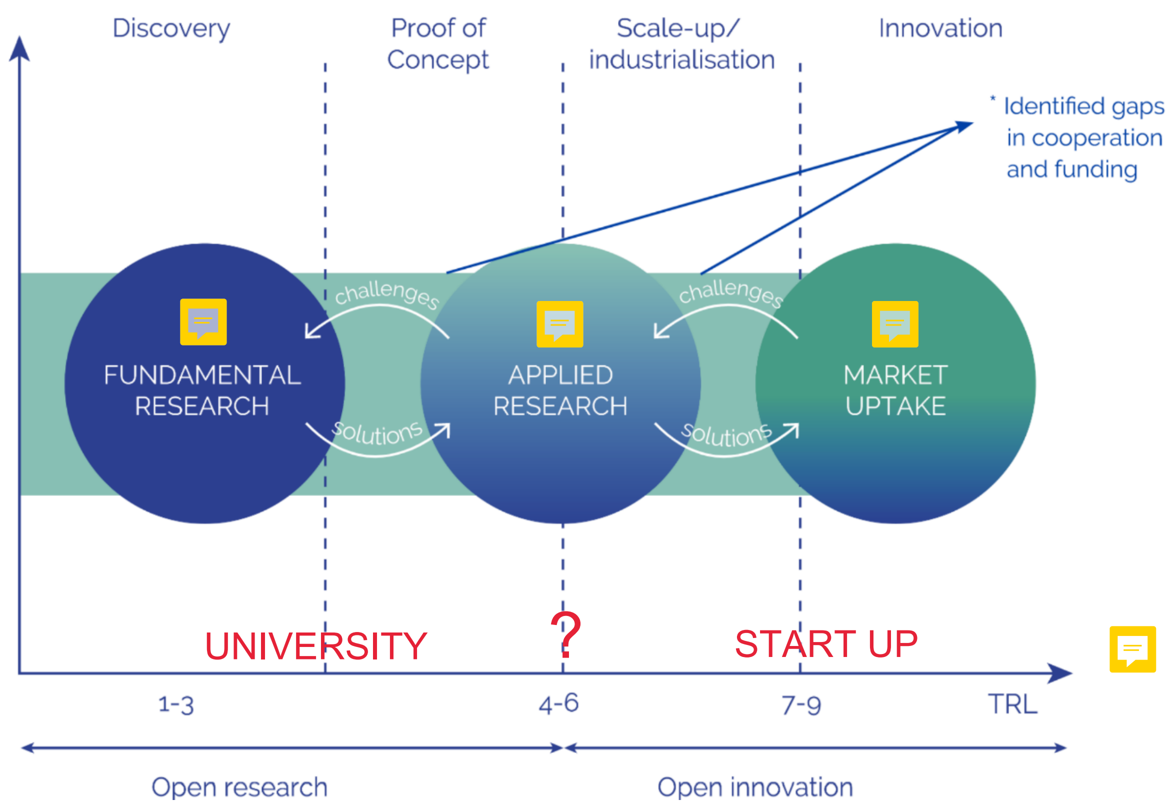
# Start-up in ICT:

## Lesson 1 – Introduction →

*Every university has 3 fundamental missions:

- Scientific research
- High education / Teaching
- Bring everything to the public = Progress (To share culture, knowledge and to transfer the results of the research outside of the university, contributing to the overall social growth and territorial culture path.)

*The research/innovation loop:




- TRL: Technology readiness level
- Between open research and open innovation -> the connection between university and start-up

*The best know-How/ IP/ Tech transfer "Hard drive" is a brain with motivation.

## Lesson 2 – Entrepreneurs →

*Work to do "outside the building"

*Impact of MIT on economy:

- 60% of students, studying PhD
- 25% of the alumni have been involved as founder or co-founder of a hi-tech company
- Grants huge revenues per year!
- The median age of alumni launching a company has been steadily declining and in the 2010 gets to 27 years old.
- 80% of the companies launched by alumni survived for more than 5 years.
- Activities involved in Entrepreneurship/ Innovation/ Advisor. In the Innovation: the participation of 55% in product development.
- Reported employment and revenue distribution:

**Table 1a. Reported Employment and Revenue Distribution of MIT Alumni–Founded Active Companies, 2013**

| | | Employment | | | Revenues ($ Millions) | | |
|---|---|---|---|---|---|---|---|
| Employment category | Percent of companies | Median | Mean | Percent of total | Median | Mean | Percent of total |
| 1–10 | 51.0% | 4 | 4.5 | 1% | 0.1 | 4.6 | 4% |
| 11–50 | 27.8% | 24 | 26 | 4% | 3 | 7.4 | 3% |
| 51–200 | 12.6% | 100 | 116 | 8% | 16 | 67 | 13% |
| 201–500 | 4.6% | 325 | 354 | 9% | 50 | 248 | 18% |
| 501–1,000 | 1.8% | 825 | 819 | 8% | 110 | 756 | 21% |
| 1,001–5,000 | 1.8% | 2,500 | 2,750 | 30% | 450 | 900 | 26% |
| 5,001–10,000 | 0.3% | 7,000 | 7,600 | 12% | 600 | 1,302 | 6% |
| 10,000+ | 0.2% | 15,000 | 21,429 | 26% | 2,000 | 2,743 | 10% |

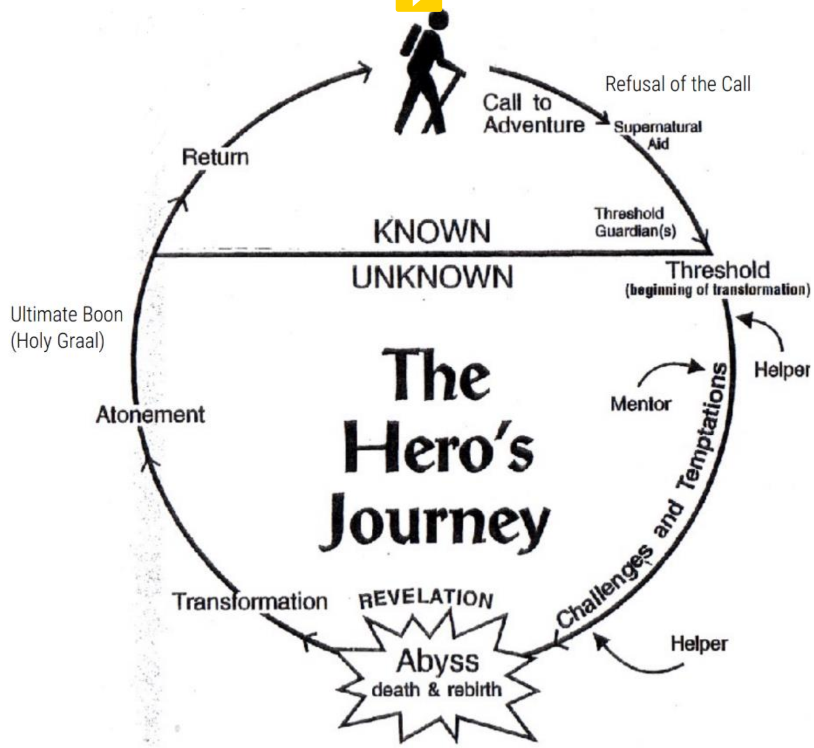
*Who is an "Entrepreneur"?

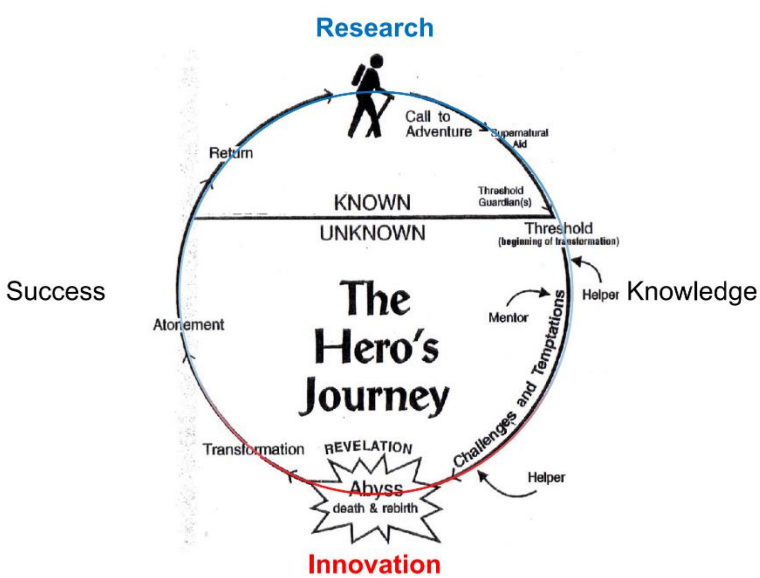
- "entrepreneurs are individuals who exploit market opportunity through technical and/or organizational innovation" Schumpeter, 1965
- "entrepreneurship is about taking risk" Peter Drucker, 1970
- "an entrepreneur is a person who habitually creates and innovates to build something of recognized value around perceived opportunities" Bolton and Thompson, 2000
- "an entrepreneur is a person who sets up a business or businesses, taking on financial risks in the hope of profit." Dictionary
- "Entrepreneurship is the creation or extraction of value. entrepreneurship is viewed as change, generally entailing risk beyond what is normally encountered in starting a business, which may include other values than simply economic ones." Wikipedia

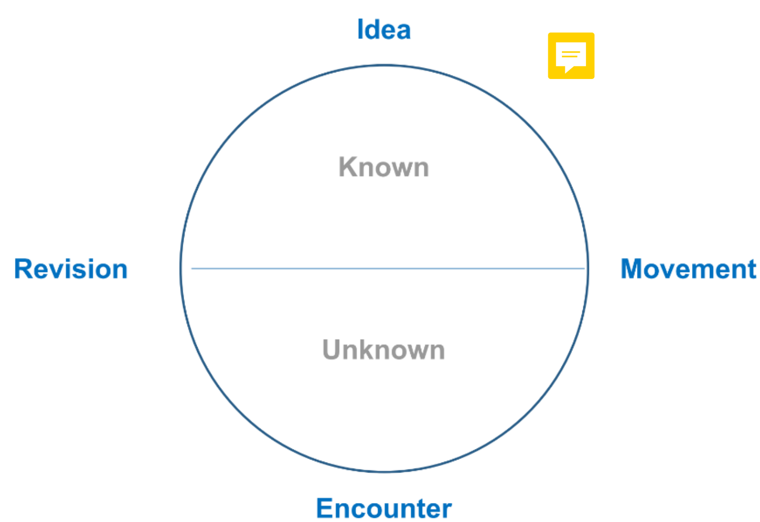
- “Entrepreneur is “a Hero”. one that accepts risks to pursue a bigger value, often “destroying” what is known. [Fabio D'Alessi]

*Where to start?

- The Monomyth Theory (Campbell, 1949)



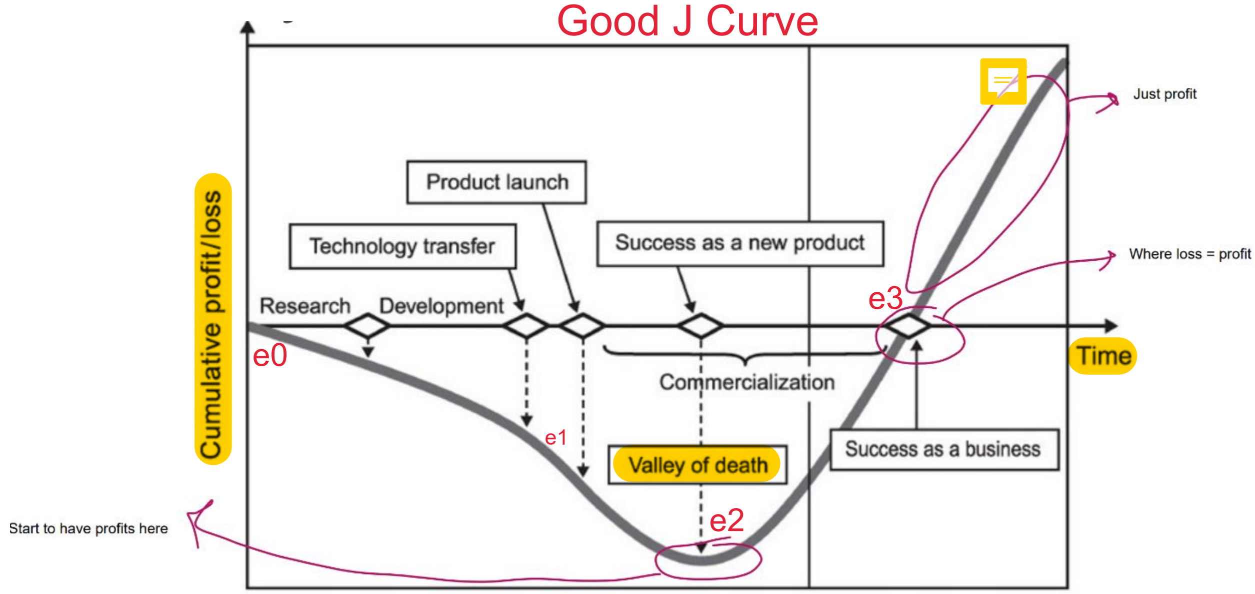



# Lesson 3 – J Curve, RL, Startups →

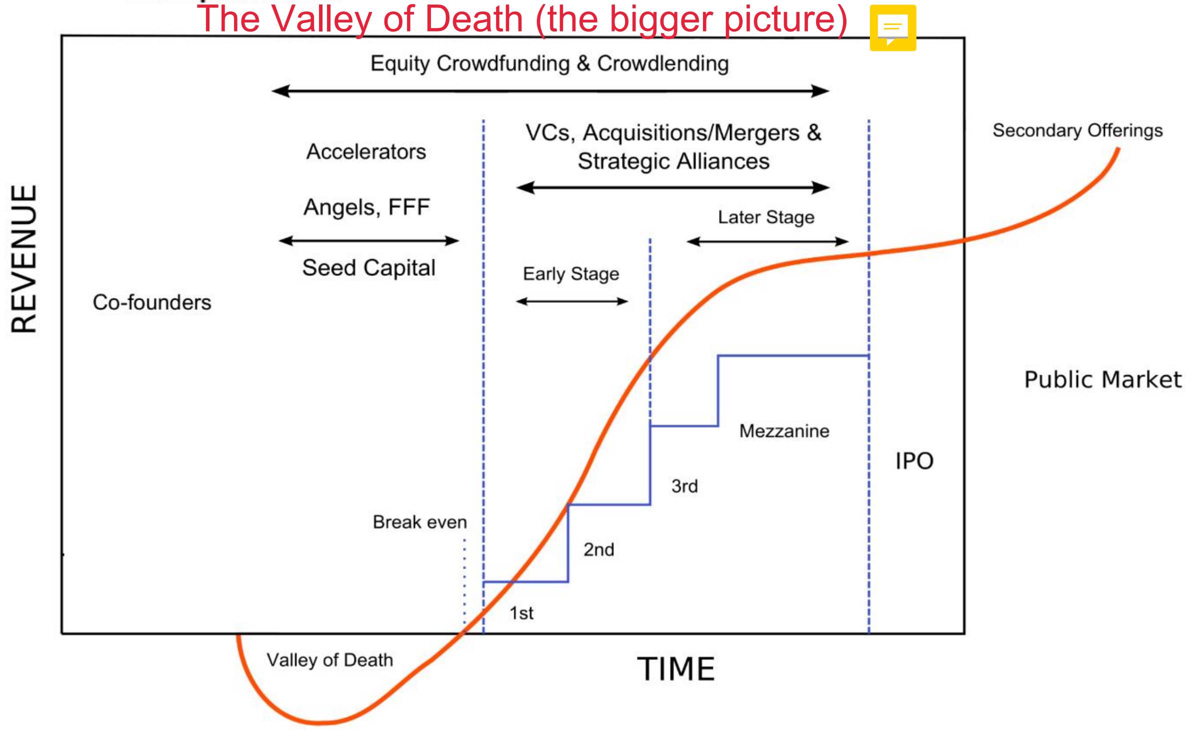
*The **valley of death:** **(Check the first screen in the slides again!)**

Good J Curve

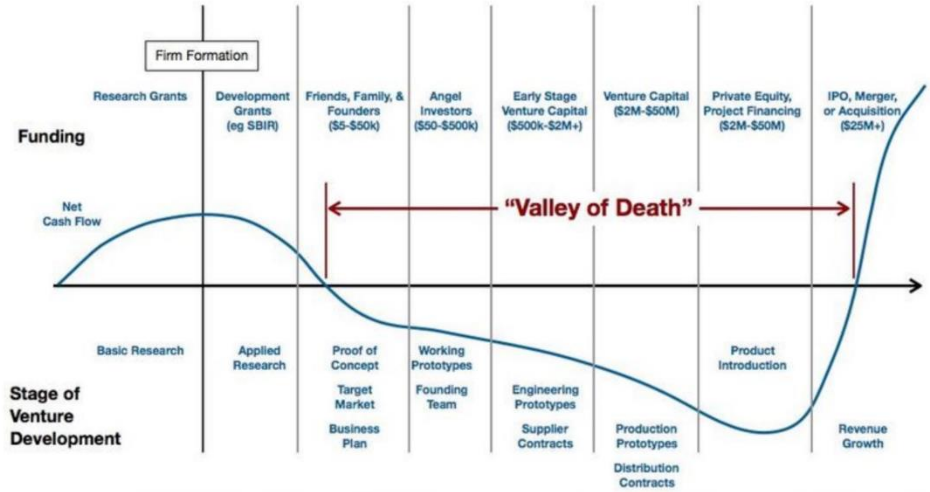


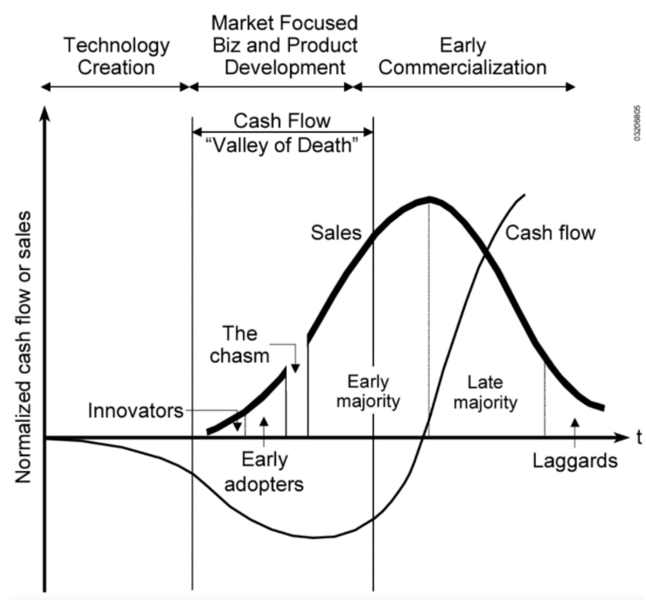

**Development Curve**

The Valley of Death (the bigger picture)

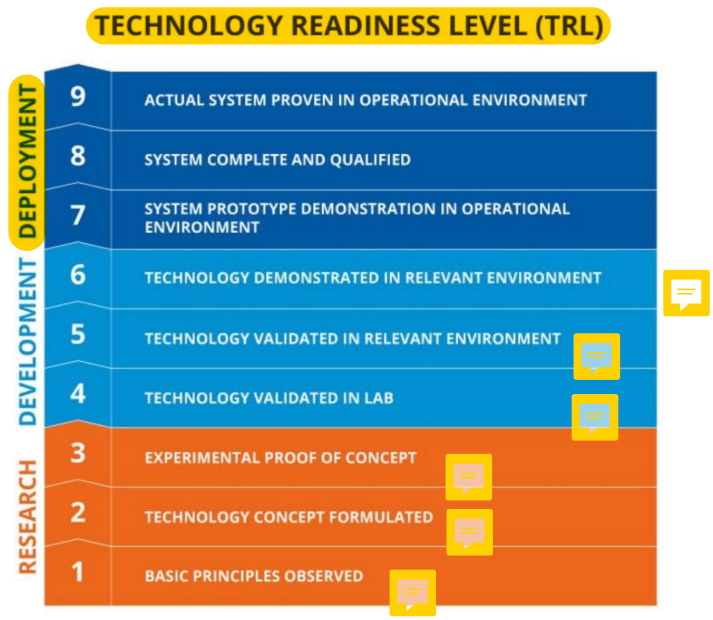


Another source (different sources, same story)

