START-UP IN ICT SIMPLE (FOR REAL)

GABRIEL ROVESTI

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Disclaimer

The course is really good, and the teacher really deserves to be followed, basically the only course I keep my attention upon without losing it. Of course, some economic fluff, but the man himself is really good, I would say funny enough, convincing to deserve to follow a course with him. Only thing, slides will change from year to year and he's really slow to put them inside Moodle, but there are many ways to contact him, even a WhatsApp group with him in it (see below for more).

To me personally, this course is really something else, because it actually considers you as a person, makes you think critically and even realize some value you have. Even the course principles, which will be commented from time to time, is something I personally endure in my degree of determination. What keeps you up at night, what makes you go ahead. The will to actually strive for something when nothing is going with you. You don't understand this unless you live it. But anyway, you don't care anyway, so why should I? Take these notes, they contain everything.

Many things will be written out of passion; really, for once not a course which is useless to follow and not only read the slides, do it yourself – like most courses here, sadly. I strongly suggest following the lessons, because otherwise the slides by themselves give nothing more than just some random words. You can see, apart from passion, these were written with many examples and concepts much more than the few sentences present in the slides (p.s. like every course *should* do). So, if you can out of will or work or whatever, follow this course: this should be mandatory instead of Economics.

Given he is very very late in uploading slides, these notes *should be useful up until the end as they are*, unless there are more changes to slides and content. He will take more than a month if he remember to upload slides, so no worries. In case, just look for older Moodle (like you should know already, but never take anything for granted in life) or just ask the prof sometimes – do not bug him, he also got plenty of stuff already.

There is no lesson on the Budgeting (only present up until 21-22, I don't know if it was missed because of lack of time, I think yes) and I strongly suggest avoiding being present to the guests lessons, since they serve no purpose at all (read inside of this file to know more).

Notes are presented in historical order, so it follows basically the entire course development and its project alike, for you to be organized in its entirety. Feel free to reach out to feedback me about this file contents, but also to thank me: does not kill me that much.

2 LESSON 1 – COURSE OVERVIEW/INTRODUCTION

The course will delve into the following *topics*:

- 1. Introduction to Entrepreneurship / Start-Ups
- 2. Innovation Vectors (Interviews with startups battling in the market)
    - IoT and beyond
    - Blockchain
    - Neural Networks/AI
    - Simulation / Digital Twins
- 3. Running a Start-Up / Theory
    - Problem/Solution fit
    - Product/Market fit
    - Business Model Canvas
    - Lean Startup Methodology
- 4. Building your Start-up
    - Selection of your Start-Up Topics
    - Assembling your teams
    - Building up the BMC
    - The Pitch!

The creators of tomorrow are between us; investing in young people bring startups, looking out for problems and then solving them in a new way. These are meant as *innovation vectors*, which are technologies improving the society and bringing new solutions.

Building a startup means finding a fit between *having big problems with stupid solutions*, becoming wrapped in a product then solved via the means of a company. There are many methodologies to do that; we don't care about those, we go out finding problems.

Theory lessons are held via talking, then laboratories are made with the idea of meeting new people (*and going outside of the building*, as you will hear many times during the course). We will have to present ourselves in front of the class then gathering idea of general problems to solve, betting on the best ones. Groups will be made by 3 people for the projects.

Consider the example of university, which is made up of *Three Missions*:

1. Scientific research
2. High education / Teaching
3. Bringing innovation/outcomes of research to the masses/market → Progress

Technically: "to share culture, knowledge and transfer results of research outside of University, contributing to overall social growth and cultural path". Bring everything to the public: create *progress* and bring it as actor to the society. Specifically, on this:

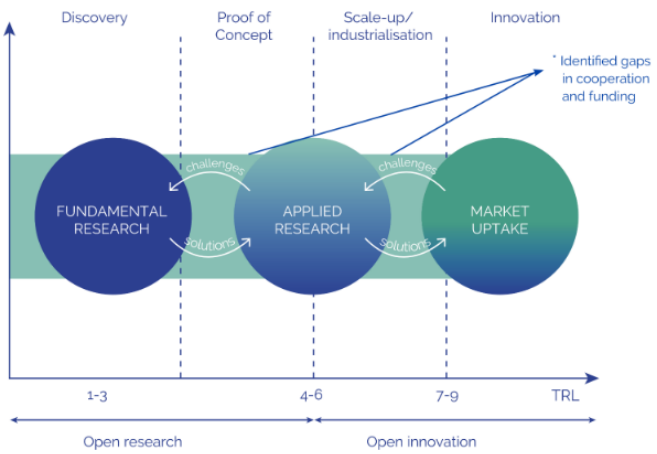
- Technology transfer
- IP and know-how management
- Bringing products and services to the market
- Create social, economic, cultural advances

Written by Gabriel R.

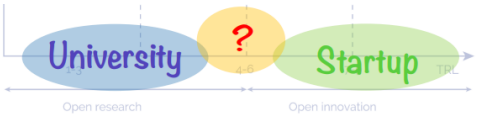
A start-up is *the innovation vector allowing to bring progress to the society* and many big companies are doing this, e.g., Microsoft/Intel.

