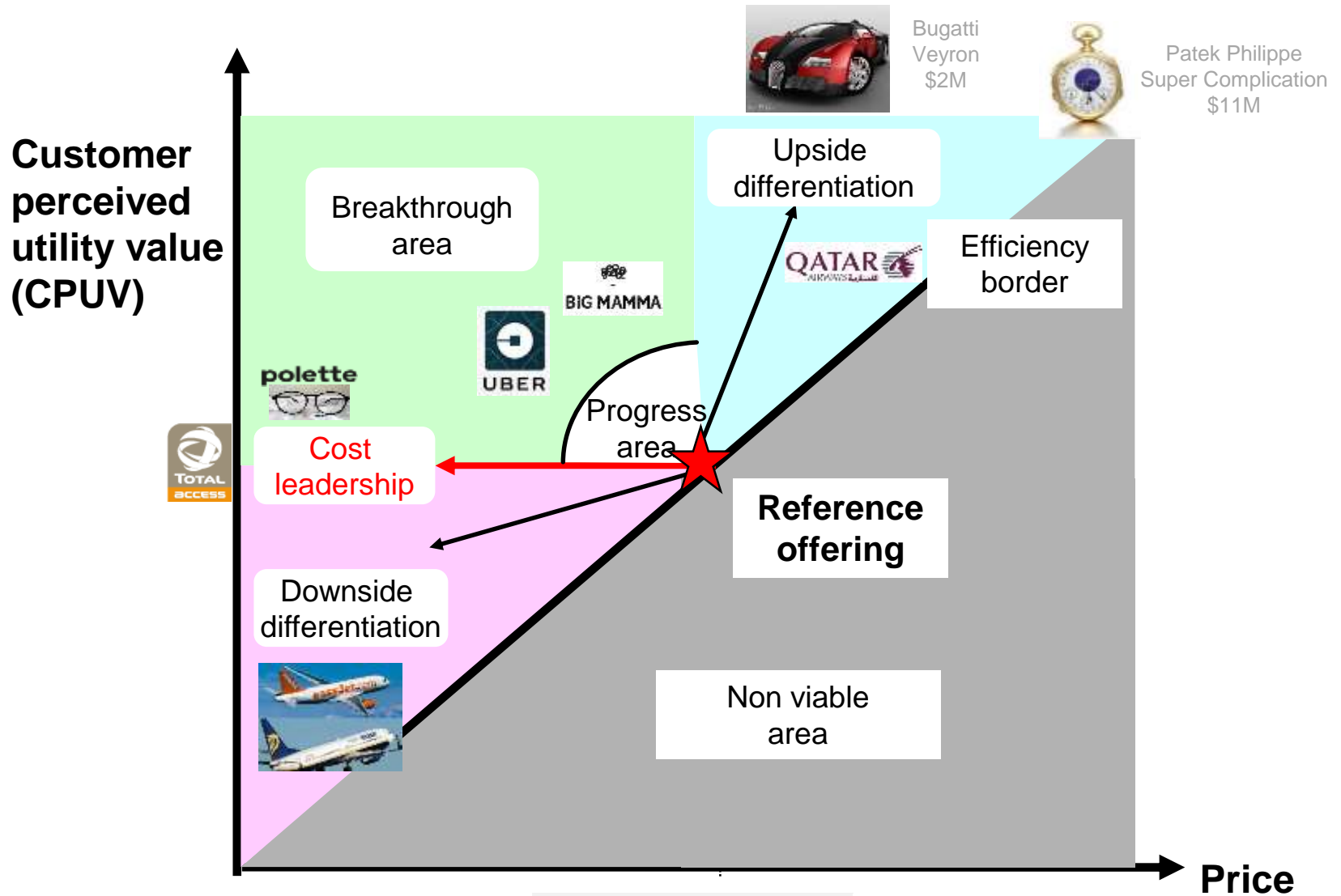
The Innovation Process (1/2)