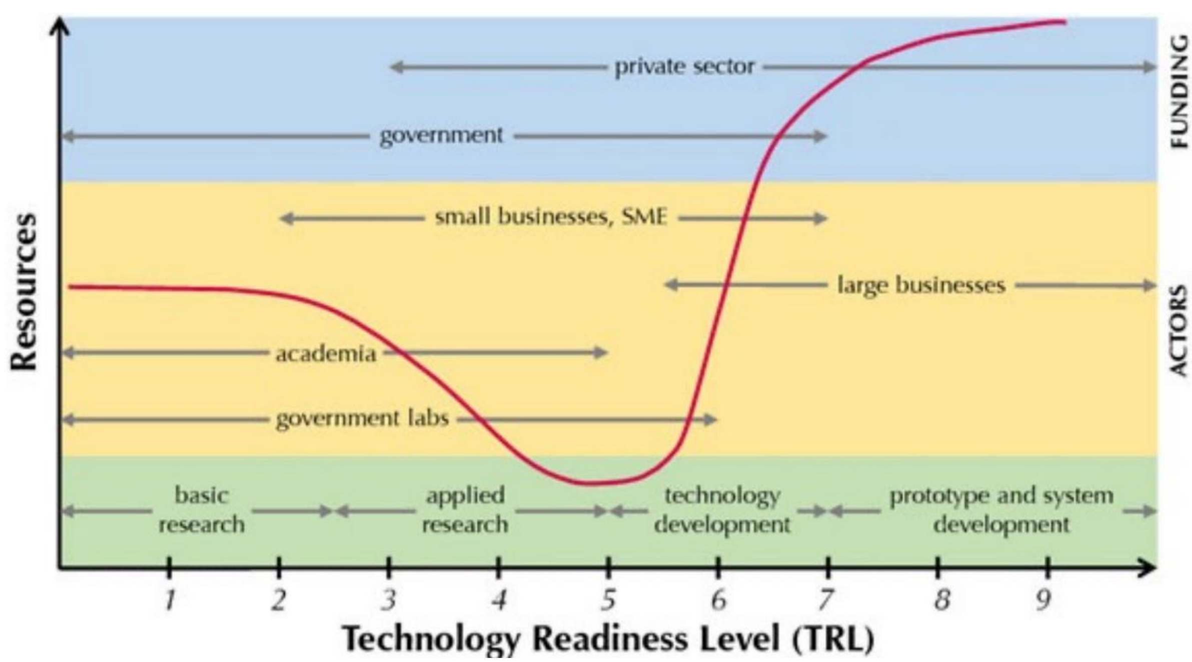



- Additional information on the typical venture path can be added by looking at the Sales and Business Development stage. -> Important concept: in a startup, technical & product maturity, interest for investors and business model maturity are intrinsically linked.
- "You cannot improve what you cannot measure" Lord Kelvin
- So, how to measure the features that are not measurable like the maturity of the product and business model? With using "Readiness Level" (or RL) indexes
- RL: scales ranging from 1 (lowest) to 9, describing the maturity of specific features. Most important: The TRL: technology readiness level




- The link between TRL and valley of death




*__Startup__: is a temporary organization used to search for a repeatable and scalable Business Model. (Steve blank)

Has 6 categories:

- **Lifestyle Business:** A business run by its founders primarily with the aim of sustaining a particular level of income and no more; or to provide a foundation from which to enjoy a particular lifestyle. A lifestyle business's goal is to provide a great quality of life to its owners.
- **Small Businesses:** They work as hard as any other entrepreneur. They hire local employees or family. Most are barely profitable. Small business entrepreneurship is not designed for scale, the owners want to own their own business and "feed the family". Example: home based food services; plumbing; restaurant; small niche markets.
- **Startups designed to be scalable:** Scalable startups tend to group together in innovation clusters (Silicon Valley, Shanghai, New York, Boston, Israel, etc.). They make up a small percentage of the six types of startups, but because of the outsize returns, attract all the risk capital (and press). Example: Airbnb, Uber, Netflix, …
- **Startups designed to be quickly sold:** Their goal is not to build a billion dollar business, but to be sold to a larger company. Example: pharma, hitech. The goal of the management is different than that of building a profitable business
- **Startup from Large Companies:** Changes in customer tastes, new technologies, legislation, new competitors, etc., can create pressure for more disruptive innovation—requiring large companies to create entirely new products sold to new customers in new markets. They are "transformational innovation projects" of large companies.
- **Social startups:** Usually they are charitable initiatives, their goal is to make the world a better place, not to take market share or to create to wealth for the founders.

In the call to adventure phase we should decide: What kind of startup are we going to launch/ What is our purpose/ What do we want to become?

## Lesson 4 – Problems and Solutions →

*The Purpose -> What change do you want to bring about in the world and what is the reason your organization exists. the fundamental message that fires your people up, brings them to work for more than just a paycheck, and gives meaning to their effort. It is often the very idea that launches a company in the first place, sustaining and guiding it through the earliest stages.

*" How to make it", "What makes work unique and recognizable"?

- It's inspired by organization's culture, strategy and "core values".

*First stakeholders will be your cofounders, family and friends.

*The Impact -> should be more aspirational than the Purpose Statement. because you may never quite get there, but it will keep people motivated and sustain the organization in its later stages of growth.

*The Vision -> describes, in a simple, immediate way, the major aspirations of an organization – what is hopes to achieve or become.

*The Mission -> describes, in a simple, specific way, how the organization is going to achieve its Vision.

*The Values -> defines what the organization believes in and how people of the organization are going to act and behave. Code of Ethics. The whole company is structured around this.

_Examples of Vision, Mission and Values:

- Google:
  - ✓ Vision: "Providing an important service to the world, instantly delivering relevant information on virtually any topic."
  - ✓ Mission: "Organize the World's information and make it universally accessible and useful."
- Twitter:
  - ✓ Vision: "We believe in free expression and think every voice has the power to impact the world".
  - ✓ Mission: "Reach the largest daily audience in the world by connecting everyone to their world via our information sharing and distribution platform products and be one of the top revenue generating Internet companies in the world."

*The Ideas:

- May come from academic projects or industry experience or any other experience which may spark intuition of a need.
- Are often associated to assumptions and assumptions are what make great ideas fragile or vulnerable.
- ideas, alone are "worth nothing"

*The Innovation:

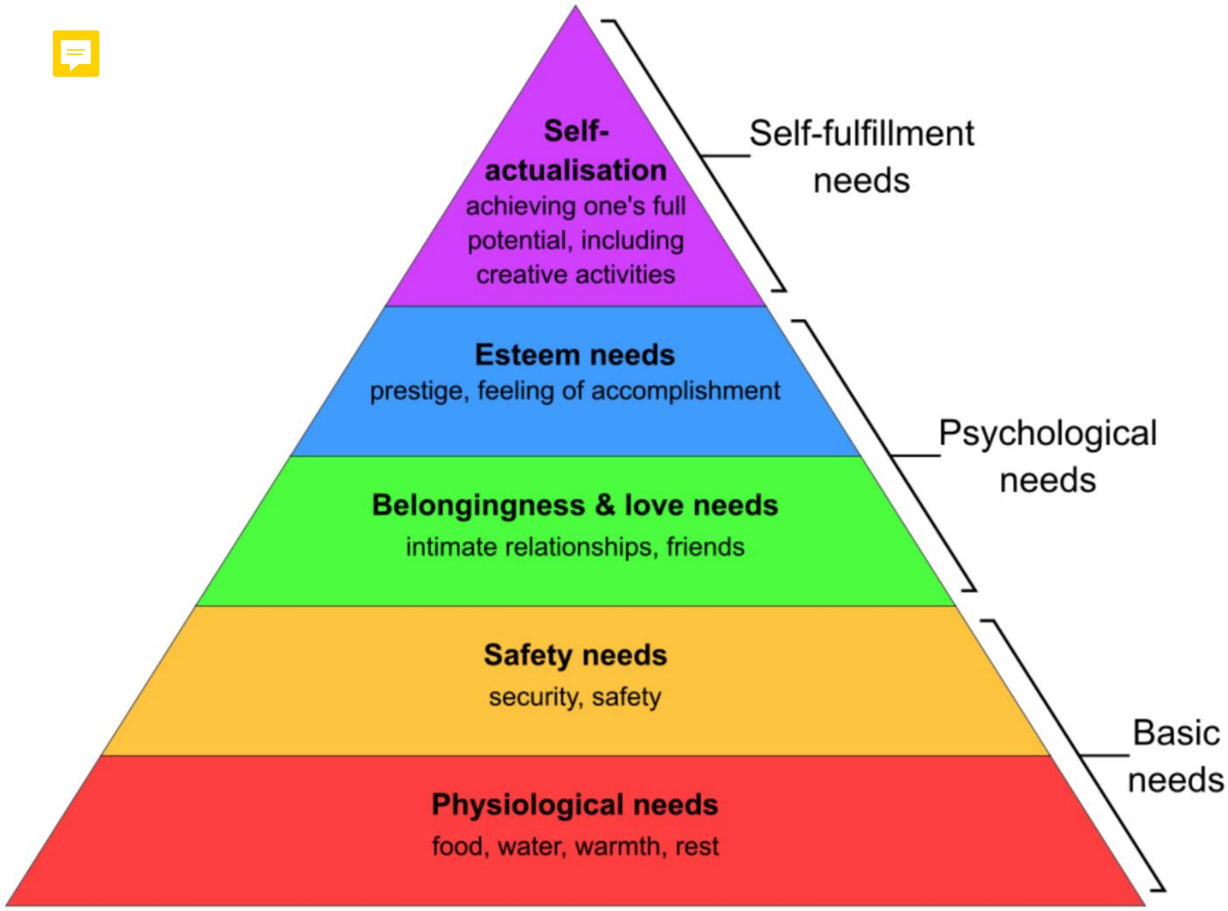
- Innovation = Invention * Commercialization (Bill Aulet, MIT)
- Commercialization is often forgotten and it is just as hard: it is a research objective, it requires experimentation and, if totally neglected, brings the whole Innovation equation to zero ("worth nothing")
  - ✓ Be sure that there' is a market that wants your product. Before you build it. (Lean (Manifesto – Founder Mantra

*Companies start from the problem worth solving.

*" The Product is the Final Destination of a path, it's never the Starting Point ... Nail down the inner Motivational factors, somebody's Pain Points identification is the Beginning." Steve Blank

*Important: Not having the wonderful idea but having the Possible Intuition of a need. – Problem / Solution fit – Market / Product fit

*Maslow’s hierarchy of Needs (aka “the Pyramid”):



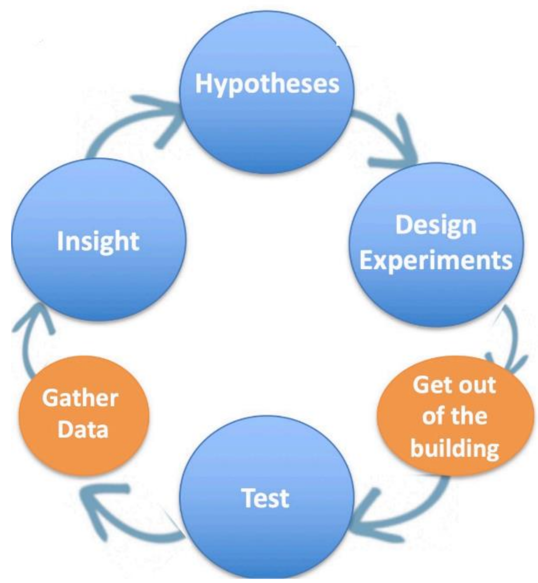

- Theory on “Human Motivation”
- Widely used in all fields to express the way we deal with needs and aspirations, giving different priorities to different type of needs.

*First look for pain and once you can heal it, now find someone who cares.

*How to validate solving a ‘Correct’ Problem?

- Bottom-up street Data based. “Get out of the Building”:
  - ✓ Ask Who will buy it
  - ✓ Get to the Inner Need: The Pain
  - ✓ How the Solution will change user’s lifeRoutine. Describe pre/post User Journey
- Why now? Can you do it, now?
- Why you? IP meaningfulness

- Then “Iterate”!




*We should define our product.

*The person who goes and communicates with other people is the good CEO! Because after talking with other people, he/she can understand the problem to find a solution for that. The person who is designing the product or coding behind their systems, can’t become a good CEO because you need to good beyond the society. One example -> read slide 23!

## Lesson 5 – Problems and Solutions 2 →

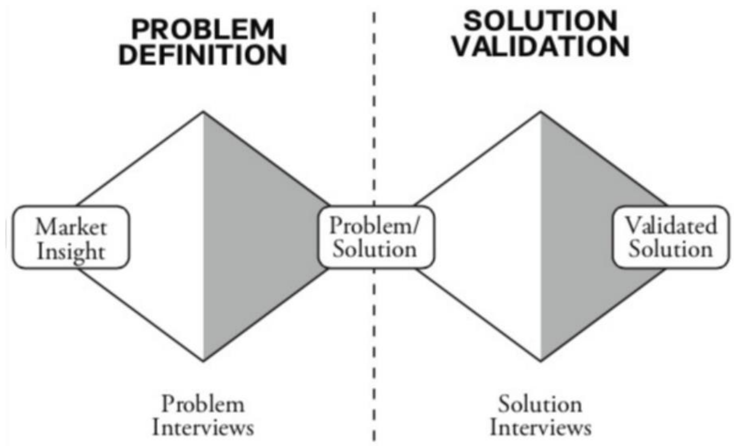
*Creating the product: It’s all about market and people, not about products and technology.

- We have two options:
  - ✓ The Product Development Model: The Path to Disaster. Where is the Customer??
  - ✓ The Customer Development Model: The Path to Epiphany.

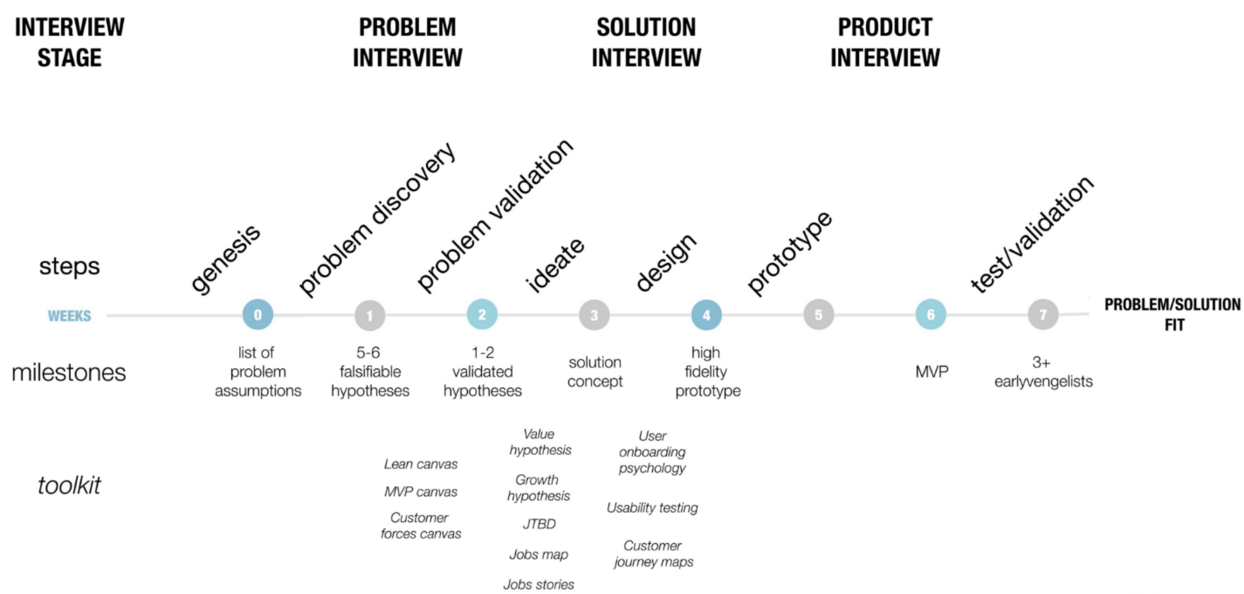
*Value proposition:

- The Key mindset in defining your Value Proposition is focusing on a real problem to be solved rather than on a technical solution which is really cool.
- The Key Value Proposition is Validated following two fundamental steps:
  - ✓ Problem/Solution Fit
  - ✓ Market/Product Fit

*Problem/Solution fit validation: being sure that the product you are planning to develop is something that people will actually want to buy (double diamond diagram / 40% Rule…)



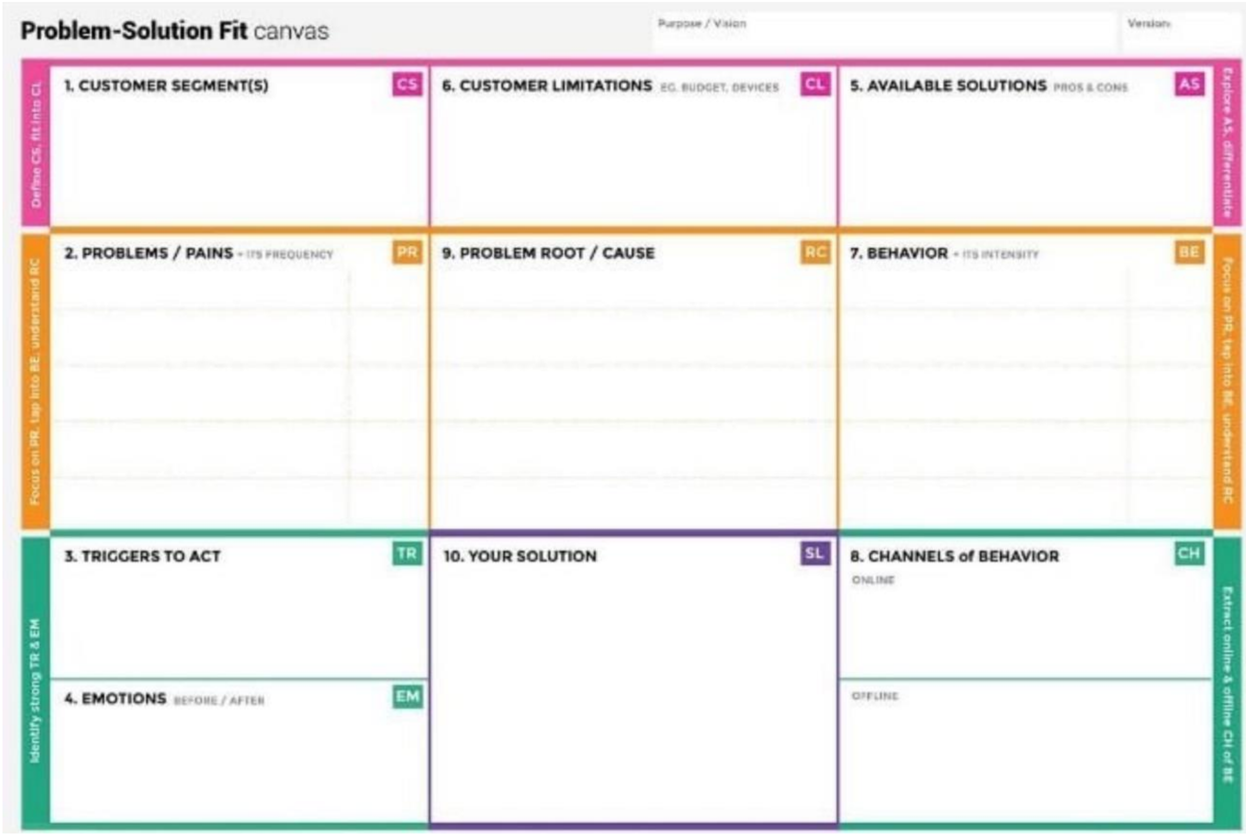

- Methodology:




*The Canvases:

- are invaluable tool that help having the «big picture» in mind, focusing on some Key aspects and making sure everything is "covered"
- They are normally simple A4 diagrams to fill out.
- In the course Lean Canvas by Ash Maurya
- Note: Canvas are invaluable tools; they don't resolve anything – you have to do the work!

- Problem/Solution fit canvases:

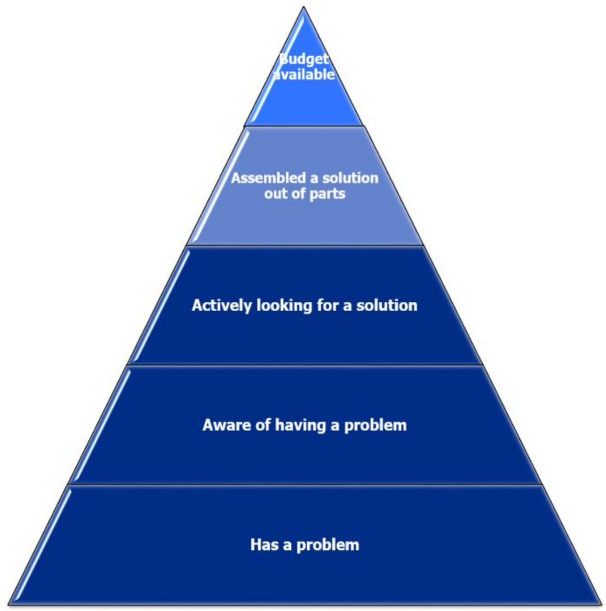



*Problem/Solution fit requirements:

- Find Customer(s) before you build the product.
- Don't build anything (beyond prototypes) until they commit to buying it as per agreed proposal.
- Who will buy a non-existent product? An early evangelist.

*Early-Evangelist ->

1. Early adopters, who buy unfinished and untested products because they want to be 'first' to:
   - ✓ build a competitive edge
   - ✓ be glam
2. Leaders, with technical competence on how to use new solution to existing problems they face
3. Those willing to make a leap of faith and buy an early solution.
4. Enthusiasts, who spread the good news about the product, for others to follow




*Make something people want and creating the experience people love.

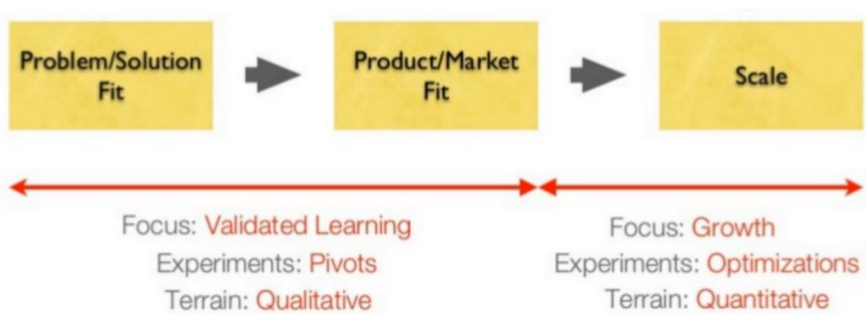
*Delight the early customers:

- Be insanely obsessive about that.
- Solve it for The Customer (SFTC).
- Automate.
- Deliver Fast.
- Iterate
- Make them love the product. Do not engage with customers you're not justifiably confident you can delight

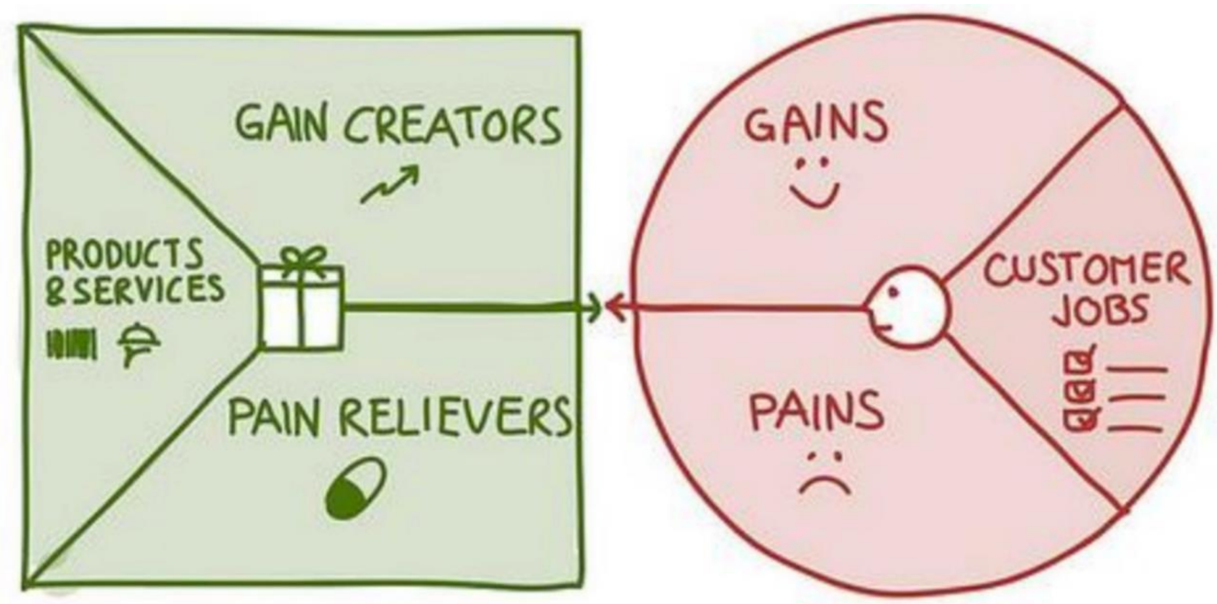
  ➔ Note: Better to have 100 customers that love the product rather than having 1000 customers who like the product.

## Lesson 6 – Scaling up →

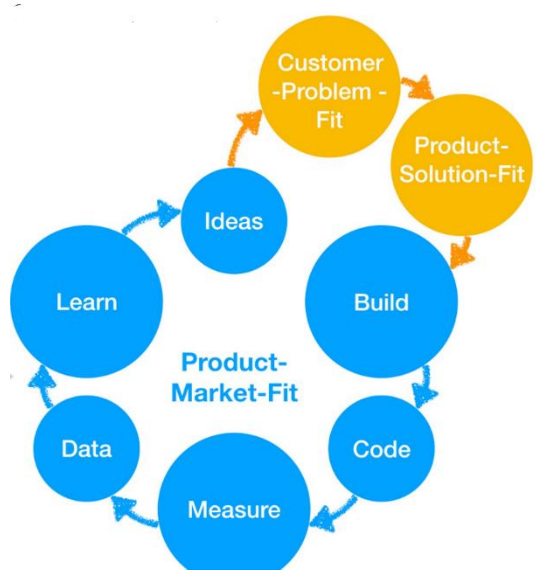
*Product/Market fit:



- Do I have the problem worth solving? (Value proposition canvas)




- Product/Market fit means being in the good market with a product that can satisfy the market.

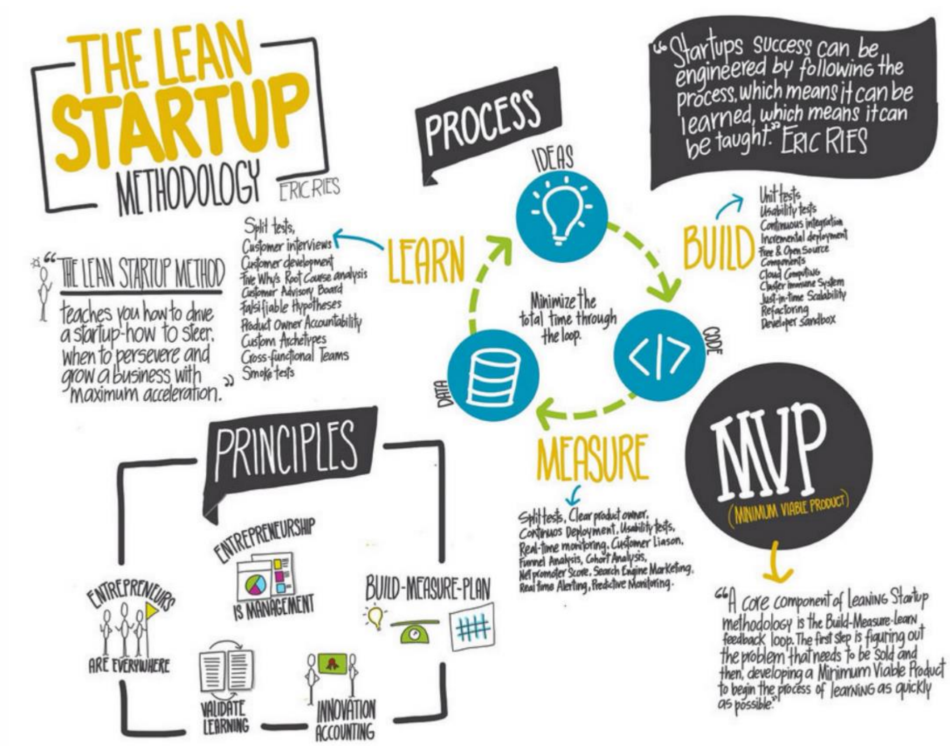



*Iteratively <u>test and test</u> and look for signs of activity both good and bad.

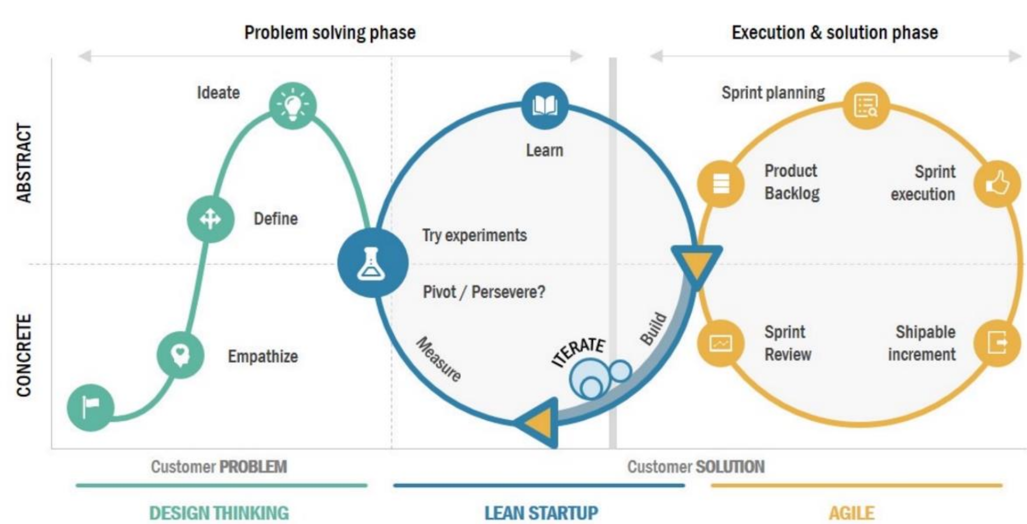
- Ask customers whether or not your offering is something they would pay for.
- <u>Ask a user to pay money for a Product is the simplest way to Validate it (**)</u>
- Test your Product. Test your business theory. Pivot!
- No sign is always bad, it means you are building a bubble
  <u>(**)</u> Money Wins. The biggest clue that you are solving a real pain point for your customers is that you are being paid for your product or services.

*The lean startup methodology: (Eric Ries)

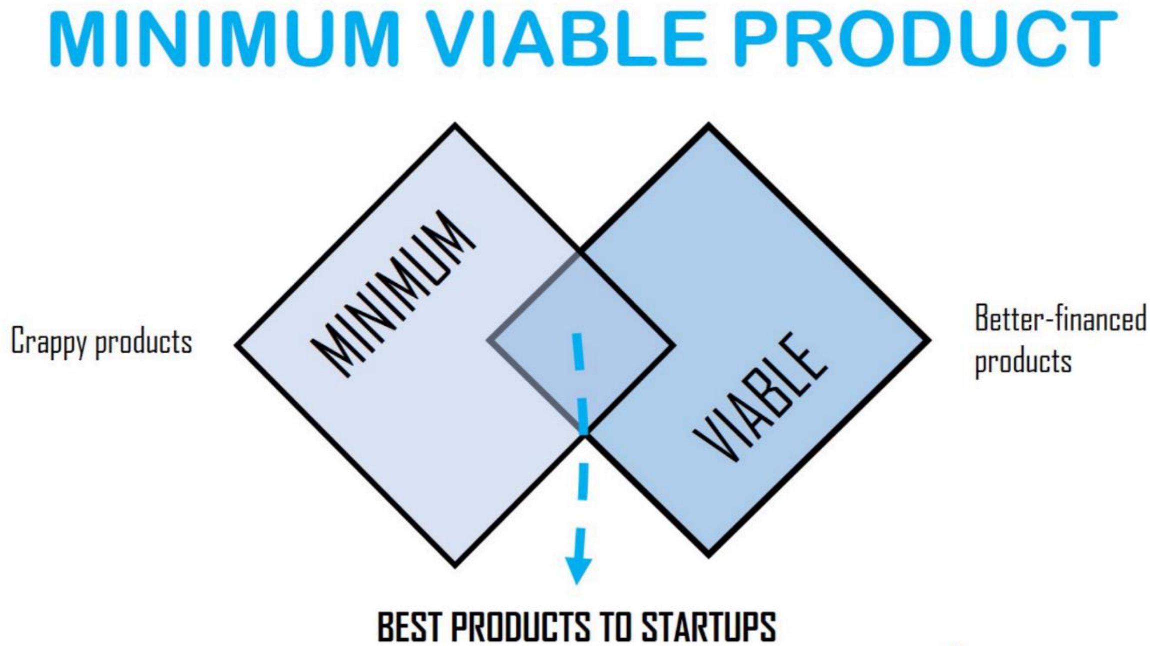
New methodology for developing businesses and products, which aims to shorten product development cycles by adopting a combination of business-hypothesis-driven experimentation, iterative product releases, and validated learning. The central hypothesis of the lean startup methodology is that if startup companies invest their time into iteratively building products or services to meet the needs of early customers, they can reduce the market risks and sidestep the need for large amounts of initial project funding and expensive product launches and failures.



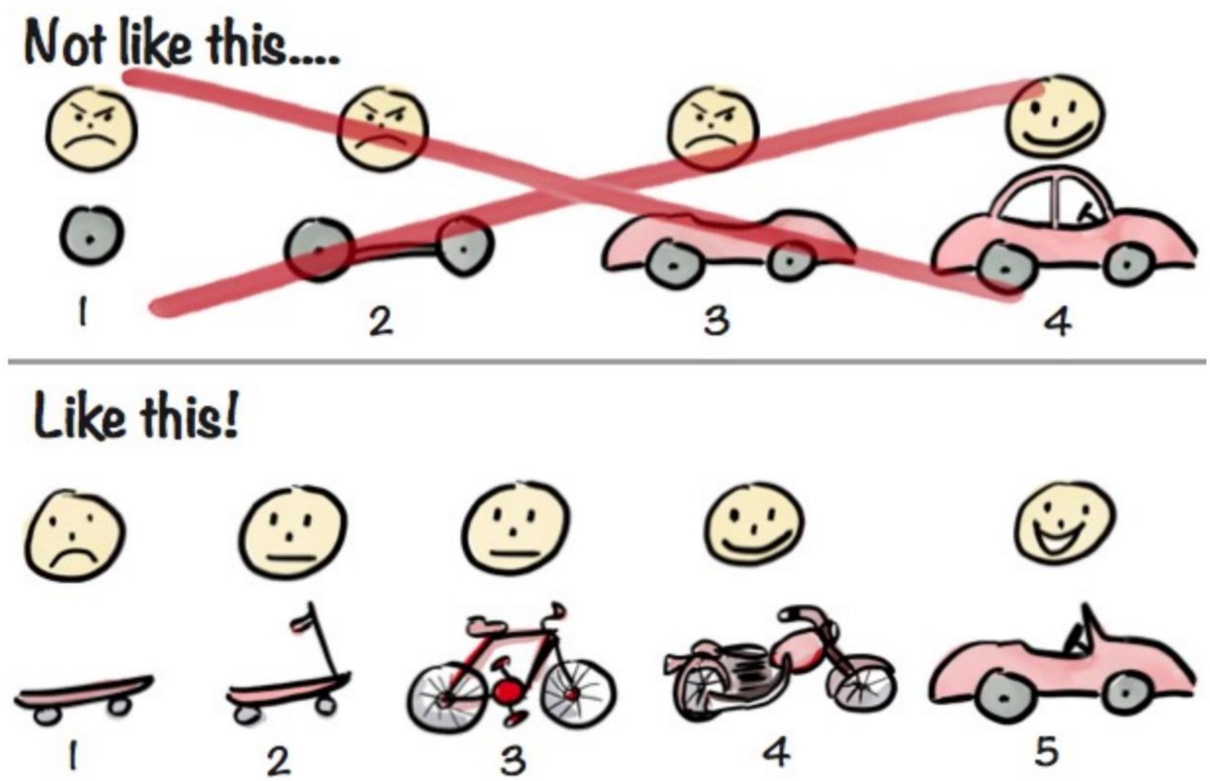

*Full picture:



*The MVP:




- An MVP (Minimum Viable Product) is the version of a new product which allows a team to collect the maximum amount of validated learning about customers with the minimum effort



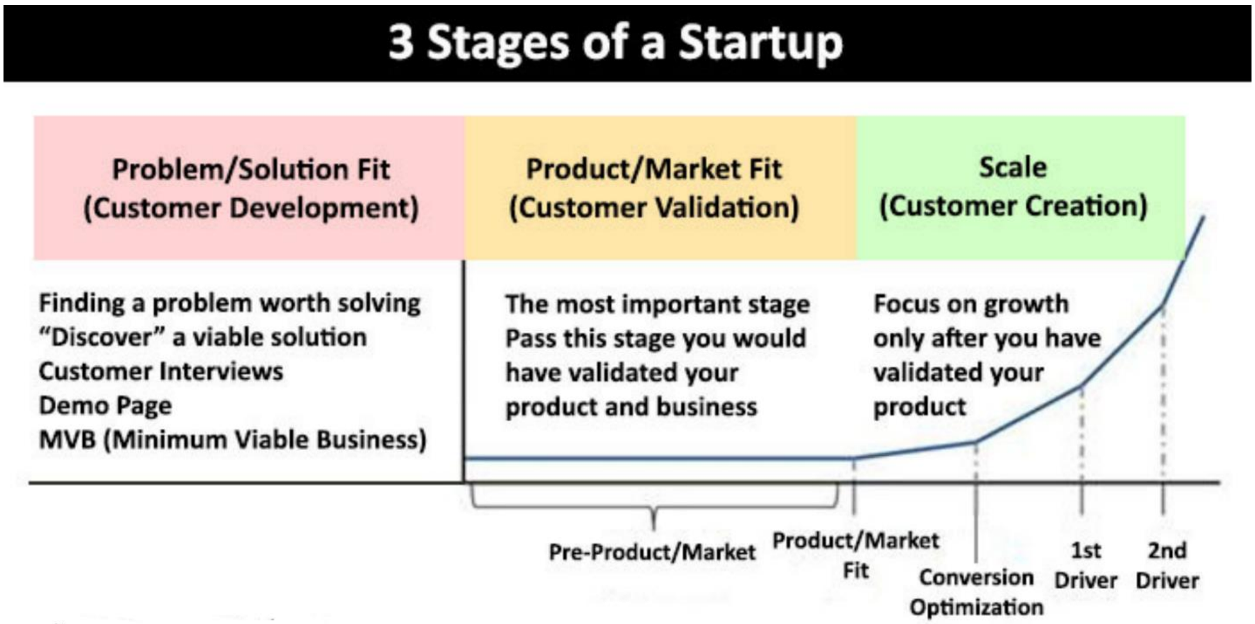

- Bringing your startup to Cruise Speed: Validate, validate and then quickly scale up!

*Steps now:

1. Problem/Solution Fit
2. Market/Product Fit
3. Scale up

*Scaling up: There is a dramatic shift in the mind attitude from Problem/Solution and Product/Market fit stages, where the focus is qualitative, to Scale-up where the focus is quantitative.

*Takeoff – Three stages of the startup:




*Don't grow in all the cost but grow healthy:

1. Recruit: Users. Manually. 1-by-1. Door-by-door. A/B Test. Observe which kind seem enthusiastic. Seek more the like.
2. Discern. Understand the difference between Who is paying and Who is using. Map Needs and Intentions of the Parties

- Heavy lifting Make them love the product
- Compound Growth Rate will (later) do the amaze
- Revenue is not relevant, yet, understanding who pays for what, is.
- As it's much easier to scale the few (who love you), than trying to get 1M who like you to love you
- There's no shortcut: this way is going to be faster, than you should not follow this path. If you can get even 1 person to love you, then you can take the challenge to replicate and scale that

## Lesson 7 – Scaling up 2 →

*Don't operate like you're frozen in time!

*As much as the venture grows, it crosses many different organization scale(OS).

| | Org Scale (employees) | Customers Scale (B2B) | Users Scale (B2C) | Business Scale (Rev) |
|---|---|---|---|---|
| **OS5: Nation** | 10,000 | 1,000s | 10,000,000s | 1B+ |
| **OS4: City** | 1,000s | 100s | 1,000,000s | 100M+ |
| **OS3: Village** | 100s | 10s | 100,000s | 10M+ |
| **OS2: Tribe** | 10s | 1s | 10,000s | 1M+ |
| **OS1: Family** | 1s | 0 | 1,000s | <€1M |

- Advice can't be applied generally across stages.
- Challenge the process, each time, at each level of scale
- what works at one stage might not work at next. At every order of magnitude expect processes to break

*One of the keys to get to scale, is to do things that don't scale

- Try thinking of venture as pairs of what you're going to build, plus the unscalable thing(s) you're going to do initially to get the company going
- What scale fast on the cost side: Low priority.
- What doesn't scale effort and size: High Priority.
- "Keep it small, solve problems that do not scale first. Once you hit the point where it's working, then Grow, as fast as possible." Eric Schmidt, former CEO of Google

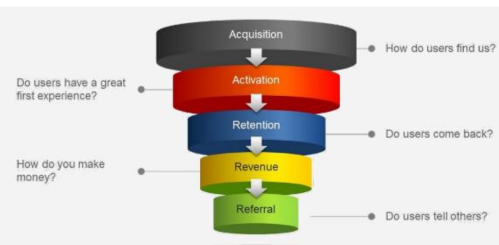
* "Don't focus on scaling the numbers until you have people engaged with the product." Brian Chesky, Founder and CEO of AirBnB

*Tooth brush test: Can you create a product that people use every day? (Lary Page)

*Measure Growth:

- Frequent (i.e. almost weekly) Be insanely obsessive about that.
- Define your KPIs. Be Qualitative over Quantitative

1. **Acquisition** - how do users find you
2. **Activation** - do users have
3. **Retention** - do they come back?
4. **Revenue** - monetization?
5. **Referral** - buzzword?



* “Be patient for Growth but impatient for Profit.” Clayton Christensen, HBS Professor and Disruptive Innovation paradymes creator (1997)

## Lesson 8 – Business Modeling - BMC→

*Some typical questions from the Cockpit:

- ‘They are asking for a Business Plan ... let’s go boil some numbers.’
- ‘The only sure part of the P&L is the Budget for the expenditure plan. Let’s get it through.’
- ‘If one could predict those top-line numbers of the P&L, he could be in the wizard’s business.’
- ‘Nobody can be considered accountable for numbers that’s impossible to create accurate.’