© CEA





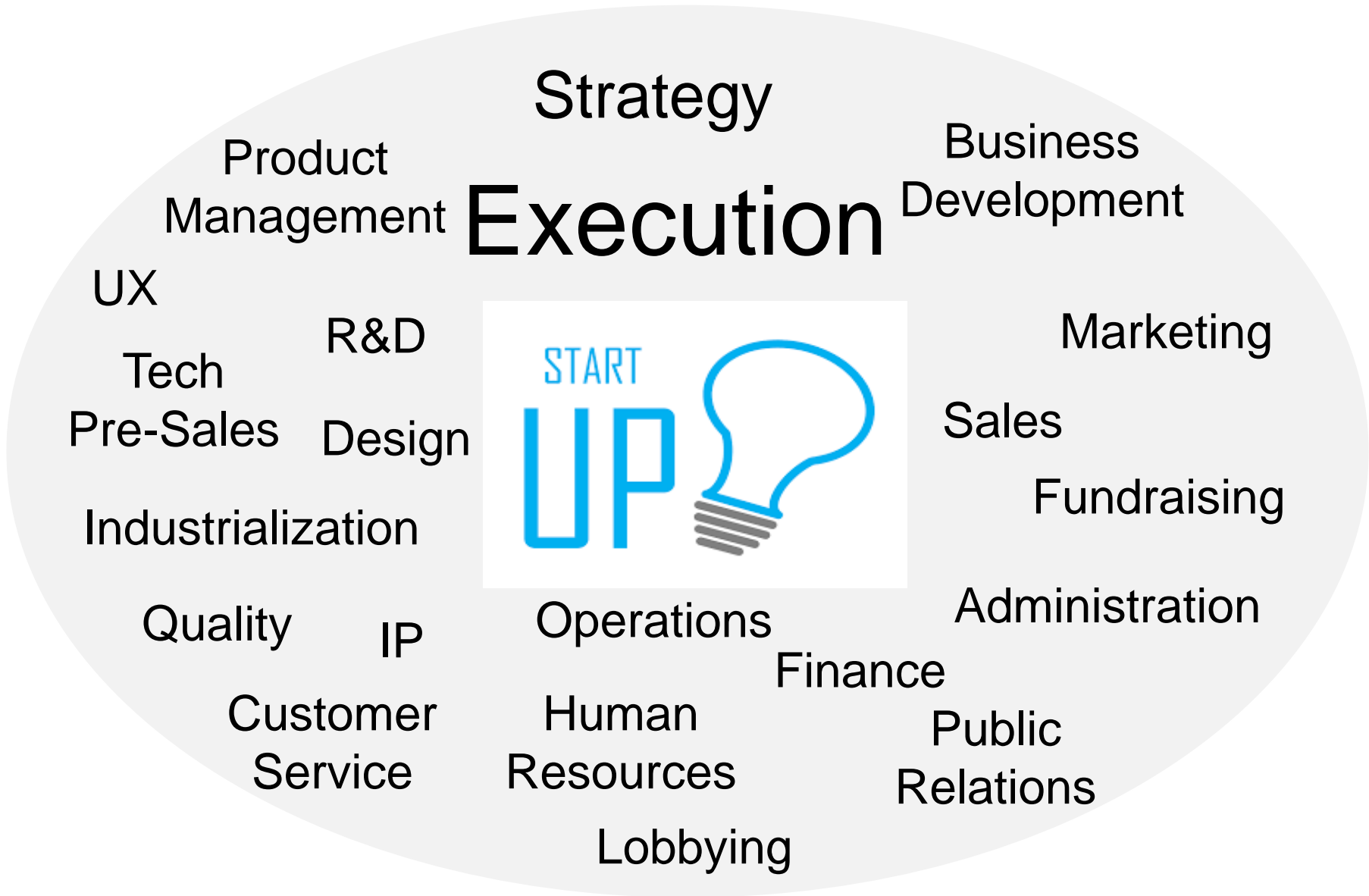
Innovation & competitive strategies



[16] How do you differentiate from your competitors?



The Everlasting Challenge



The Everlasting Challenge

Virtues and Limits of the Set Theory



« A »
Tech or Biz



« I »
Business idea



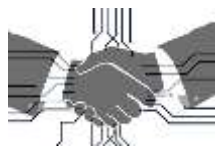
« A^C »
Biz or Tech
Complement of A in I