*Business Plan (BP):

- Not always the correct tool. Time to align to mainstream practice.
- BPs related to Disruptive propositions never survive the crash of the market launch
- BPs are ok for established, maturely sized markets. Not ok for: non-existing (yet) markets or for their Disruptive evolutions.
- Roadmaps are limited to Evaluative requirements, only
- Company Valuation: Discounted Cash Flow (DCF), Comparable

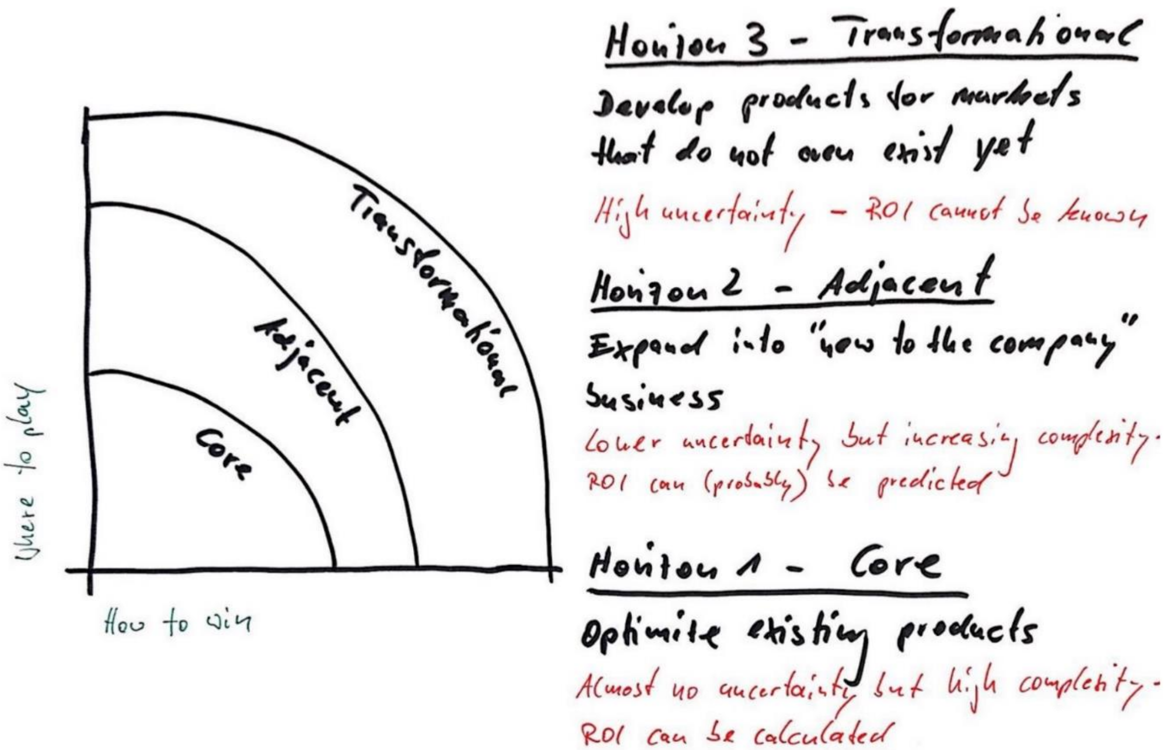
*Breakthrough propositions take unpredictable time to get adoption.

- Why use an extrapolation 3-5 years' formula when dealing with sublinear behaviors, hopefully turning (fast) into superliner ones sometimes exponential adoption curve?
- Limit the 'few point market share syndrome'

*Traction: Traction is a bottom-up measure of the product's engagement with its market

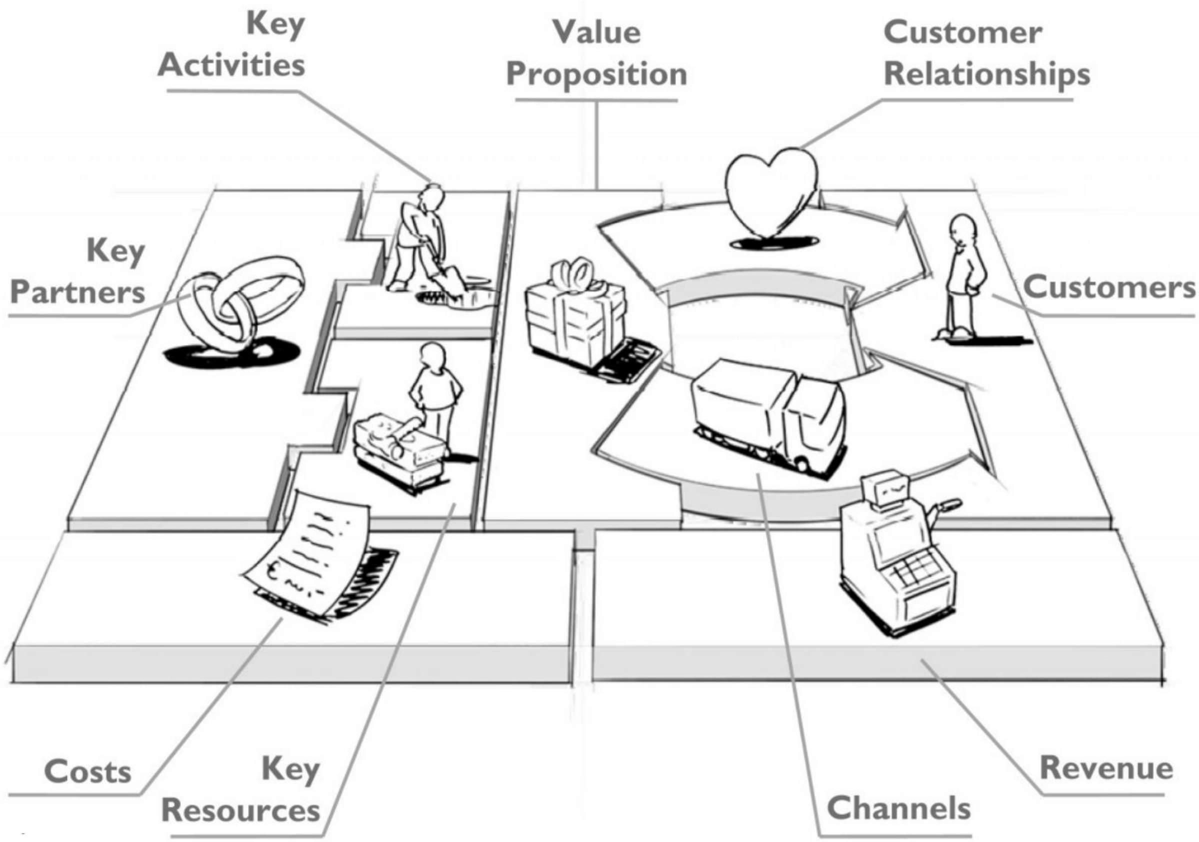
- Speaks louder than any top down figure
- No comparison with any existing Product
- Direct Substitution doesn't apply
- Current segmentations do not apply
- Analysts data are not being used alone to guess markets sizes when the Product Experience Will Refactor/Reshape them

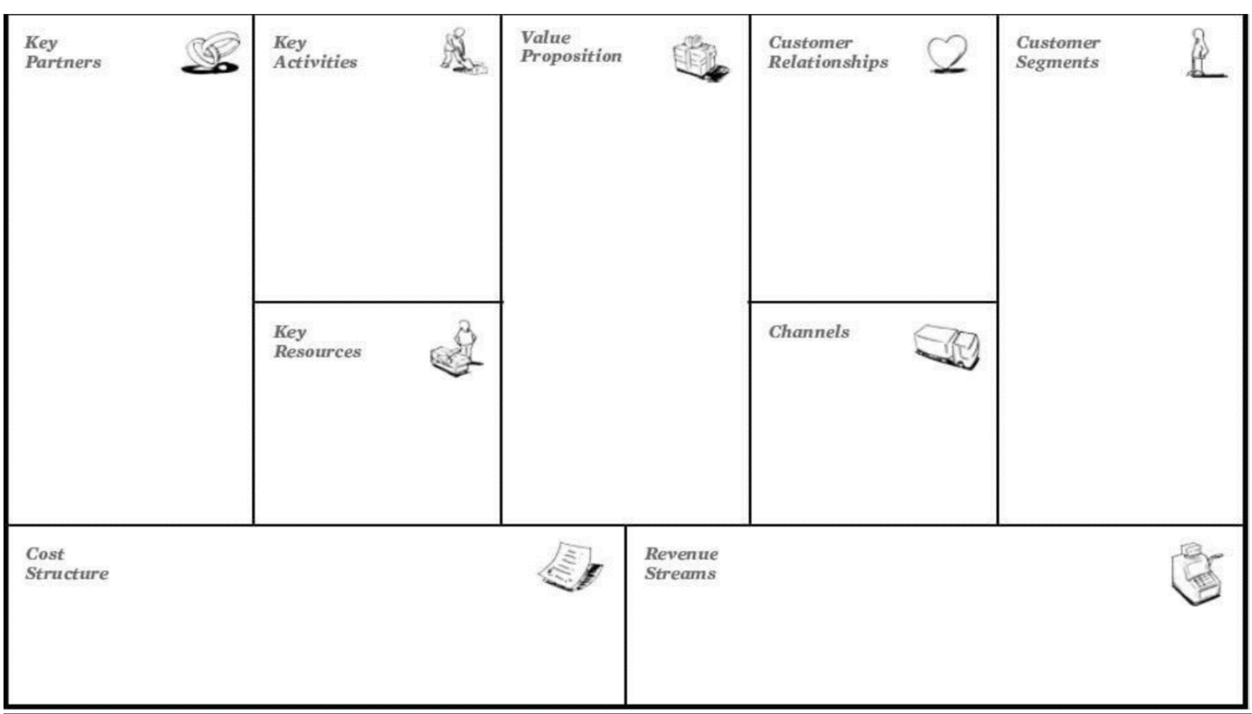
*Since the BP is not the correct tool, what is an established practice to value Disruptive Activities? How can they be accepted and discussed at Investors and C-Level?

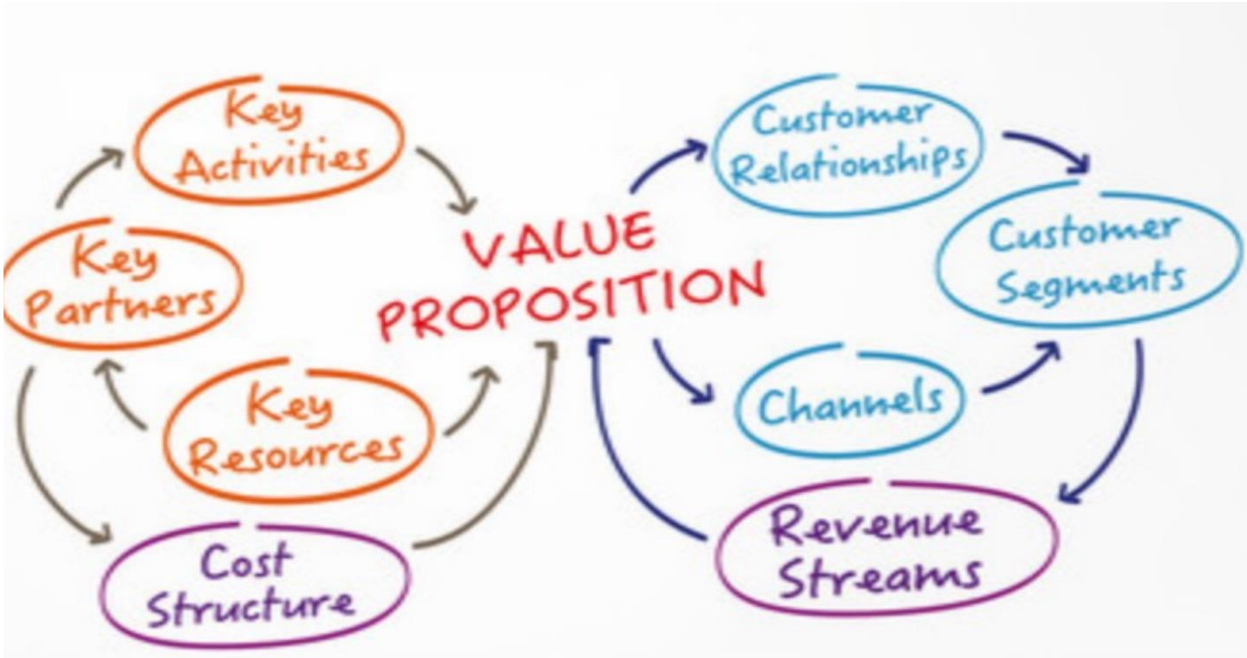



*What are your goals? -> Business modeling

- The Business Model Canvas(BMC)


Key Activities
Value Proposition
Customer Relationships
Key Partners
Customers
Costs
Key Resources
Channels
Revenue


Key Partners
Key Activities
Value Proposition
Customer Relationships
Customer Segments
Key Resources
Channels
Cost Structure
Revenue Streams




*Infrastructure:

- **Key Partners & Suppliers:** supply chain, risk management, partnership criteria, partner network, etc.
- **Key Activities:** required by the business model and by the value proposition, customer management, dev, problem solving, etc.
- **Key Resources:** required by the business model and by all its parts (value proposition, channels, relationships, …) – IP, Staff, Financial resources, etc.

*Customers:

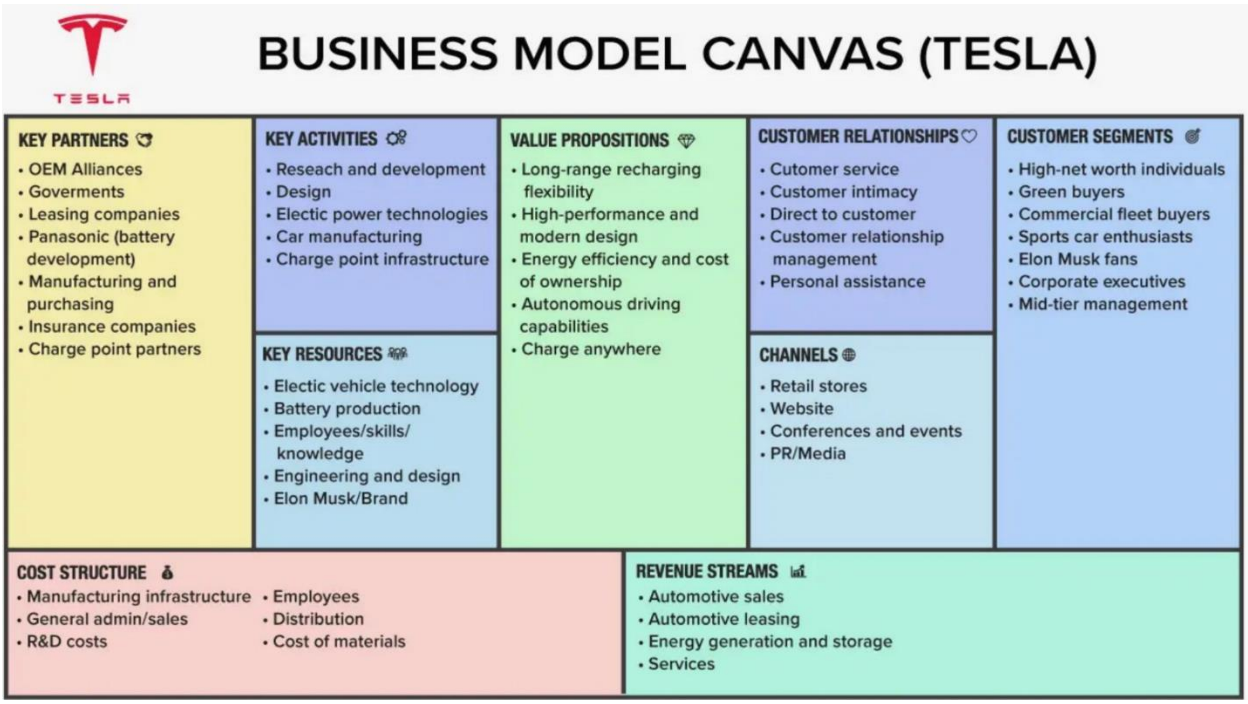
- **Customer Segments:** carefully identify and describe who your most important customers are.
- **Customer Relationships:** what relationship models you are adopting directly with your customers, how efficient they are, cost, do you use direct assistance, communities, automated tools, etc.
- **Channels:** what are the best channels you use to reach customer segments? Issues: product/brand awareness? Evaluation? Purchase? Delivery? After Sale?

*Financials:

- **Cost Structure:** most expensive resources and activities. Is your business cost-driven or value-driven? List fixed/variable costs, scale/scope etc.
- **Revenue Streams:** list revenue streams and their main features (how much customers are paying, how, etc.). Do you model revolve around asset sale, usage fees, subscription fees, lending/renting/leasing, licensing, brokerage fees, advertising… - how do you set pricing (fixed, dynamic, etc.)

*Your Unique Value Proposition: What makes your product/service unique and provides you with the best competitive advantage through various elements such as newness, performance, customization, "getting the job done", design, brand/status, price, cost reduction, risk reduction, accessibility, and convenience /usability.

*Example:




*Pros of BMC:

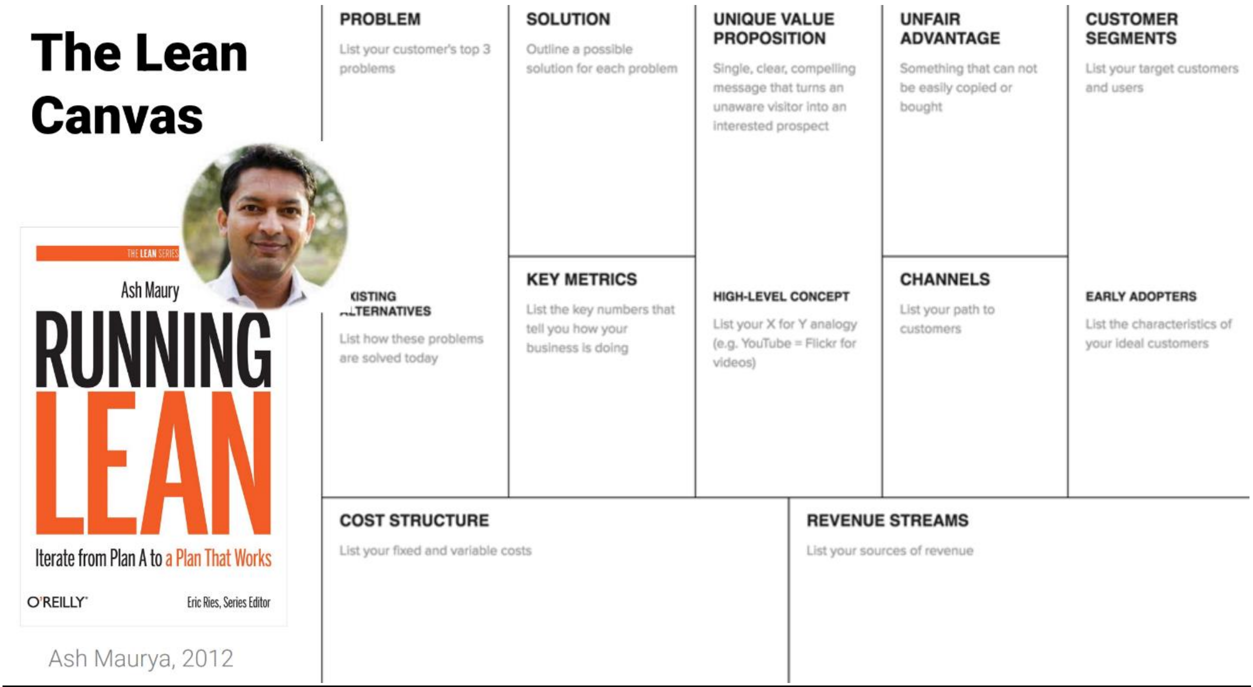
- Very intuitive
- Extremely Easy to Use
- Gets you into Canvases

*Cons of BMC:

- Focuses on Company Structure and somehow loses focus on startup issues such as problem/solution fit.
- Doesn’t cope with typical startup tricks such as good metrics and finding a crucial secret recipe.