Key Skills

Visionary



Deal Maker
Marketing & Sales



Engineer
R&D + Manufacturing



Back Office “Shiva”
Administration, Finance, Logistics & Support

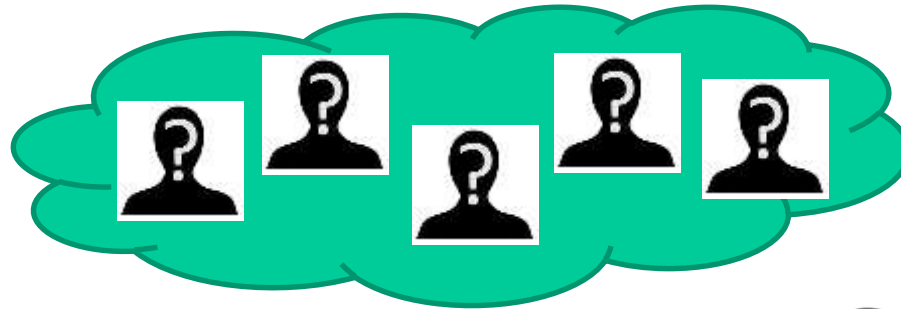


The Everlasting Challenge

Founders, Contributors and First Employees
How to create the best team with limited initial resources?



Advisors & Contributors



Founders

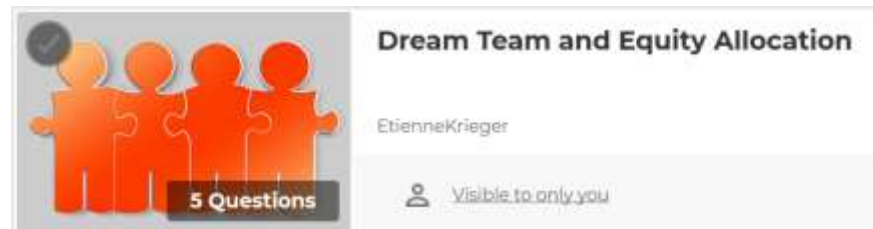
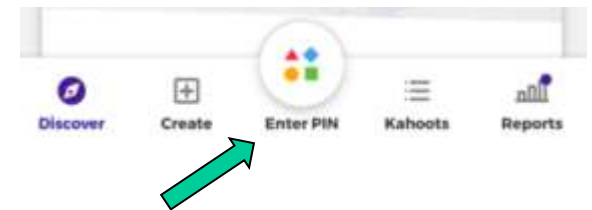
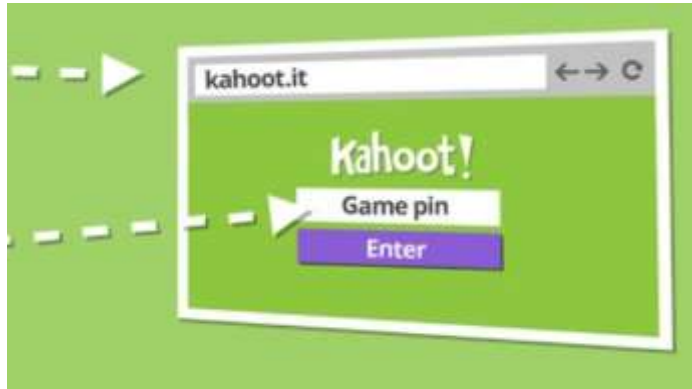


First Employees



Dream Team and Equity Allocation

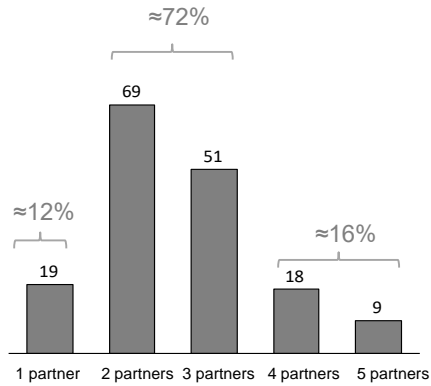
Interactive Kahoot! Session



Operational roles and capital allocation among founders in startups

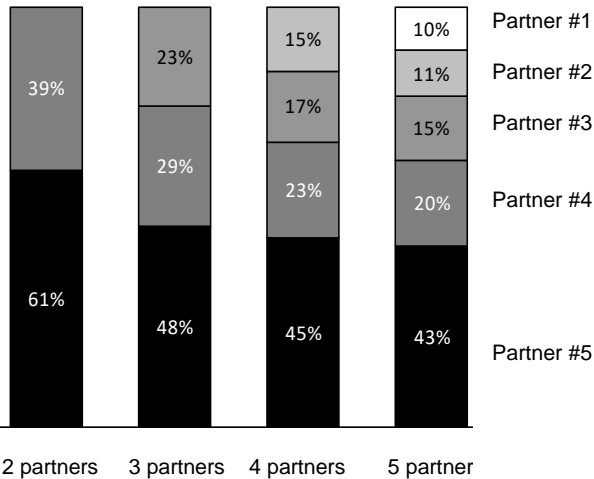


Source: T. Littée & E. Krieger, 2013

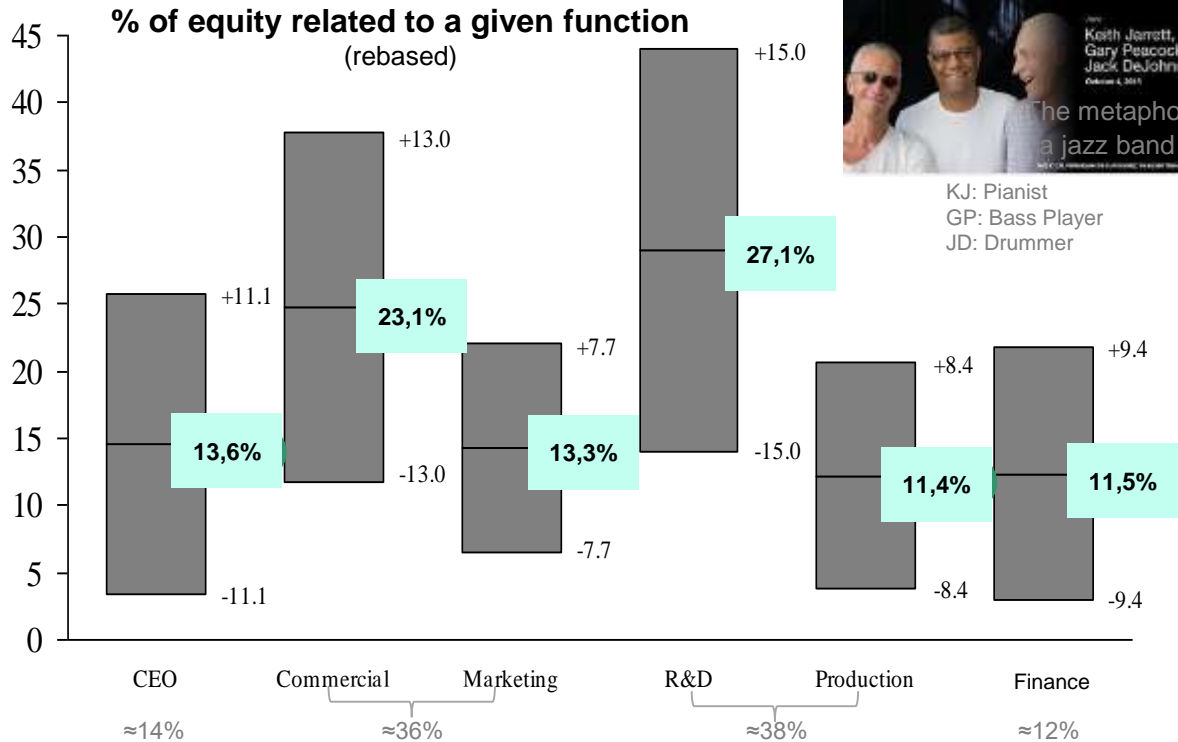


Number of associates

166 respondents



% of equity according to the number of associates



[10] Main skills of a CEO founding his/her startup

[11] How did you find and choose your cofounder?

[12] Main characteristics of a good partner

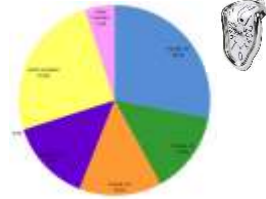
[13] How do you manage conflicts within the founding team?



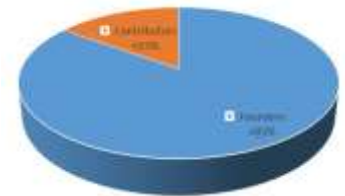


Equity allocation in startups

Source: "JB". Rudelle (Galion Project survey on 70 entrepreneurs)



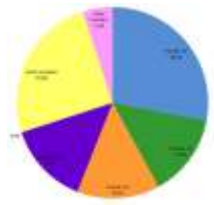
- >50% of the founders choose an unequal allocation.
- Such an allocation has a higher chance of success.
(in terms of valuation and/or exit values)
- Half of the “egalitarians” regret their choice afterwards.
- A majority of VCs (85%) prefer an unequal allocation.
- Full-time founders should get a huge majority, i.e. **>85%**.
(and no compensation before the first fundraising)
- All other contributors should get less than **15%**.
(experts with other jobs + first paid employees). **<5%** for a contributor.
- Allocation among founders: discussion + template.