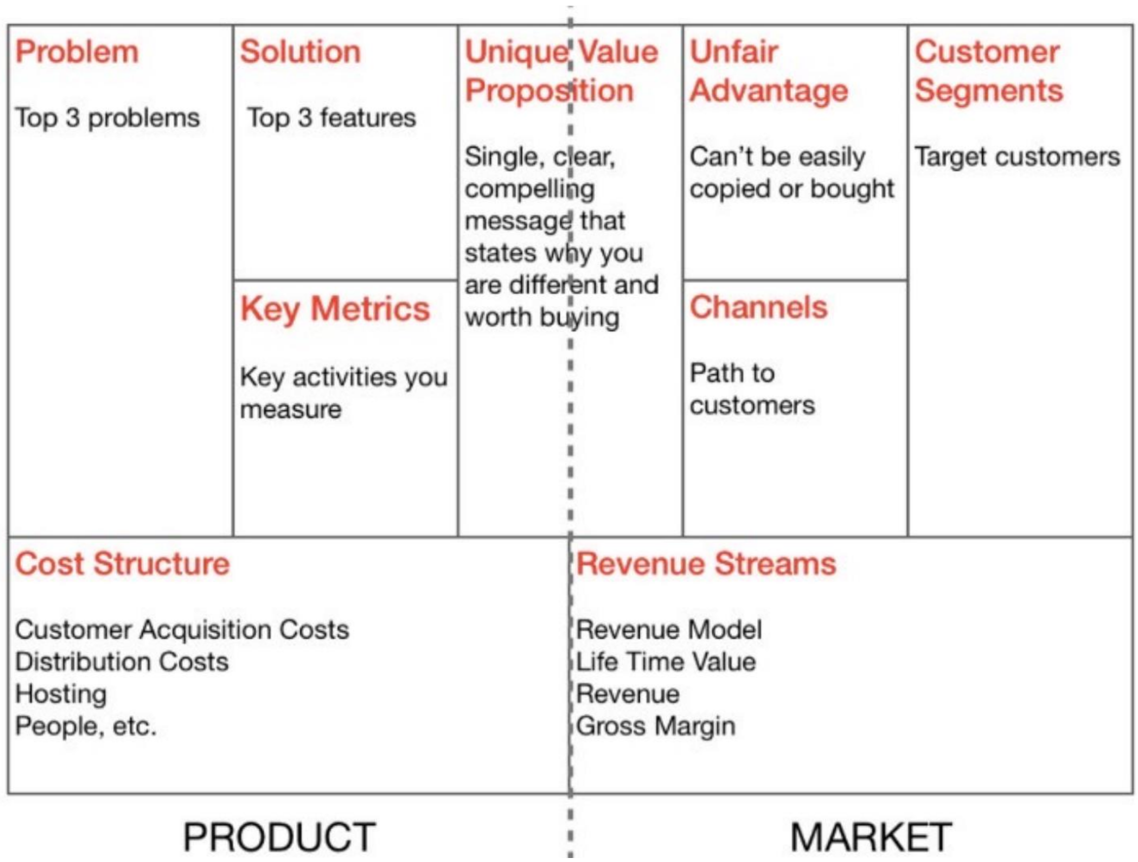
## Lesson 9 – Business Modeling - LC →

*The lean canvas:

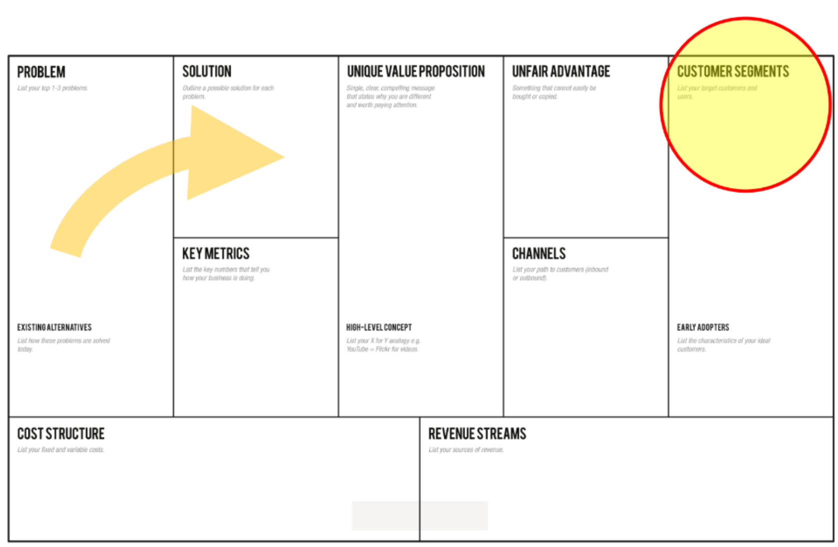



*Pros of Lean canvas:

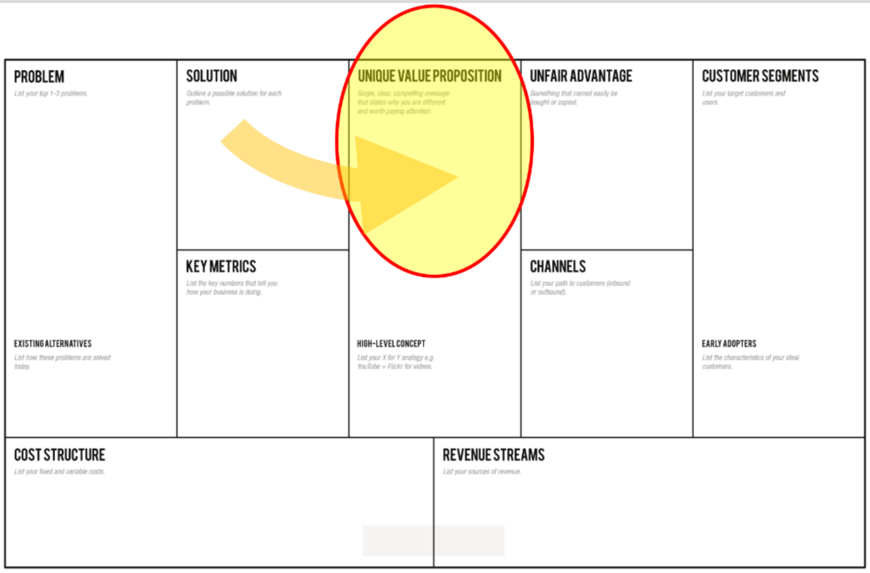
- Maintains BMC Approach and intuitively
- Extremely Easy to Use
- Loses some less crucial elements focusing on startup issues such as problem/solution fit.
- Copes with typical startup tricks such as good metrics and finding a crucial secret recipe.
- Helps you focus on iterating quickly in order to find your business model / solution avoiding wastes -> lean



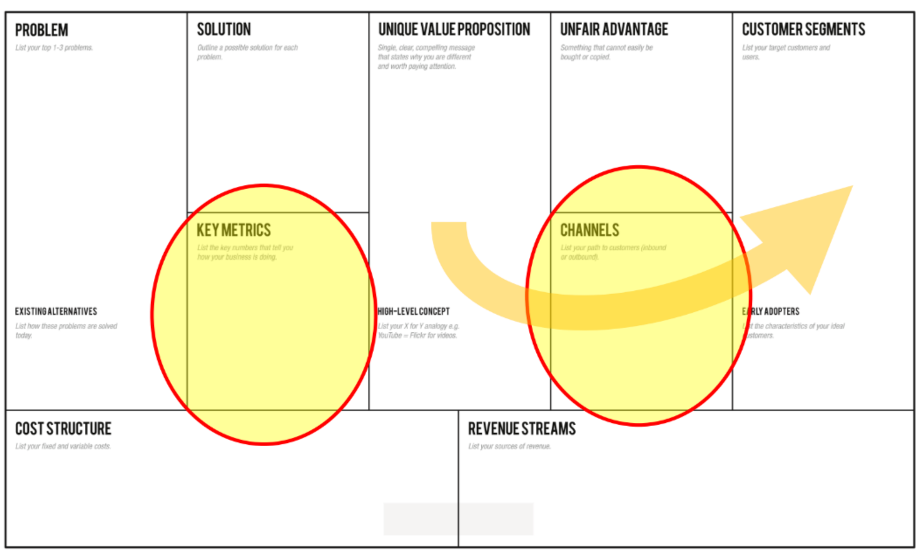

- <u>The Problem-Solution Fit:</u> To describe your Problem-Solution Fit you have to tell the User Story, his/her Job to Be Done / Pains / Gains – and how you resolve them. Careful and detailed description of Customer segments, not only in numbers, but in individuals with their lives, works, troubles and tasks, helps to visualize better the problem and the solution.



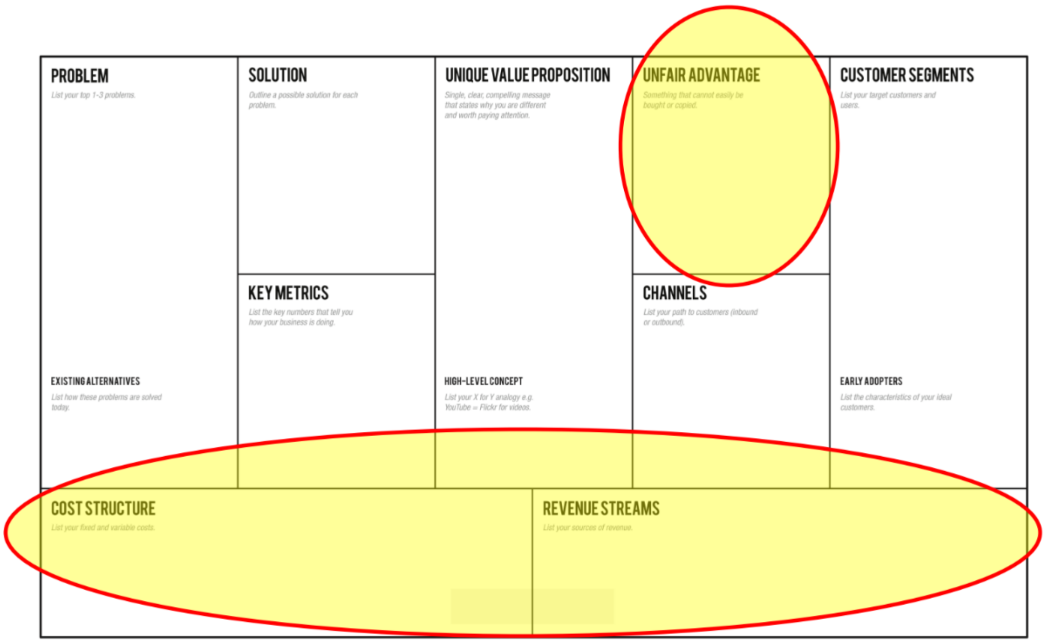
- <u>The Unique Value Proposition:</u> What makes your product/service unique and provides you with the best competitive advantage through various elements such as newness, performance, customization, "getting the job done", design, brand/status, price, cost reduction, risk reduction, accessibility, and convenience/usability



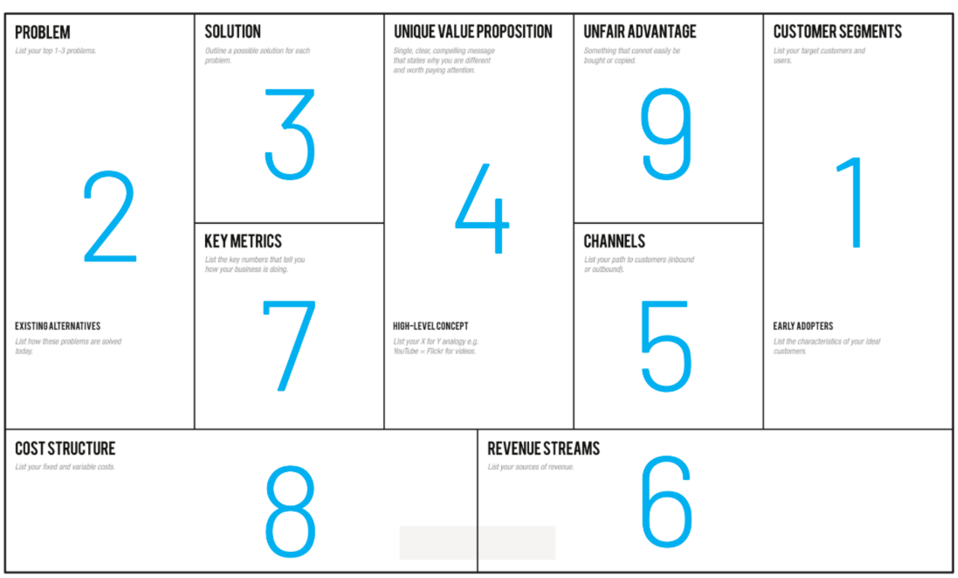

- <u>Bringing your Product to the Customers:</u> Once you have identified your UVP, now it's time to describe how you plan to bring your value proposition to Customers. Channels must be detailed in a very specific way and must clearly show that you have a reliable and validated plan. Key metrics is how you will understand you're in the right track.



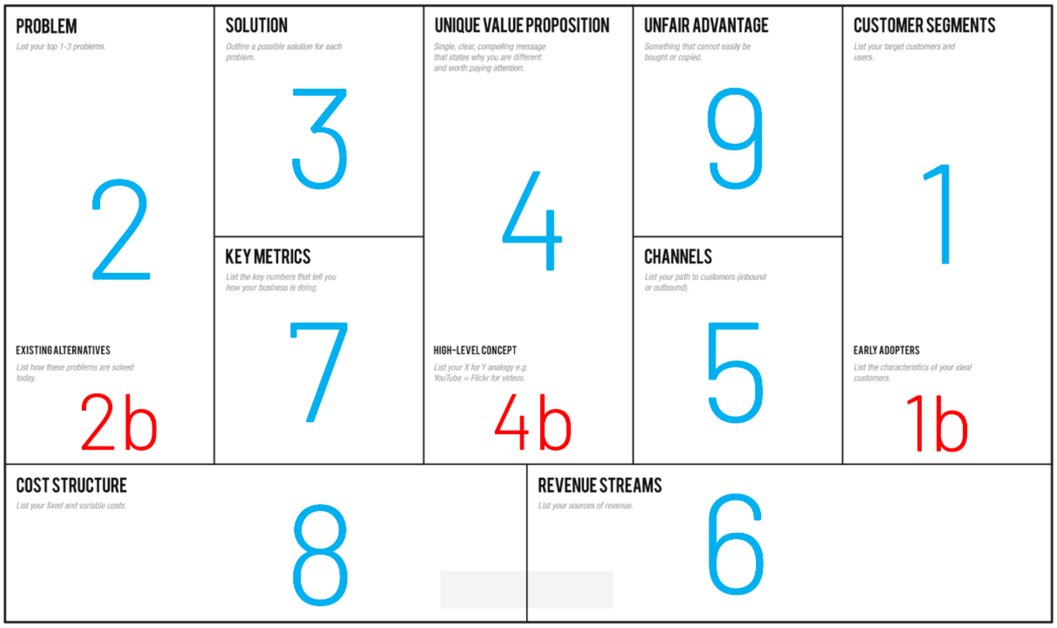
- <u>Economics and how to protect them!</u> After all, it all boils down to measuring the rate of success of your plan (and we already know that economics are one of the units of measure here) and especially how you plan to protect your business from copycats. Revenue streams must be pinned down with reference to channels and your business strategy – costs need to be carefully identified in order to have also your margin. Last, Unfair Advantage is what keeps you unique and unparalleled.



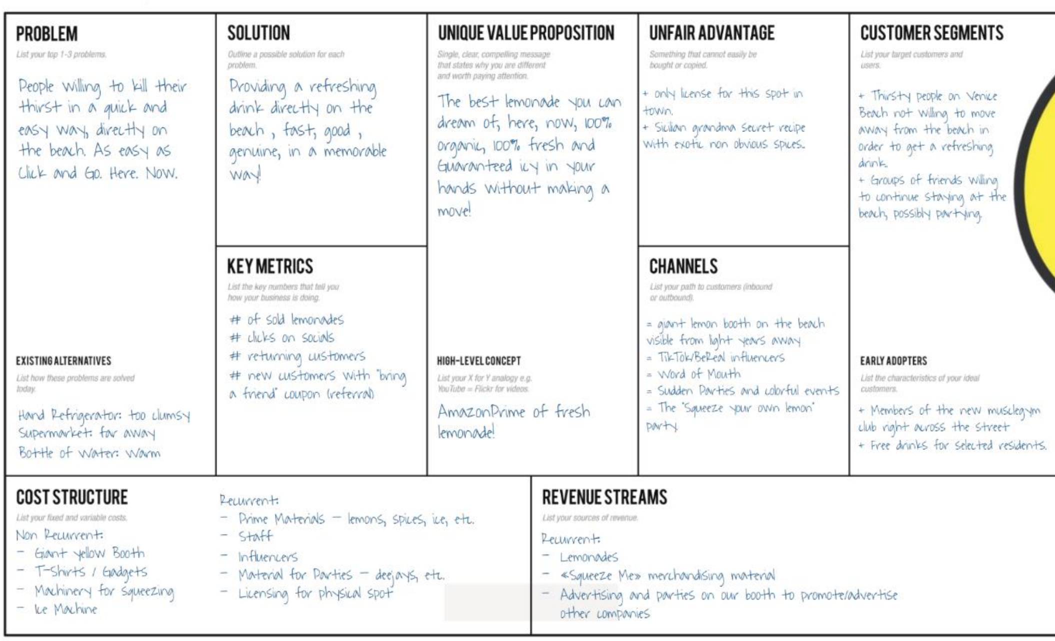

*Tells your story in a few sentences: "We focus on people like 1, having a typical problem 2, which we resolved in the way 3. We pack and provide our solution in 4, reaching our customers via 5 and generating revenues listed in 6. We keep our eyes on metrics 7 to understand we're on the right track. Our costs are 8, which brings to our 6-8 margin. Our secret recipe is 9."

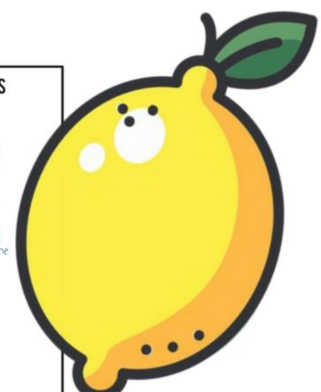


* tells your (slightly longer) story in a few sentences: “We focus on people like 1, having a typical problem 2, which we resolved in the way 3. There is actually 2b but to us it is a suboptimal solution because of … We pack and provide our solution in 4 (which, to let you understand, is a sort of 4b) reaching our customers via 5 and generating revenues listed in 6. We plan to introduce our proposition to 1b first, because our initial strategy is … We keep our eyes on metrics 7 to understand we’re on the right track. Our costs are 8, which brings to our 6-8 margin. Our secret recipe is 9.”



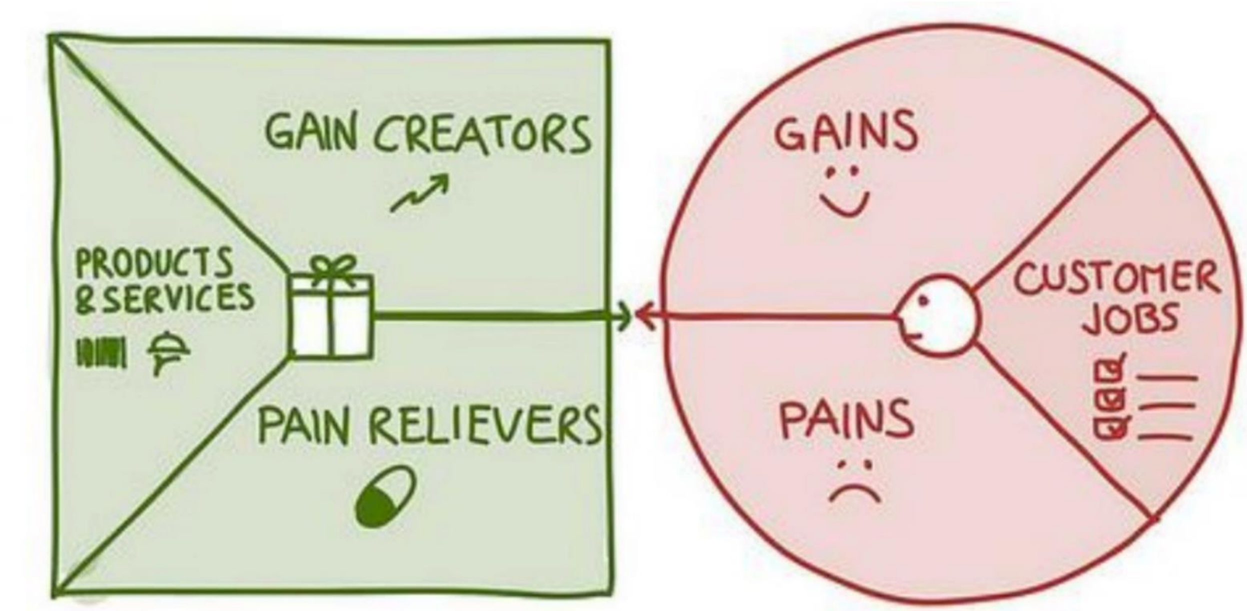

*Example: <u>Kelly’s Lemonade Booth</u>



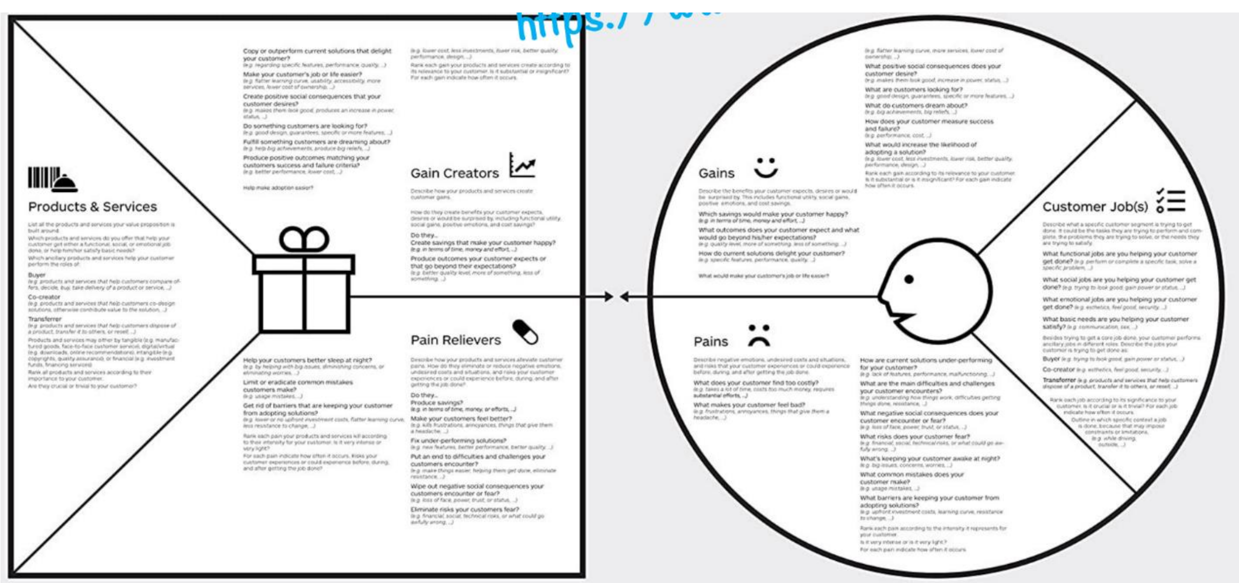



# Lesson 10 – Pipes and Platforms →

*The Value Proposition Canvas: Do I have a problem worth solving? (i.e. Value Proposition Canvas)




---

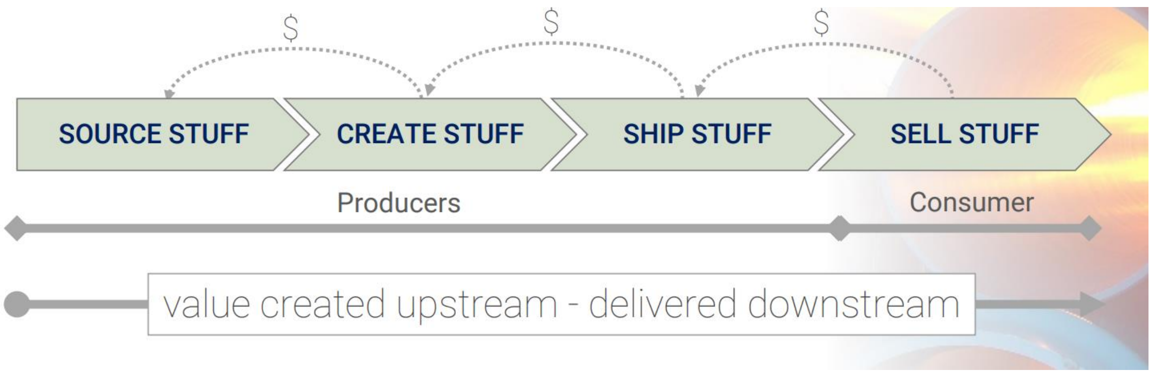



---

*How to sell stuff and make profit:

| | | |
|---|---|---|
| Manufacturer (Fiat) | Nickel & Dime (RyanAir) | SaaS |
| Distributor (Car Dealer) | Freemium (Dropbox) | IaaS |
| Retailer (Amazon) | Subscription (Netflix) | PaaS |
| Franchise (McDonalds) | Advertisement (Youtube) | "High Touch" (e.g. Hair Saloon) |
| eCommerce | Agencies (non core stuff) | "Low Touch" (Ikea) |
| Data Selling | Marketing | ... |

*Linear business models -> The pipe model




- foster traditional Linear value chain: (One of the characteristic of the linear business model) Linear business models follow a sequential value chain where each step adds value to the product or service. For example, a manufacturing company acquires raw materials, processes them in a factory, packages the final product, and distributes it to retailers.