Type of contributor	Number of contributors		Percentage of total contributors	Percentage of total equity allocated		
	Men	Women		Full-time founders	Part-time founders	Other contributors
CEO/COO	4	10	24%			
Validation & strategy	0	12	12%			
Market Techniques	7	13	20%			
Initial Tech. development	10	11	17%			
Product & UX	10	10	17%			
Engineering (hardware)	0	10	10%			
Marketing & sales	0	10	10%			
Total contributors	17	66	83%			
Other contributors						

Source: The Galion Project

Other conceptions



Victor LUGGER
Cofounder of BIG Mamma Group

« Do not create a startup on your own: it's too hard and it's not fun enough »
« Look for an associate first and then look for the idea »



Tigrane SEYDOUX
Cofounder of BIG Mamma Group



« A CEO may receive up to 20% of the founders' shares but he/she must first prove him/herself. I therefore grant stock options progressively »



Jacques LEWINER
Researcher and serial Entrepreneur



Julien COHEN
Serial Entrepreneur

« In some cases, you don't need an associate: you can run many businesses with good lieutenants! »





How can I find the ideal Partner(s) and create the best Team?



↪ Personal, Professional & Academic Network



PARIS-SACLAY

Berkeley UNIVERSITY OF CALIFORNIA



↪ Social Networks and Networking Events



ADOPT A CTO

Afteeniteam

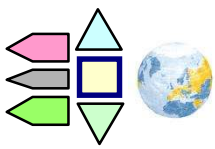


↪ Incubators, VCs and Innovation Clusters



[11] How did you find and choose your cofounder?

A crucial issue... with suboptimal solutions
e.g. the "Startup In Vitro" initiative



Variants of financial strategies



BIG MAMMA

Creation

Free cash flows

Dividends

collectis
BIG MAMMA
InfoVista

collectis
InfoVista

IPO*

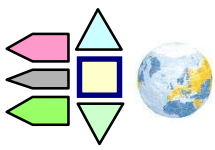
M&A*

F
R
E
E

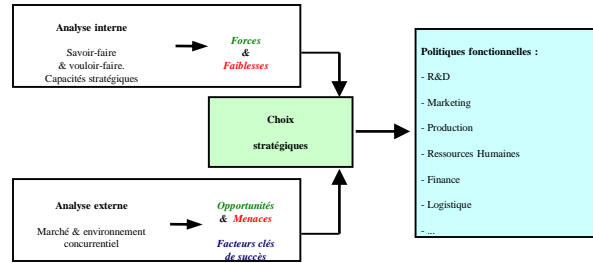
C
A
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* IPO : Initial Public Offering
* M&A : Merger & Acquisition



You've got a SWOT: so what?!



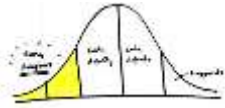
- ↪ What are your priorities and your contingency plans?
- ↪ Are your goals clear and shared (by management & shareholders)?
- ↪ Do you have the resources required by your ambition?
- ↪ Are you ready to pay the price of such resources?

Blending business opportunities with life choices...

How to cut the Gordian knot? Target segment, product positioning and value-based pricing



Source: F. Iselin (2009)



*CPUV = Perceived Utility Value



1. OPPORTUNITIES (industries)
Match with strengths

“Which customers will buy my offer very expensive and very fast?”



2. CUSTOMER'S SEGMENTATION TOWARDS EARLY ADOPTERS
Market study, based on usage's value

3. RO's IDENTIFICATION
Market study, based on usage's value

4. EVALUATION OF RO's CPUV
Focus groups, based on value attributes

5. DIFFERENTIATION
Eliminate-Reduce-Create-Raise

6. CHECK ON NO's CPUV
Focus groups & quantitative study

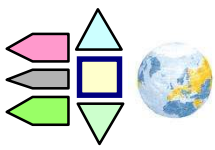
7. COSTS' OPTIMIZATION
Check consequences of differentiation

8. PRICE POSITIONING
Based on CPUV's gap and costs

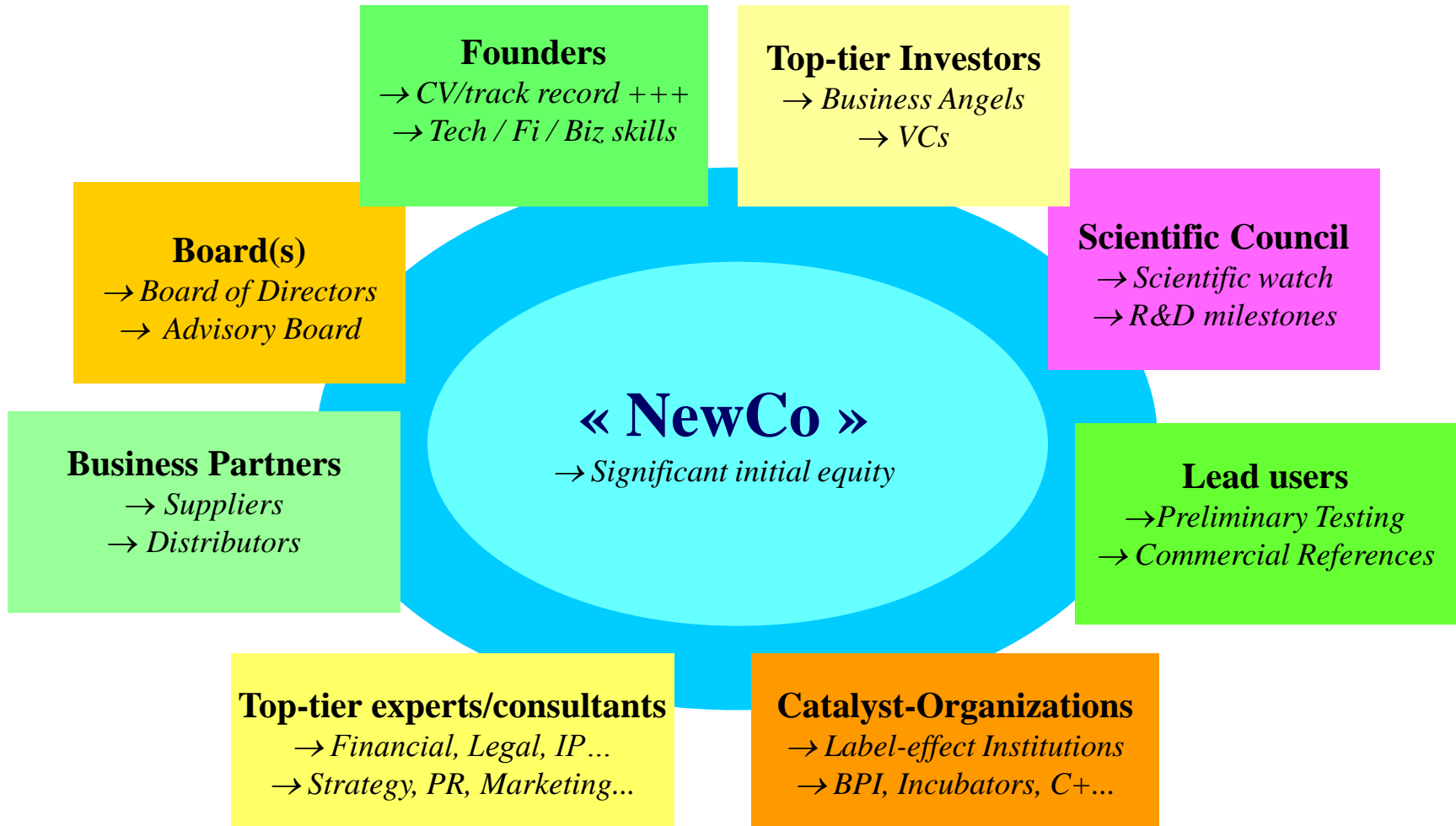
9. GROWTH → PRAGMATISTS
Crossing the chasm

[07] Do you use a specific method to develop your new products and/or services?





Best Practices at Startup Stage



Self-screening guide:

Seven key points before the great jump!