*Understanding platforms:

- Why Instagram, AirBnB, Uber, … create non linear shareholder value in ways traditional companies do not?
- Are the Silicon Valley VCs wrong oris the traditional Enterprise Valuation methodology falling short?
- 2013 Best Global Brands

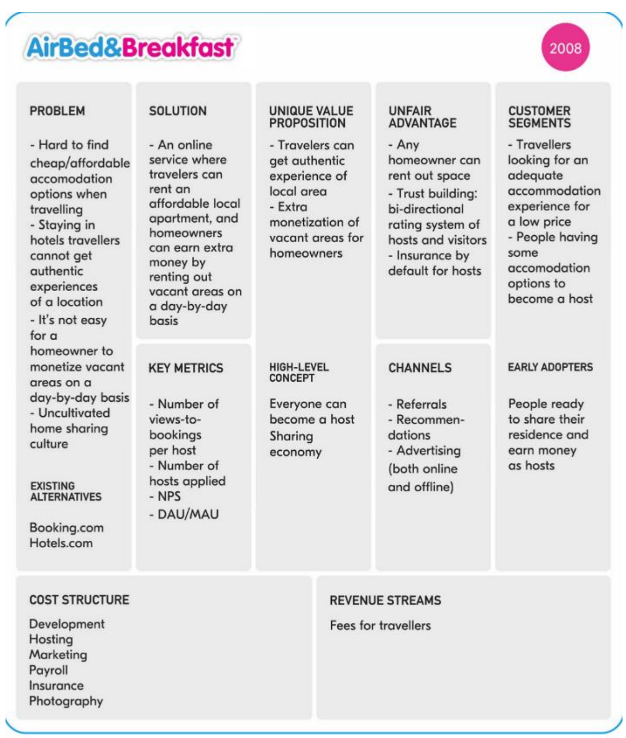

- These are Platforms!

*Some manifestations of the Platform business model:

1. **Social Networks/Media**: FB, Instagram, Snapchat, LinkedIn, Twitter, Quora
2. **Cryptocurrencies/Payment systems** PayPal, BitCoin, Apple, Visa, AMEX
3. **APIs** and **developer ecosystems**
4. **Internet of things/Wearables**
5. **Sharing economies**, based on spare, unused-available resources
   - **Apartment/ Renting** and **Couching**: AirBnB, Lyft, Sail, Openplane
   - **Ridesharing** and **carsharing**: Blablacar, Car2Go
   - **Peer economy**: lending, selling: eBay
   - **Crowdfunding** kickstarter
   - **Gig economy**, short term contracts: Uber, Food delivery services…
6. **Web Search**: Google, Baidu
7. **Operating Systems**: Mac, Windows, IoS, Android
8. **Game Consoles**
9. **Enterprise systems**: SAP, IBM, AWS
10. **App economy** Memrise,

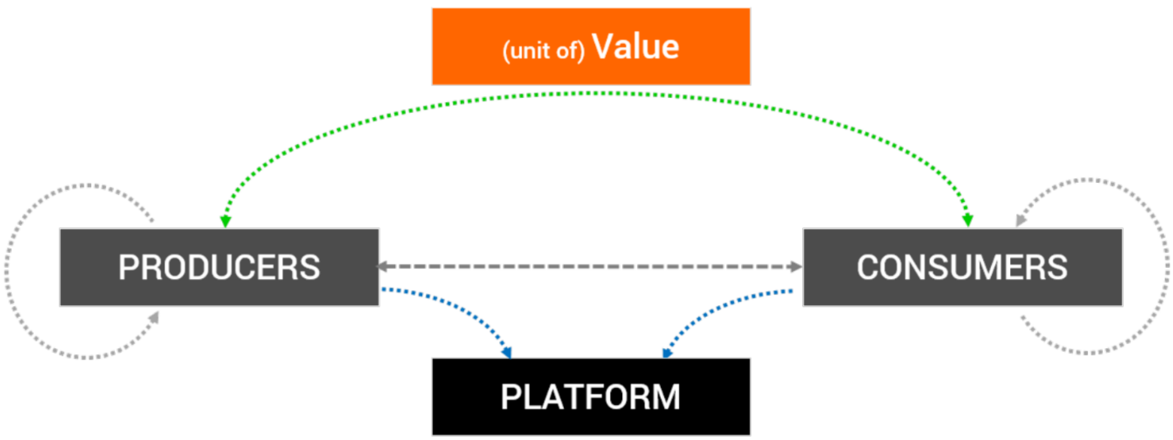
*Platform: A plug-and-play business model that allows multiple participants (producers & consumers) to connect to it, interact with each other and create and exchange value (Sangeet P. Choudary "Platform Scale", 2016)

*Lean canvas example: A Platform has a multi-sided Lean Canvas.



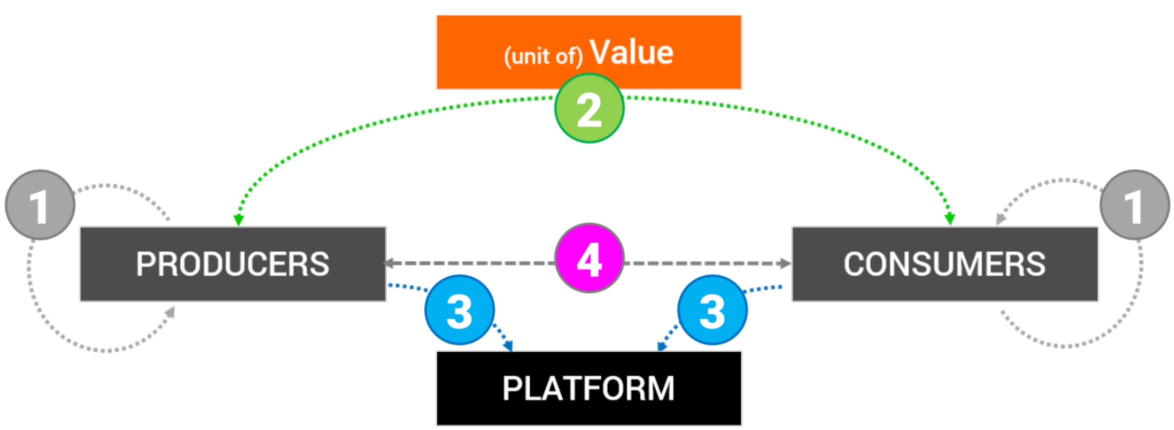
*The Platform as Interaction Catalyst:

- Platforms with two (or more) user groups provide each other with beneficial Network Effects.
- the stronger the more the platform increases/efficient the Interactions.
- Allows multiple parties ("market sides") to transact across the platform
- Value of the platform may increase non-linearly with more users – depends on strength of network effects.



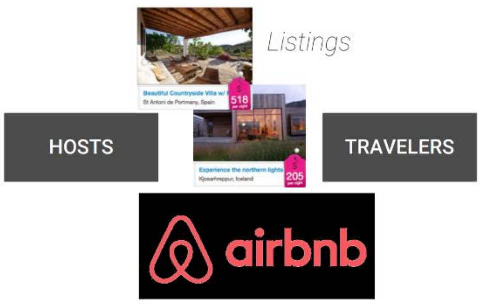

*Two side market Interactions: a two sided network has four network effects.

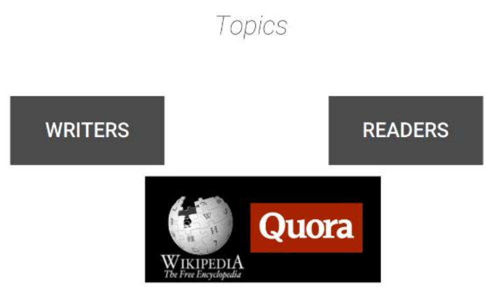
1. Same side effect: number of users on own side
   - ✓ + more players -> more interactions
   - ✓ - more sellers -> more competition
2. Cross side Network Effects
   - ✓ + more options to Consumers
   - ✓ - more adv
3. Tools to maximize interactions among sides, through the Platform
4. Traditional Pipe



*Platform examples:

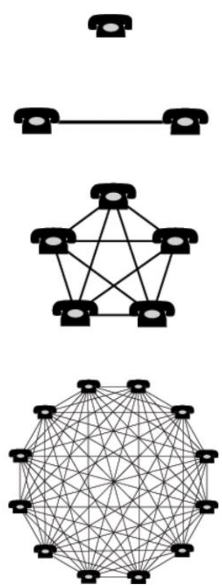





*<u>The Network Effect:</u>

- <u>Externality:</u> The cost or benefit that affects a party who did not choose to incur that cost or benefit
- <u>Network Effect:</u> a.k.a. network externality or demand-side economies of scale.
  "A phenomenon whereby a good or service value rises as more people use the platform"



*Metcalfe's Law
$V=n^2-n$

*Platforms develop positive network effects to each of the interactions sides. each side Attracts More of the other

*The goal of a platforms is to enable interactions between Producers and Consumers.

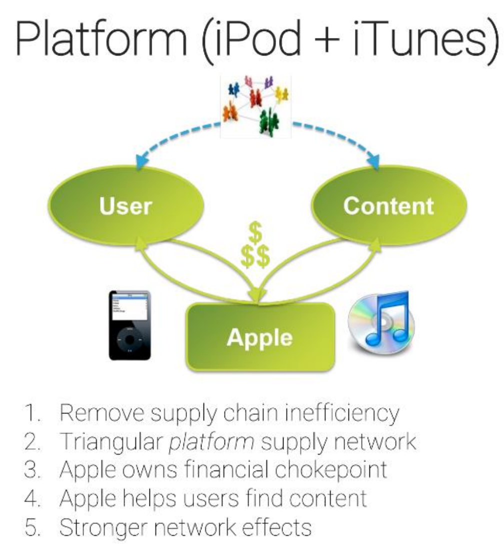
*Products have F\eatures; Platforms have Communities:

- Platform: an open architecture together with a governance model
- Platform must provide a useful function or service and should provide 3rd party access
- Platform Purpose: to consummate the match – more & better! Sub goals are seed creation & consumption

*Why product to platform now?

- Any enterprise that grows in value by adding information / community can be transformed
- The greater the proportion of value, the sooner it will transform
- Platforms draw value from Communities & Network Effects
- In any market with network effects, the focus of attention must shift from inside to outside the firm.  Reason: You can't scale network effects inside as easily as outside.

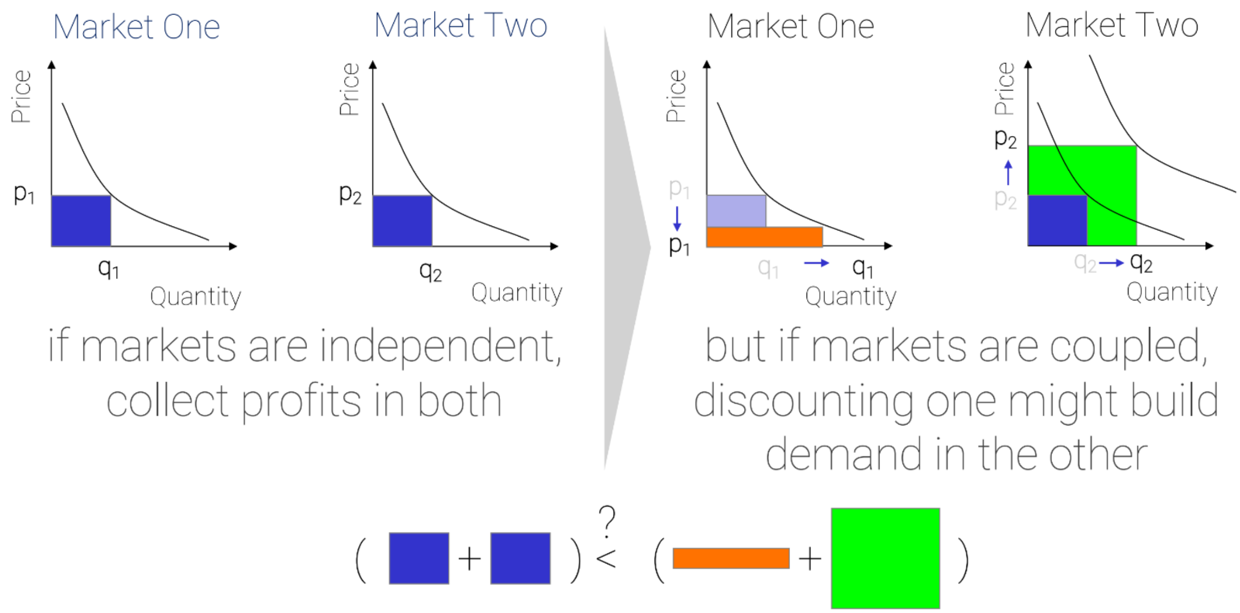
*Platform example: Apple iPad


*What changes: Marketing & Prices -> monetizing Platforms Free Pricing is Profitable.

*Even Nobel prize -> for work on antitrust regulation, market power & two-sided platforms

*When Free Pricing is Profitable:

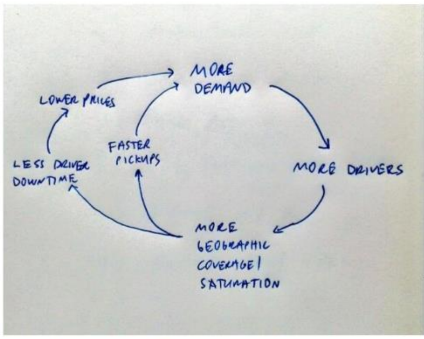



*what changes: Finance -> Corporate valuation models that underestimate market expansion due to network effects fail to invest

Example: Uber worth


But that’s not ok! We should consider the network effects too!

- All true but overlooking network effects.
- Prices decline expanding to rental car market *and* car replacement market *and* delivery market.
- Oh, BTW, already 3x size in 2009 when Uber started.




*Source: David Sacks, COO PayPal, CEO Yammer*

value: **$17 Bi**
july 11, 2014

**Bill Gurley**
Venture Capitalist, OpenTable, Zillow, Uber A-Series and BoD member

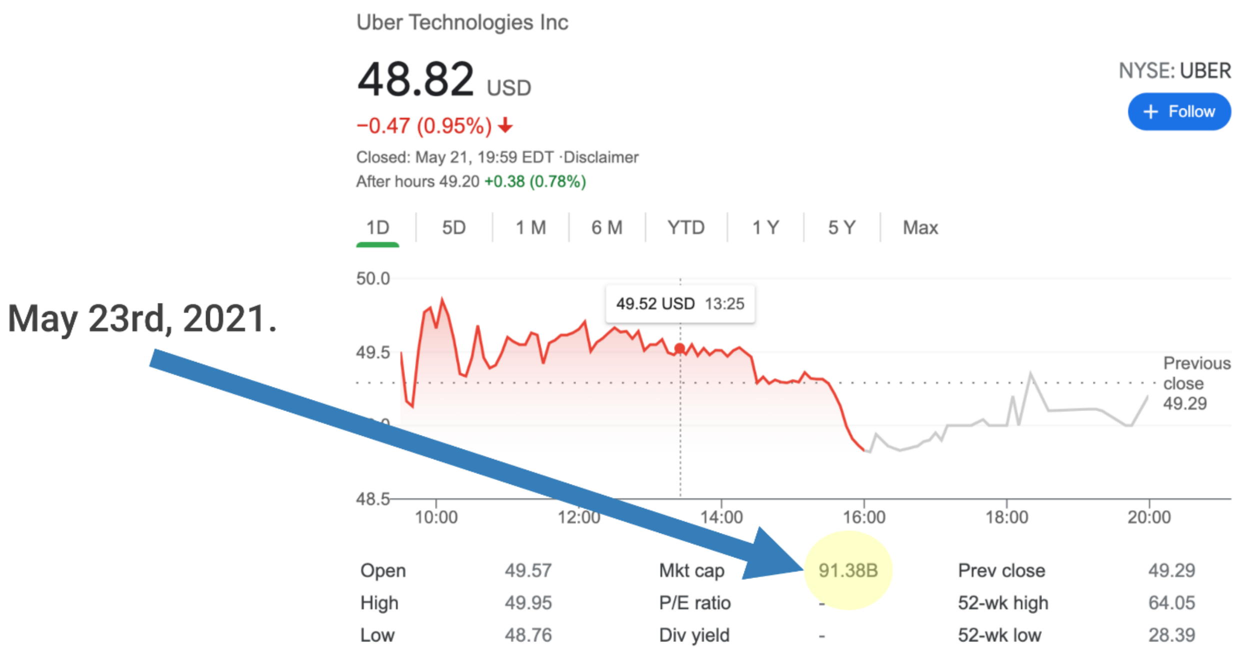
Now with changes due to overlooking network effects:

**Aswath Damodaran**
NYU Finance professor, Corporate Valuation author, Herb Simon Prize.

value: **$23 Bi**
july 16, 2014

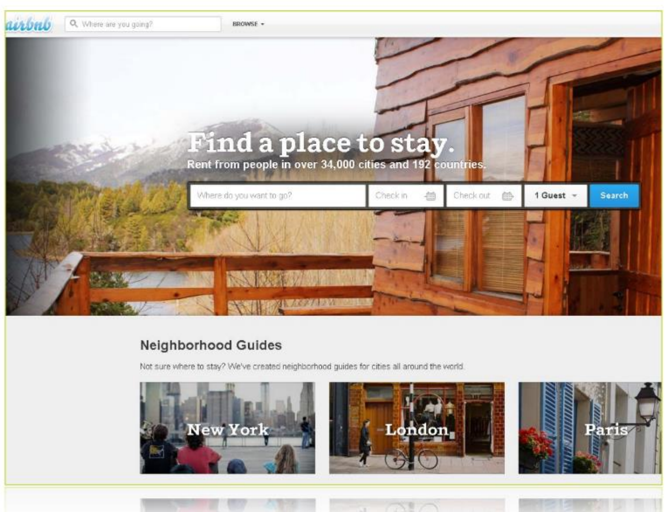
- Professor conceeds!
- Based on Narrative from Gurly and data provided, revises Value
- material enters in Class material for postgraduate programs
- open source project kick-off

Uber net worth based on google:

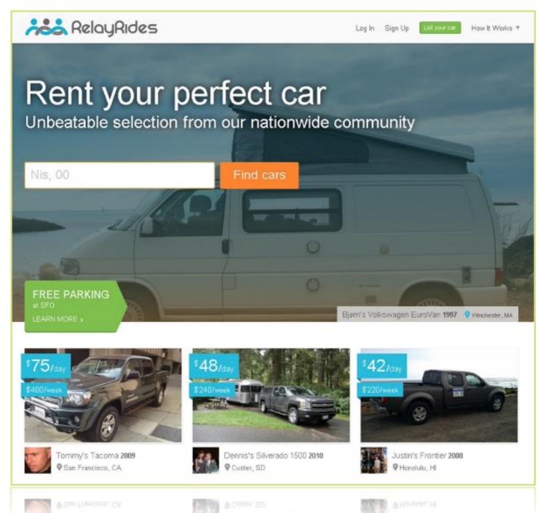



*what changes: <u>Supply Chains</u> -> <u>Platforms</u> unlock new Value from Spare Resources and User Generated Content.

Example: These companies owns nothing but in the competition with companies that owns things in the market.