- ◆ Existence of a sufficient, accessible and solvent potential demand.
- ◆ Coherence between prior professional experience and KFS of the intended business.
- ◆ Existence of a complementary team and/or a network of associates and advisors.
- ◆ Capacity of work, endurance and ability to cope with stress.
- ◆ Spouse's/husband's support and financial ability to survive the start-up phase.
- ◆ Leadership and negotiation skills.
- ◆ Basic knowledge in management.

"If you think education is expensive, try ignorance"

Abraham Lincoln / Derek Bok (Harvard)

>>This also applies to innovation!



Launching a New Business...

- ✓ Motivation / Need to do « something different »
- ✓ Vision / Business Opportunities
- ✓ Resources / Competences & specific Assets
- ✓ Network / Associates, References & Partners.

- ✓ Theoretical Perspective
- ✓ Tools & Methods

- ✓ Testimonials
- ✓ In Vivo Diagnosis

Draft Project

Screening Tools

Personal Goals

CPUV

Risk / Return

SWOT

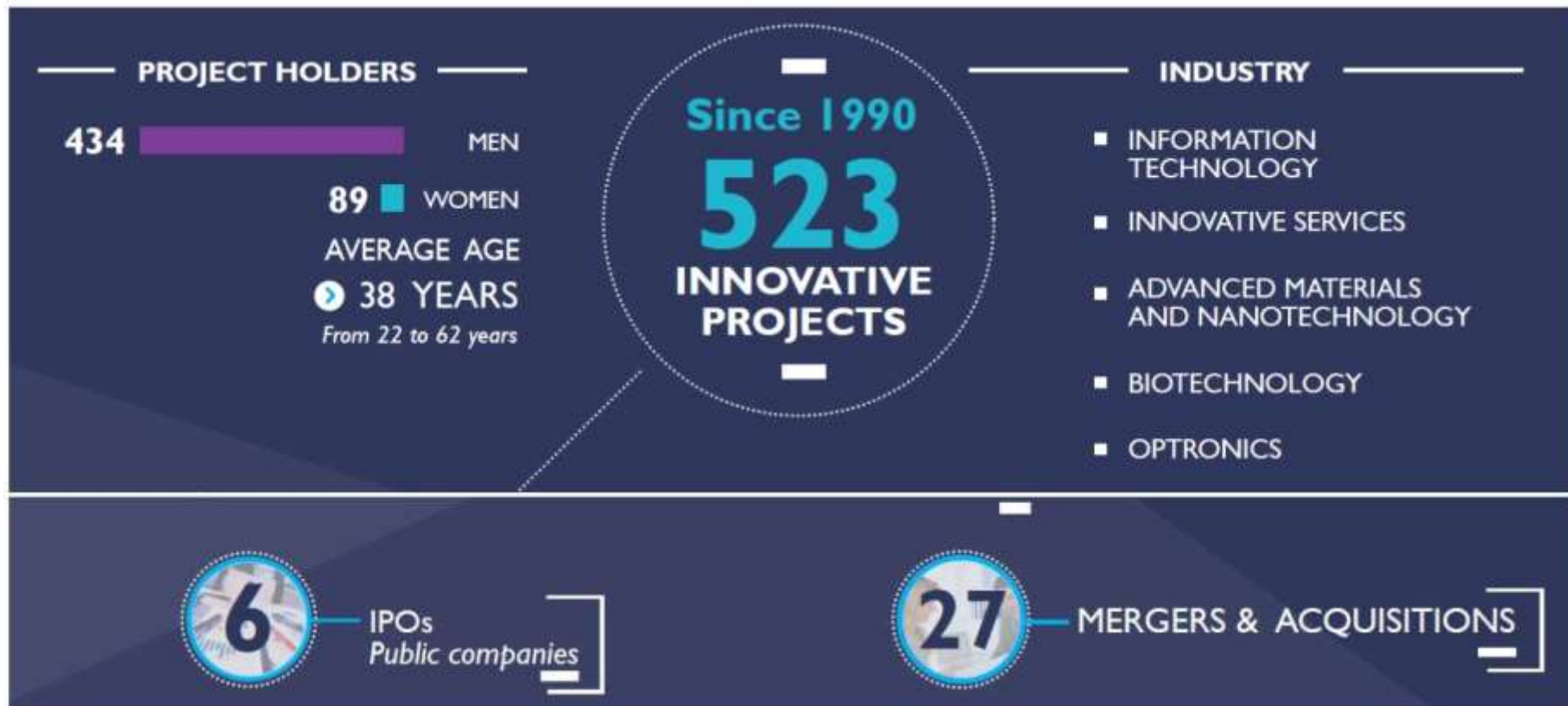
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Business Plan



Back to the “HEC Challenge +” Sample...

25 years of innovation



- ✓ Some huge successes for entrepreneurs and investors.
- ✓ Incubation significantly enhances the survival rate (76% rather than 50%)
- ✓ Most companies remain small (cf. median headcount [6] & turnover [≈€250k])

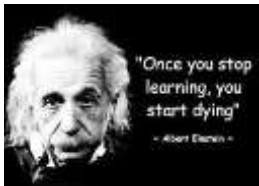
Concluding Comments



Your Margins of Manoeuvre...



Ikigai (生き甲斐)
Purpose / Joy of Life



"A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty" (W. Churchill, 1874-1965)



The soft Side of the SWOT Analysis...

Footnotes or main Issues?

cf. Challenge + application form



➤ How do you see your company in 10 years?

.....

.....

➤ How do you see yourself in 10 years?

.....

.....

➤ What is a successful entrepreneur, according to you?

.....

.....

▶ How to match business opportunities with personal dreams (or goals)?

« *If you make meaning, you'll probably make money* »
 (Guy Kawasaki, The Art of Start)



[19] How do you see your company in 10 years from now?

The “HEC Challenge +” Survey [1]



What they remembered once they forgot everything else...



[21] In 3 words, what would you recommend to future entrepreneurs?



[22] In 2 words, what didn't you learn "at school" and you believe you should have learned?

- *« Segment your market!*
- *Cash is more important than your mother!!!*
- *What is your CPUV?*
- *Sky is the limit*
- *One is only rich of his/her scars*
- *What are your assets?*
- *Cash is King!*
- *Focus, focus, focus!*
- *You'll have the shareholders you deserve...*
- *Everything always takes more time than expected... »*



The “HEC Challenge +” Survey

[2]



Advice to Entrepreneurs

- *Prepare well before. Once launched, do not let go!*
 - *Have a vision ... and confront it quickly to customers.*
 - *Do not be afraid of the great: they were like us!*
 - *Surround yourself, surround yourself, surround yourself...*
 - *Customer money is better than money from financiers.*
 - *Always, always question yourself.*
 - *Persist and do something that fascinates you!*
 - *Always be vigilant about cash.*
 - *Spend time with your family...*
- (...)

What is your Takeoff Strategy?

Airbus A380 v. ultralight Aircraft...



Empty weight: 270 t
 $V_{mu} = 250$ km/h
Standard Capacity: 525 seats
Takeoff distance: 2750 m
 $V_s \approx 150$ km/h
 $E_{c_1} = 651\,052$ kJ (takeoff)

V_{mu} = Minimum Unstick Speed
 V_s = Stall Speed (stall speed without tilt)



Empty weight: 0,25 t (2 seats)
 $V_{mu} = 50$ km/h
Capacity: 2 places
Takeoff distance: 30 m
 $V_s < 65$ km/h
 $E_{c_2} = 24$ kJ (take-off)

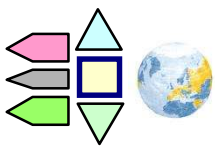
E_c = kinetic energy
 $E_{c_1} / E_{c_2} = 27000$



Conclusion (2/3)



- The flipside of risk: welcome to a world of opportunities!
- Define your personal & corporate goals
- Go on the field... and take some distance
- Some frameworks and tools may be useful:
 - Business and value chain, Porter analysis
 - Competitive landscape, reference offering & KFS...
- Carefully select your partners and employees
- Keep it simple: light agreements instead of diaries
- Sell... and look at your cash every day!
- Arbitrate between independence and hyper-growth
- Have fun: a new venture is not only risky, it's *also* a venture!

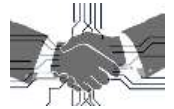


Conclusion / Recommendations

(3/3)



- Money and ideas: a shaky balance...
- Beyond strategic plans, a human adventure
- Hold various executive positions
- Develop your network
- Define your personal / professional risk threshold
- Be realistic... and pursue your utopias!



关系
guānxi