AirBnb sells users' spare rooms, competing with hotels that must own them




RelayRides sells users' spare cars, competing with rental firms that must own them

*The number of <u>users</u> who are using our platform is important! Example: Instagram sold for $1B not because of contributions from 13 employees but from 30 million users

*Now is the era that everyone are working with their phones. The importance of the platform

> In 2015,
>
> the world's largest
> **taxi company owns no vehicles** (Uber)
>
> the most popular
> **media owner creates no content** (Facebook)
>
> the most valuable
> **retailer has no inventory** (Alibaba)
>
> the world's largest
> **hotelier owns no real estate** (Airbnb)

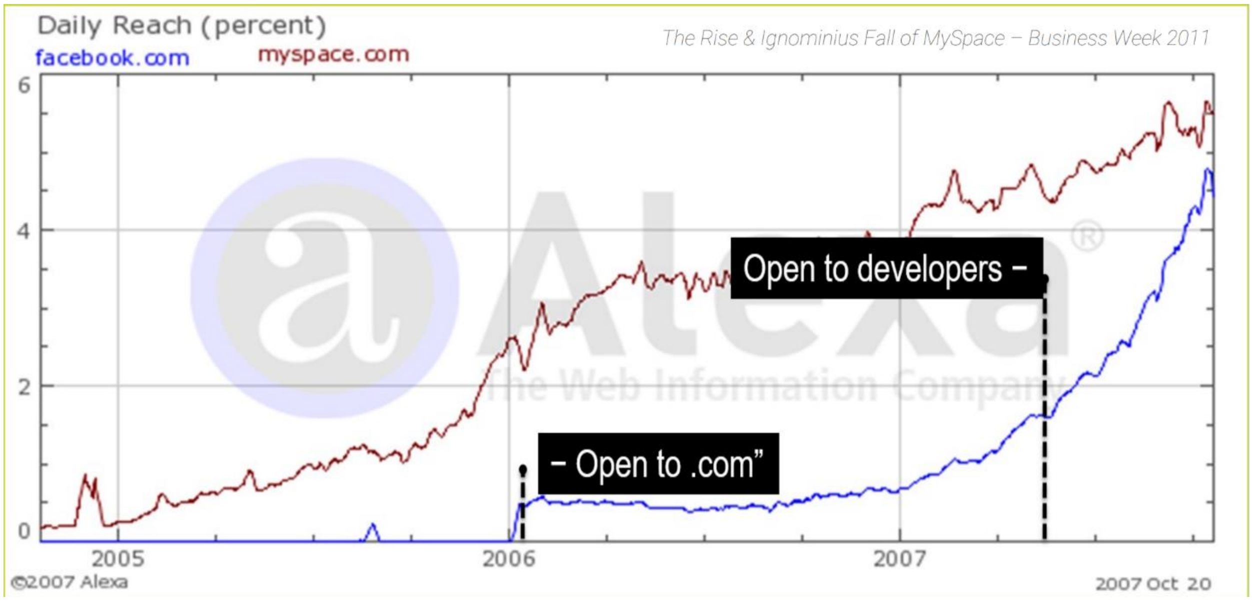
*Respected to the point above: what changes: Internal Organization -> employees must see the world across the platform, which must support a Shared Data Layer

*Bezos Platform mandate:

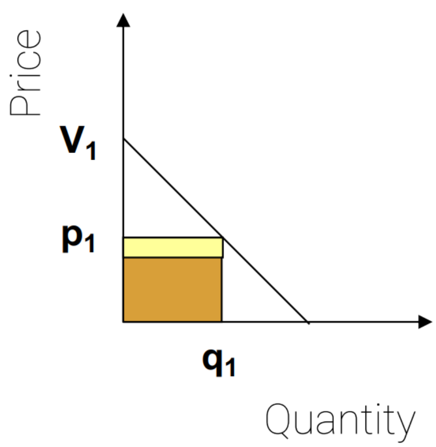
- All teams will expose their data.
- Teams must communicate through interfaces.
- No other form of inter-process communication allowed.
- Interfaces, without exception, must be externalizable.
- Anyone who doesn't do this will be fired.

*What changes: Innovation -> platforms Open themselves to Third Party Contributions

*Does Openness work?

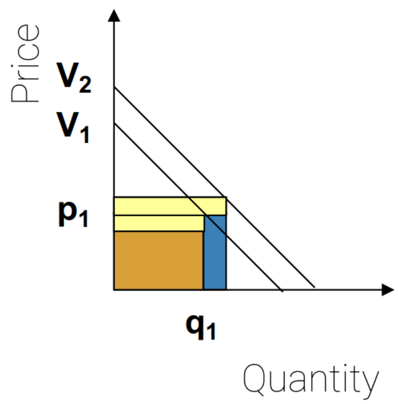



*Why does Openness work?




Platform sponsor gives away (yellow) platform value

Downstream enhancements add value

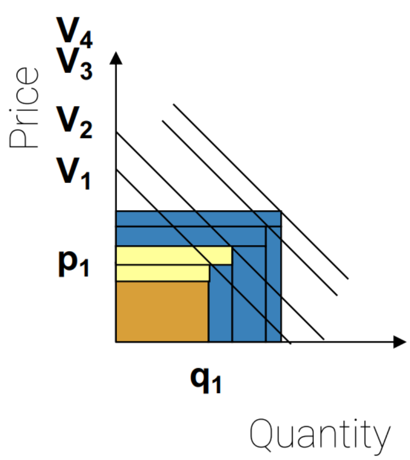



Platform sponsor gives away (yellow) platform value

Developers build apps for installed base, adding new layers of value.

Benefits:
Sponsor from increased sales, and downstream royalties.
Developer from cost savings and installed base.

## Downstream enhancements add value




Platform sponsor gives away (yellow) platform value

Developers build apps for installed base, adding new layers of value.

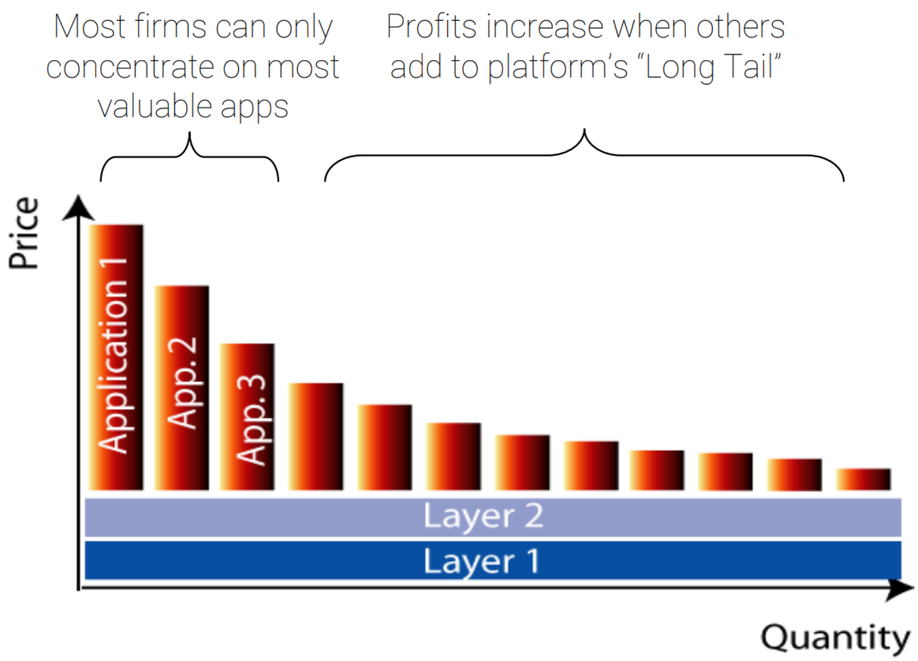
Benefits:
Sponsor from increased sales, and downstream royalties.
Developer from cost savings and installed base.

Repeat

## Downstream enhancements add value

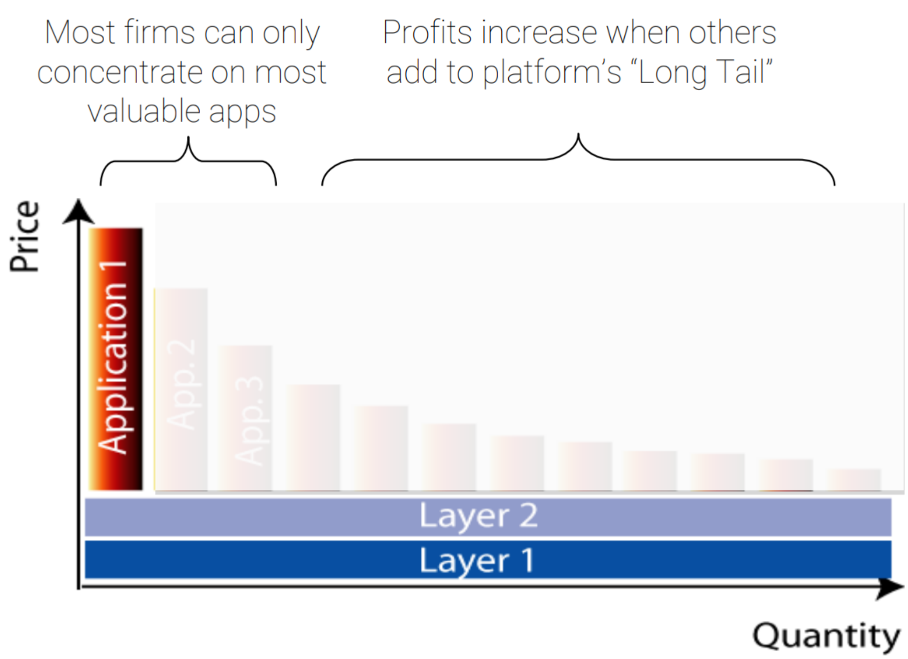
*Platforms get enormous value from <u>3rd party developers </u>(Remember the example of Apple store, Microsoft shop) -> paid to developers to develop any applications.

-> We don't need to own the tail! Just concentrate on valuable one! (see the rest)



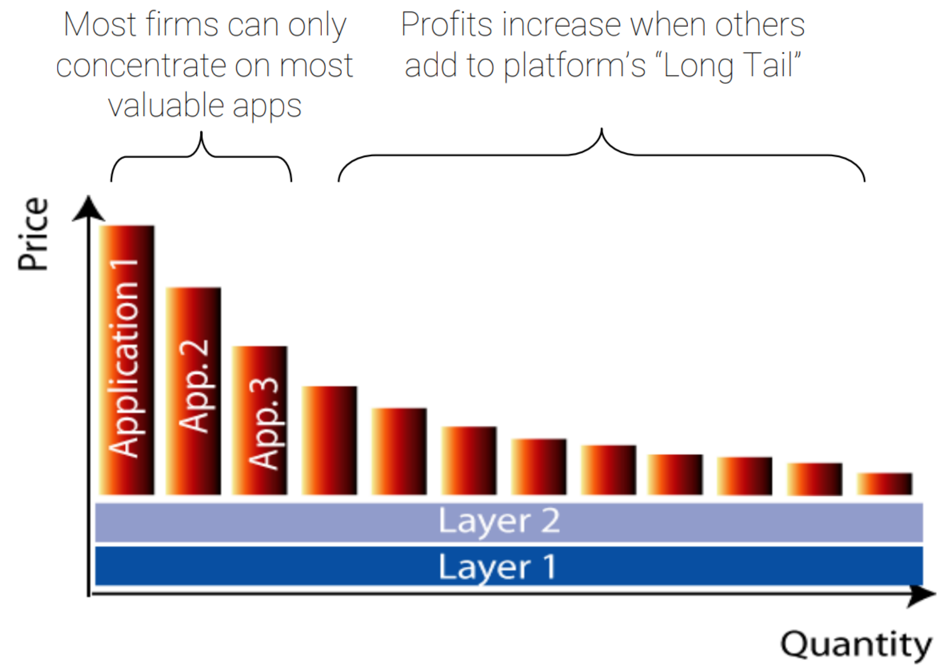

Consider an operating system like MS Windows, Apple Mac, or Google Android

_Should Apple have opened the iPod?



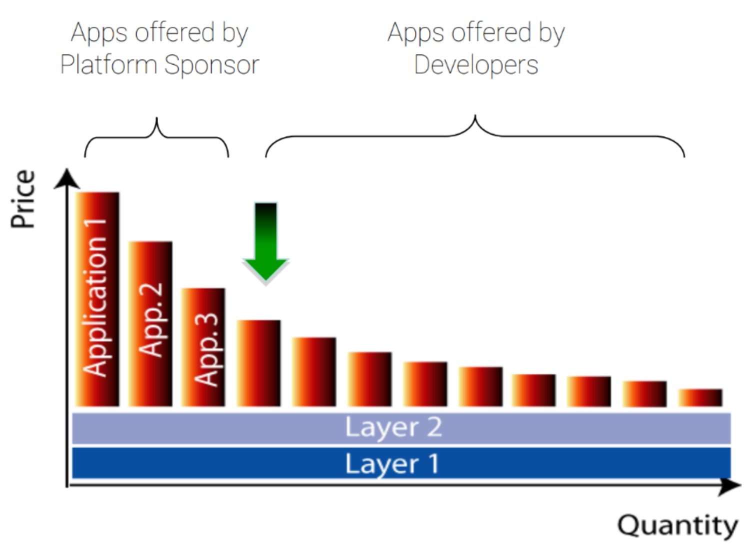

No! It does 1 thing only, so make it "insanely great" and own it.

_Should Apple have opened the iPhone?




Of Course! It has video, wifi, camera (scanner), accelerometer, mobile, MP3, web browsing, etc. Platforms benefit from broad contributions.
But control the top several complements.

*Which applications to absorb?



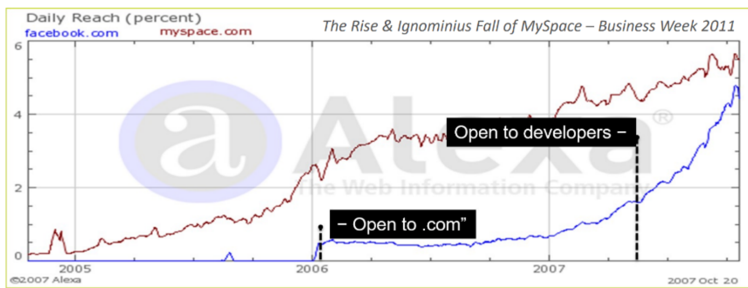
- Rule 1: Absorb the highest value applications from the ecosystem. This adds value for users and mitigates threat of disintermediation.
  Example: Apple iPad absorbed e-books
  Example: Microsoft Windows absorbed web browsing

_Works of openness:

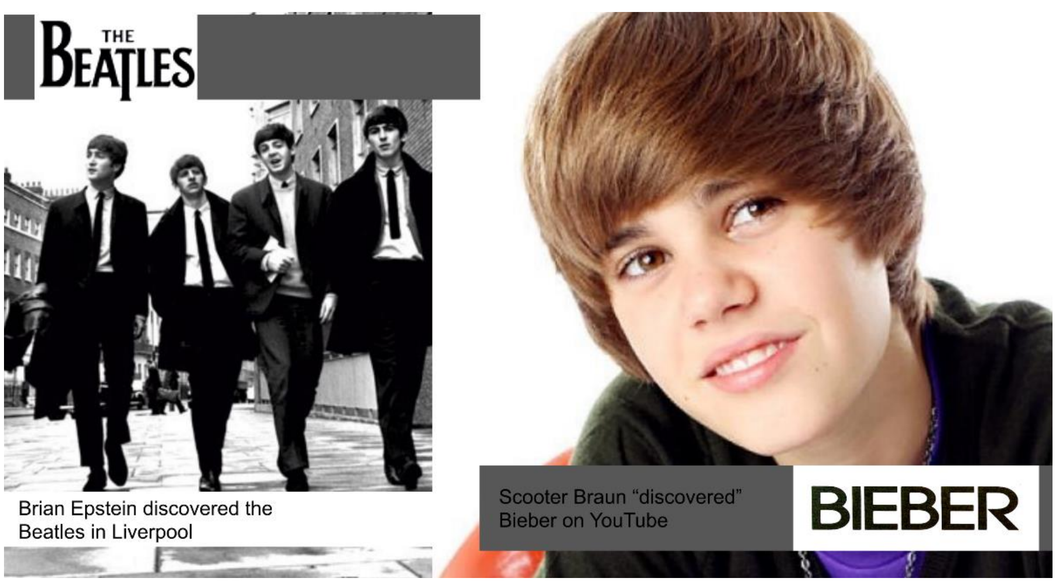
> ‘We tried to create every feature in the world and said, ‘O.K., we can do it, why should we let a third party do it?’
>
> We should have picked 5 to 10 key features that we totally focused on and let other people innovate on everything else.

**Chris DeWolfe.**
MySpace cofounder

2015, Parker, Van Alstyne & Choudary



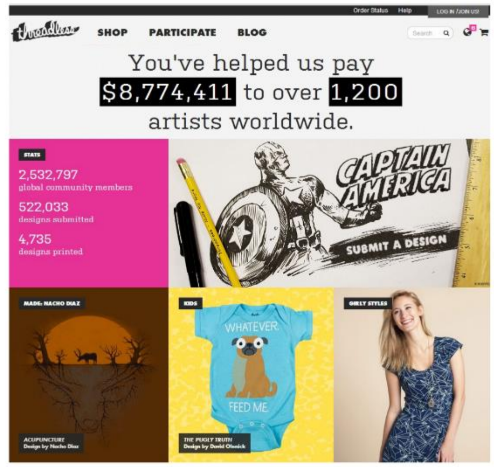

*What changes: <u>Industry Bottlenecks</u> -> platforms will displace <u>Gatekeepers</u> (Experts or Bureaucrats) with <u>meritocratic Crowds.</u> Example of the Gatekeepers:



*Change for the <u>What</u> to the <u>How</u>!

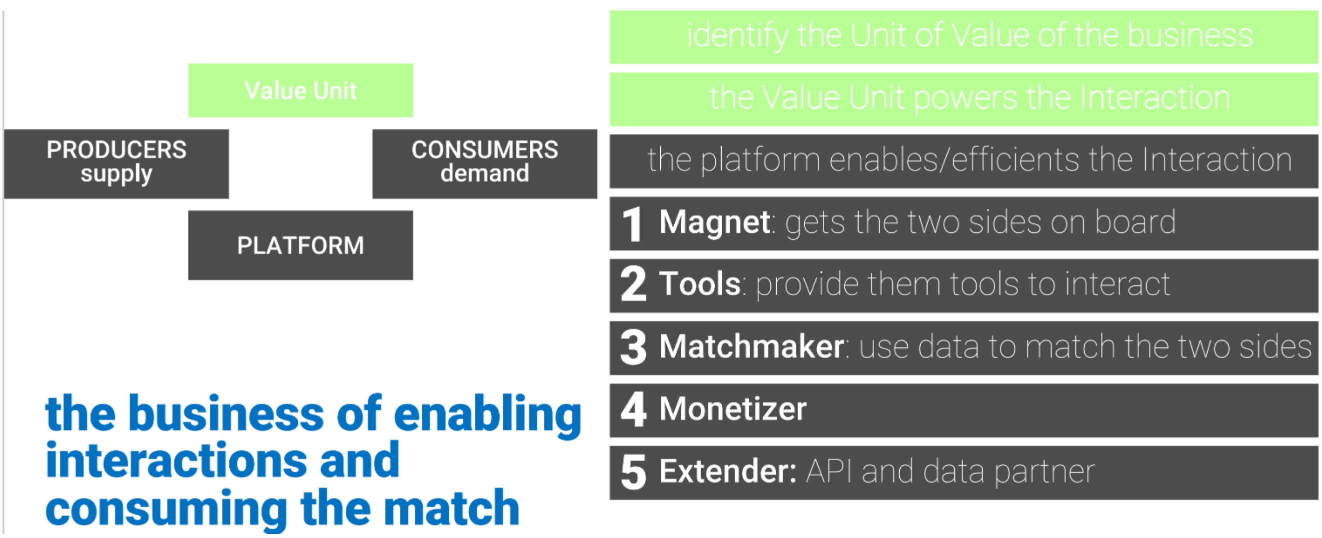
-> Disintermediate, Matching, Curation, Trust


Advice from travelers replaces that of travel agents

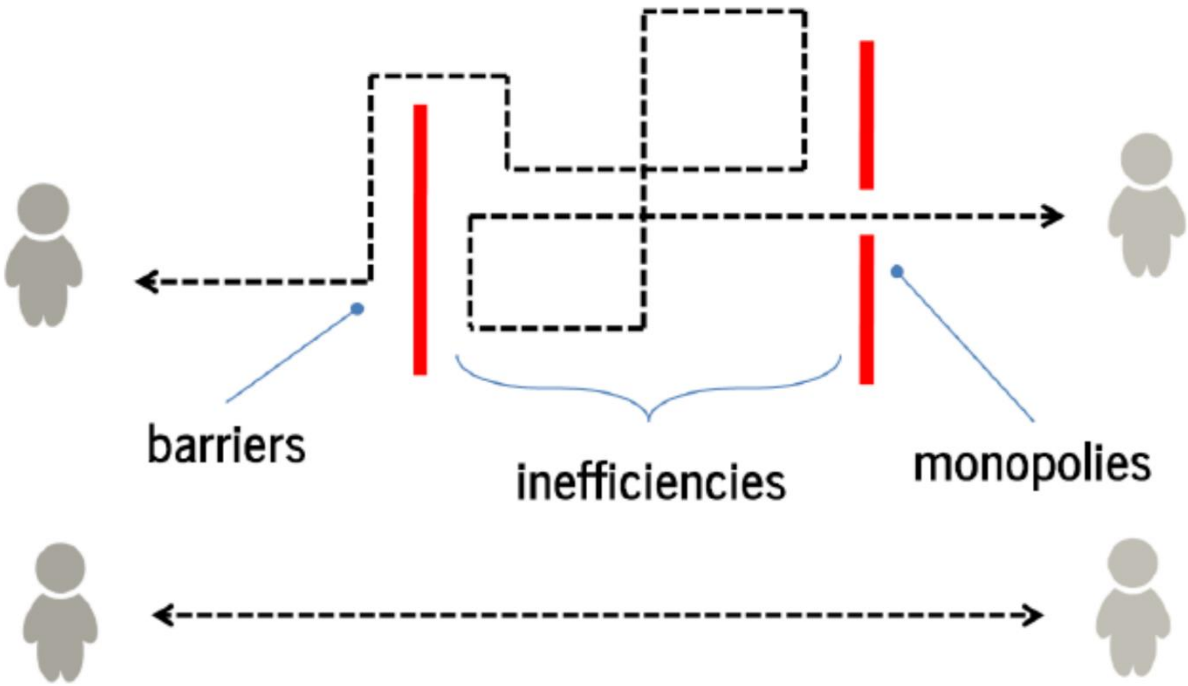



Forget designers, product buyers, marketers. Threadless uses crowd to guarantee

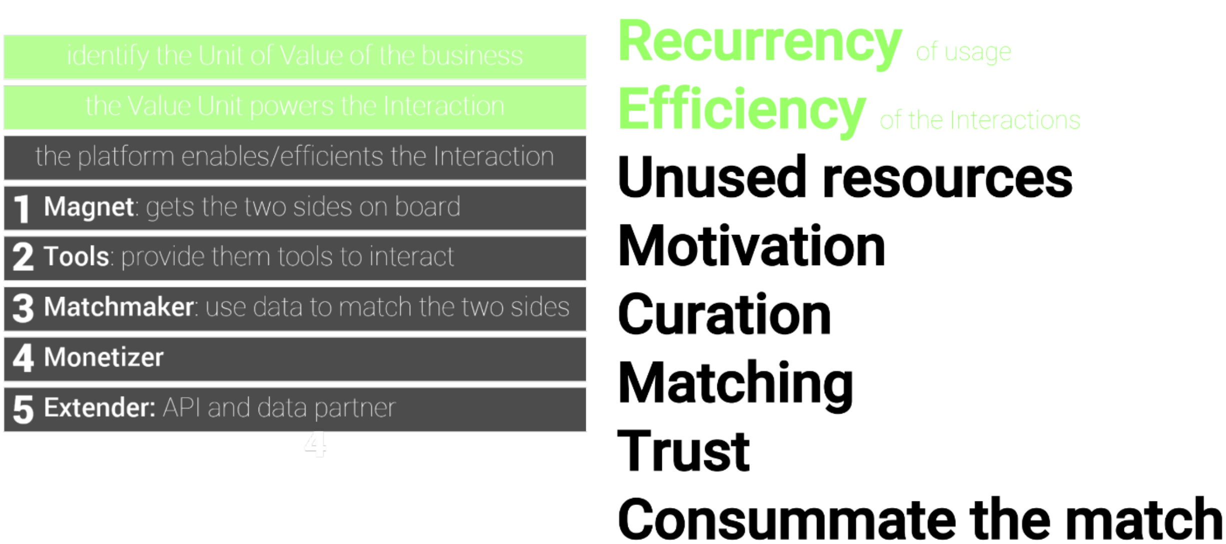
*How do we design a Platform business: <u>The toolbox</u>



*Disintermediation – p2p:




*Opportunity for Metrics:




*How platforms win:

1. Own the ecosystem
2. Monitor ecosystem activity and own the most important resources/features/apps that emerge
3. Leverage the value of data
4. The new M&A: buy someone who's already built on your platform
5. Monitor adjacent and indirect competition
6. Superior technological design: data to power relevance, curations, matchmaking, …

## Lesson 11 – Platforms continue →

The same as previous slide

## Lesson 12 – Equity →

*Ownership / Equity:

- Corporations are owned by shareholders who invest money in the business by buying shares of stock. The concept of ownership refers to legal control over a business. It gives the owner the legal right to make certain business decisions.
- The portion of the corporation they own depends on the percentage of stock they hold. -> For example, if a corporation has issued 100 shares of stock, and you own 30 shares, you own 30 percent of the company
- Equity: "the value of the shares issued by a company." "one's degree of ownership in any asset after all debts associated with that asset are paid off."

*Who gets shares?

- Initial Founders
- Key Advisors
- Investors
- Key Employees

Most important: there is not a fixed rule, every startup team will need to figure out how to structure equity and related rules since equity is one of the main "value" drivers in this stage.

*Initial Team (Initial Founders):

Easily 60% of the time a startup founders end up in court boils down to equity distribution issues.

Common Criteria:

- Even Split – no hassles
- "Future" split: forecast on the time / effort that one is going to provide to the company in the foreseeable future
- "Blackjack" Split: time / effort / impact that one is going to provide to the company right now without any implication for the future.
- Shares equal to that person's risk early contribution (relationships, extra time, supplies, equipment, facilities, time, money, ideas…).
- (…and remember, founders are the few crucial key people in your startup, not only friends and valuable people who would like to take a ride…)

_Examples of a founder "Early Contribution":

- Having a solid grasp on the market / need / problem.

- Having the "idea" of the solution – existing patent?
- Who defines the most successful product/service features?
- Contributing most of the "initial development"
- Managing the initial development or the development team
- Participating? Full time? Part time?
- Fundraising capabilities, networking, etc.
- Being a pivotal figure in company initial launch and traction
- Being a pivotal figure in creating company initial revenues
- Has in his/her PC, updates & manages the "day-by-day" budget and p&l excel file
- Pays for basic initial expenses (ie business cards)
- Faces the most difficult pitches and talks to investors
- Has a grasp with your market, customers, influencers, early evangelists

*Advisors:

- Given the young and often unexperienced trait of most startup founders, Advisors are an amazing and extremely valuable source of support for startups.
- Some of them may dedicate a share of their time in exchange of a small portion of the equity.
- Key benefits: Crucial Know-how, Door Opening, …

*Investors:

- Especially at the stage of founding, there is not a general rule on the % of the company to be given to the initial investors, nor to their nature (FFF, seed investors, etc.).
- At the same way, at the stage of founding it is where the process of valuing your startup may be more difficult
- A good advice: as always, get out of the building! Which, in this context, boils down to: talk to your peers!

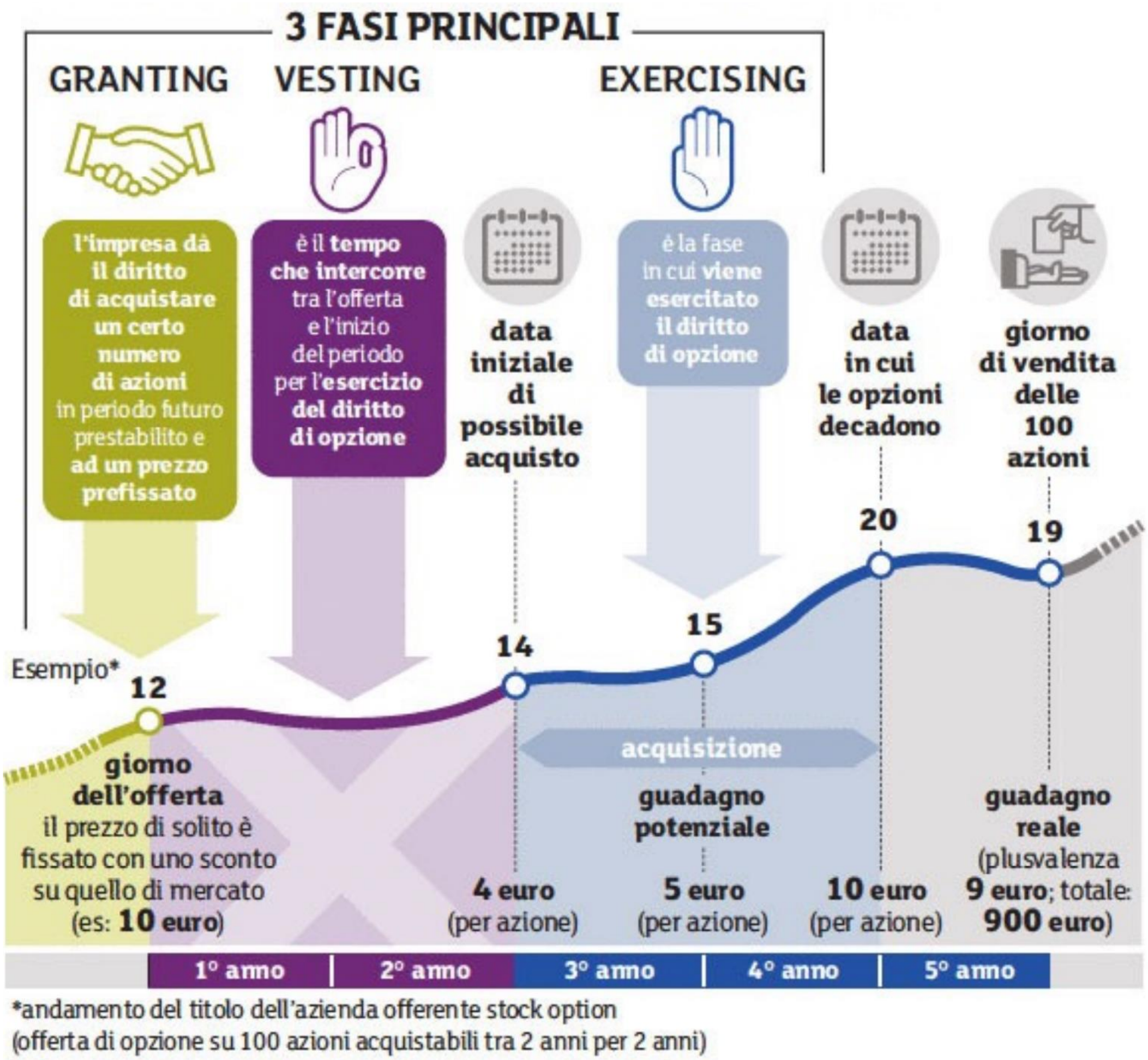
*Key Employees:

- (not to be confused with co-founders, btw)
- Initial startup money is often not enough to find the high value key employees needed in early stages.
- This is where the company shares may offer a valuable tool.
- Most important, as a side effect, these employees may and will not feel as employees-only and they will put a lot of extra effort to make your venture successful, since it's, in part, their venture too!

*Stock options:

- Stock options are a tool that can compensate the difference between a talented figure market value and your compensation rate.
- Most important, they are also a tool to boost that figure involvement and effort.
- Vesting: additional mechanism which provides a long term motivator (and risk mitigator) in stock option management and will also provide to outside potential investors a clear picture of the company ownership/involvement strategy.

*Process of vesting:




*How does Vesting work within your company? There are two crucial documents.

- Bylaws / Articles of Association (Statute) (mandatory):
  - Public (everybody can read it)
  - It applied to every shareholder, present and future
  - It states rules which are "by shareholder" and not nominal.
  - It needs to be written/signed by a notary
- Shareholders' Agreement (Patti Prosocial) (optional)
  - Private and nominal.
  - Valid only between specific, well identified people, who sign the agreement personally.
  - Privately written and signed. No need for a notary

_When in conflict, Bylaws have the prevalence.

*Typical Clauses: These are some very important clauses in shareholders' agreements (there are many…).

- **Put Option:** shareholder MUST be able to sell his/her stocks under condition X – or sell his/stock to specific shareholders.
- **Call Option:** shareholder MUST sell its stocks under condition X.
- **Drag Along:** specific shareholder can trigger the call option of other shareholder when selling his/her participation.
- **Tag Along:** specific shareholder can trigger his/her put option when other shareholders are selling their participation. These are some very important clauses in shareholders' agreements (there are many…).
- **Lockup:** time a specific shareholder must stay within the company (or specific rules trigger).
- **Good Leaver**: what happens to a shareholder that MUST leave the company involuntarily.
- **Bad Leaver:** what happens to a shareholder that chooses to leave the company voluntarily.
- **Liquidation Preference:** applies to liquidation events (some shareholders have a better selling position having their investment liquidated before the actual division of company value).

_Example of good leaver: when the shareholder is sick like having cancer and he/she is going to die or due to the family issues.

*Terms:

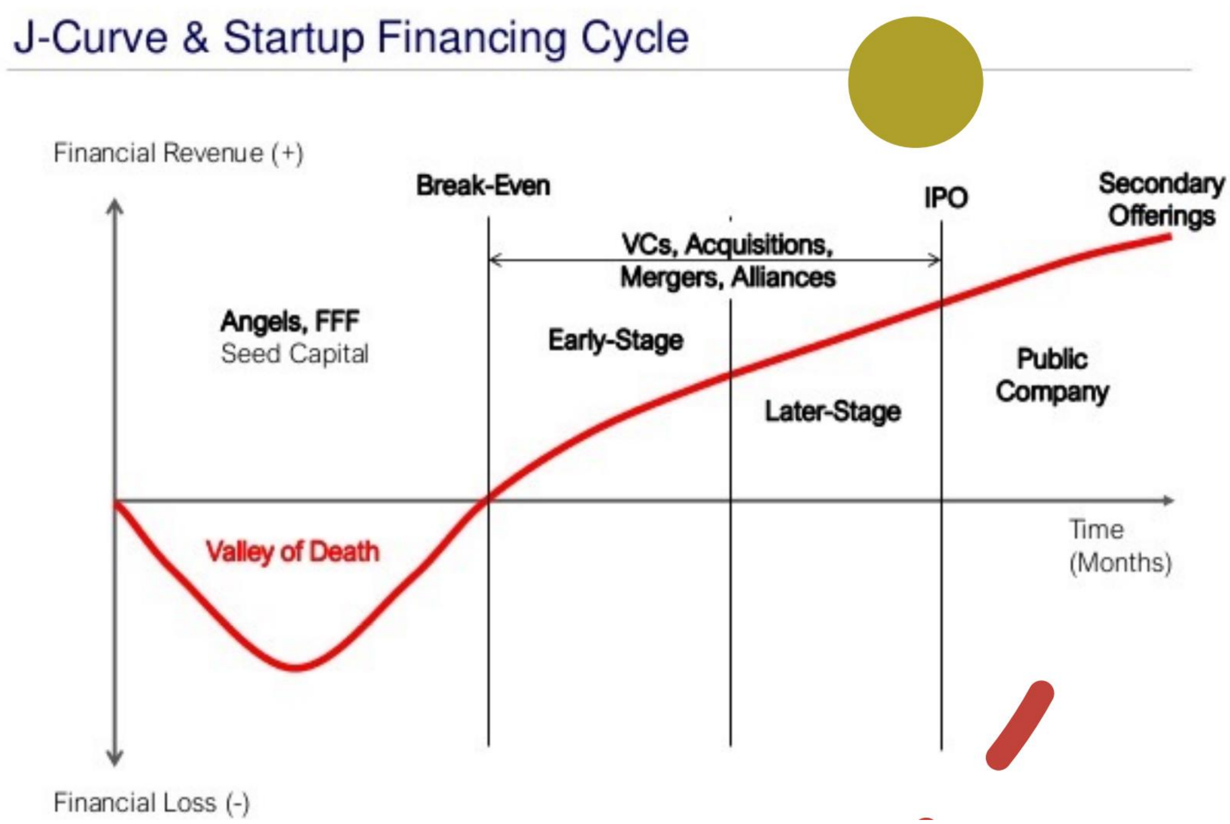
- **Equity:** "the value of the shares issued by a company." "one's degree of ownership in any asset after all debts associated with that asset are paid off."
- **Fair Market Value:** "the current value of the shares."
- **Valuation:** "an estimation of something's worth, especially one carried out by a professional appraiser".
- **Shares:** "Shares outstanding is the total amount of shares that are held by all its shareholders."
- **Stock Option:** "a benefit in the form of an option given by a company to an employee to buy stock in the company at a discount or at a stated fixed price." (One the ways to make the employees to work better and feel as the part of the venture and work for their venture!)
- **Vesting:** "Employees might be given equity in a firm but they must stay with the firm for a number of years before they are entitled to the full equity. This is a vesting provision (Important)

## Lesson 13 – Venture Funding →

*Why does a startup need funding? Cash flow dynamics:

- Startup costs
- Early stage losses
- Working capital (Capitale Circolante/Operativo definito come Attività Correnti – Passività Correnti)
- Cash liquidity buffer

- R&D investments
- Inventory investments
- Customer acquisition investments
- Accelerating growth




*Raising Capital:

- Bootstrapping
- Friends, Family and Fools
- Business Angels
- Crowdfunding
- Grants
- Accelerators/Incubators
- Subsidies / Gov Programs
- VC, CVC

*Self-Funding / Bootstrapping: Some start-uppers prefer to invest their own money into the company initially, without having to resort to other means of investment. Bootstrapping normally happens with initial customers supplying the startup at very specific conditions.

- The company is normally very tight on cash since self-investments are normally low and cover just a limited operational time.
- Start-uppers putting the investment normally trade a portion of the company equity on this (but watch out for the real long-term value of such an investment).

*The Three Fs (FFF): Family/Fools/Friends are often a very common way to obtain initial funding.

- No predetermined amounts even if this is normally a bootstrap amount (few k€).
- There are no rules.
- It is quite common that there is little or no need to payback such investment and they may ask for quite some unstandardized conditions.
- They normally bring "only" the money.

*Business Angels:


- Business Angels Networks: In Italy there are some of the best Business Angels Associations of Europe. Their investments fall in an approximate range between 250 K – 2 million. In Italy in 2019 Business Angels have invested 53 million on 88 deals.

_How does a BAN work?

- Yearly membership fee
- Investments are made through Special Purpose Vehicles
- The network creates a legal entity which hires an operative team responsible of managing:
  - The selection process
  - The network events
  - Collect information on the investments
  - Manage the SPV's
  - Manage the alert levels: yellow, red

_BAN: the selection process

1. The deck is sent to the BAN operative team which is responsible of the first screening
2. The proposals that pass the screening are sent to members of the network who are expert of the specific areas
3. Those proposals that are approved by the members are sent back to the operative team

4. The operative team calls the proposers and together with the network members who chose them prepare the pitch to the assembly
5. The pitch is presented to the assembly and soft commitments are collected
6. If the soft commitments are sufficient to cover the required investment a champion is nominated and the negotiation starts
7. If the negotiation ends positively, the due diligence starts
8. If the due diligence ends positively, the investment contract and the shareholder agreement is prepared signed
9. The SPV invests and the champion follows the investment

*Crowdfunding:

- Equity crowdfunding: It is quite different than a BAN investment
- Backers crowdfunding (Kickstarter, Indiegogo)
    - B2C
    - Costly
    - Declining (On average, Kickstarter only achieves success at a rate of 37 percent for all the projects funded on its site.)

*Venture Capital: Typical investment size:

- Early stage 500 K – 5 million
- Later stage 3 million – 10 million

In 2019 in Italy Venture Capital invested 597 million Euro on 148 deals.

_How does it work?

- General partners manage the fund. They own a carried interest. They share the risk by investing a small portion of the fund.
- Limited partners invest. They own a liquidation preference. Sometimes they can fire the fund managers.

*Corporate Venture Capital: Big, well-established companies sometimes have their own venture capital arms that invests in startups which are aligned with their strategic goals. (Like Samsung)

- They can supply very good networking / market knowledge
- They may act as a “captive market”
- They may put some special clauses in the investment contract in order to force the alignment to their interests.
- They can supply strategic resources and partnerships which could be otherwise unreachable to a startup

*Grants: A grant is a financial award for a business issued by a government, corporate, a non profit entity or other entities.

- They are “gifts” – no need to be repaid
- Quite/Very/Extremely competitive
- Often requires re-aligning your strategy to the entity issuing the grant.

- There may be limits on how you use the funds.
- They may be very aligned to specific objectives (ex. Green economy)

*Accelerators/Incubators: There are a lot of entities substantially investing in your startup in exchange for equity and providing initial funding and eventually other kind of support.

- They may or may not ask for equity in return.
- The funding varies (normally between 25 and few hundred k€.
- They may offer significant networking / visibility.
- They may offer formation & training / mentorship.
- They may offer incubation services.
- Sometimes you are limited to buy their services with the money they give you.

*Government Programs / Subsidies: There is a plethora of government programs (either at European level, national level or even regional level) or subsidies linked to very specific industries/objectives.

- Big number of programs.
- Very diverse range of investment / mechanisms – they may mix grant money and loans at very special interests.
- Will have very specific investment conditions (i.e. specific TRL).
- They may require very high effort in building the proposal or the partnership (i.e. with universities) and in managing the project and all records).
- They normally have tight rules and allowing conditions.

*Terms of Investment Contracts: In setting up investment contracts, the negotiation typically pivots around:

- Valuation (pre-money, fully diluted)
- Staged funding (when do you get the money)
- Protective rights (bad/good leaver, tag/drag, call/put, liquidation preference)
- Governance and control rights (auditor, nomination of board members, selection of the C level executives)
- Information rights (board observers)

## Lab – The pitch →

*The Job:

- Easiest: Make hypothesis. Get out of the building.
- Talk to People. Validate/Discard. Repeat.
- Once you have delighted customers – scale up.