There are different means of research (consider the comparison university vs startup):

- *Fundamental research*, done with laboratories, papers, experiments
- *Applied research*, crafting Proof of Concepts and demos to test the market
- *Market uptake*, bringing research to the market, then seeing what happens



The above *research/innovation loop* tries to describe the connection between university and start-up, considering the figure above: discovery, trying new concepts, industrialization, innovation.



The switch between university and startup is *us students*.

- The best way to transfer knowledge to the market is a *brain with a motivation* (know-how/IP/tech transfer)
- There will not be anybody else doing this: a driving force keeping you awake and motivated. Just do it: this is the fastest and most effective way possible
- To drive change, we want to be uncomfortable, and drive change new ways

There is direct interaction with the professor:

- Subscribe to his WhatsApp Group (all communications will be given there) – top priority
  - group changes every year and it's displayed via QR code within first slides of course
- Send him private WhatsApp messages whenever you need info / help on anything
  - he will reply asap
- Send him emails at fabio.dalessi@unipd.it – lower priority
- Setup a one-on-one meeting: contact him by WhatsApp

The exam is composed of two parts:

- *Theory*: Written exam (with math also, but not that difficult) – 0 to 30
  - 30 questions yes/no
  - 50% of the final mark
  - For particular reasons: can be oral (3 questions with the professor)
    - Happens 5% of cases
    - It is usually done to get a better score; see in the related chapter to know more
- *Group work (startup)*: 0 to 30 (3/4 people in total), see here for more info on this
  - 50% of the mark
  - Result of a job done during the course
  - Teams – Pitch (done within investors) – Interviews with real people

Final Score: with 1>=15 AND 2>=15, the final score will be (Theory+Group Work)/2, rounded up.

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3 LESSON 2 – THE JOURNEY BEGINS/ENTREPRENEURS

Startups are not about lectures and entrepreneurship is not about grades. This is reality: nobody teaches what to do and how. Do it your own way, just like happens in life. *Go outside and discover*.

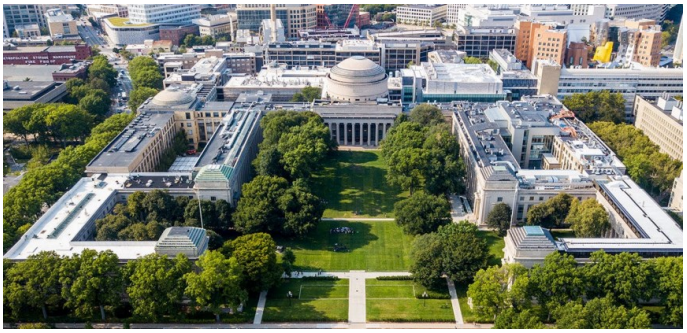
- We will not use a reference textbook
- Our course is about learning how to act "Outside the Building"
- A good reference for the course contents: https://steveblank.com/

Several authors which will be cited during the course (Osterwalder, Aulet, etc.) – be entrepreneurial here too and go hunting for information, go find the different views, sometimes very different, evaluate them and compose your view.

Consider MIT = Center of Technology Engineering and its *impact on the economy*:

- They have 10000 students and 6000 of them are PhD
- 25% of the alumni have been involved as founders or cofounders of a hi-tec startup
    - Consider UniPD: 63000 as of 2021/2022) and only 6% of students are PhD/Master
- In Italy a PhD is thought to be only about teaching; in USA, it's useful to open a company

Some data about them:



- MIT Alumni launched
    - 30.200 companies
    - 4.3 mln people are employed there
    - It generates revenues for 1.9 trillion US $ per year
- Innovation comes from unknown people in unknown places
- Some data about MIT Impact on Economy
    - 11% of the Alumni who graduated from the 2010 decade launched a company compared to 8% of the previous decades
    - The median age of the alumni launching a company has been steadily declining and in the 2010 decade dropped to 27 from 30 years old of the previous decade
    - 80% of the companies launched by the alumni survived for more than 5 years

Table 8. Participation of MIT Alumni in Entrepreneurship and Innovation Activities, 1940s through April 2014

Activity	Alumni participating (%)
Entrepreneurship	
Company founder	25%
Early employee	22%
Innovation	
Inventor	34%
Patentor	31%
Product development	55%
Advisor	
Company board of directors, private	17%*
Company board of directors, public	3%*
Scientific advisory board	11%*

*Alumni serving in this role at time of survey; the total percentage of alumni who have served in this role at some point in their careers is no doubt higher.

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%

Written by Gabriel R.

The Italian problem is simple: static mentality and avoid changing (it's hard). Students are more understood as resources in other states (e.g. USA). Movement is a constant and dynamism is what is needed in order to improve and make a change. Our problem is the "sofa effect": getting the habit of being in the comfort zone and avoid changing. In entrepreneurship, we definitely want to avoid that.

Overtime, in MIT:

- Companies have increased in number over decades
- Participation rate have been increasing overtime
- Serial entrepreneurs have increased in number and companies
- Median ages have been decreasing slowly

We define entrepreneurs means taking the risk in doing something never tried before, setting up one or more businesses and taking financial risks in the hope of profit, possibly creating value.

- It can be "any person who doesn't know how will come out, taking a risk"
- That brings *progress*
    - Means believing in people and resources enough to bring new things

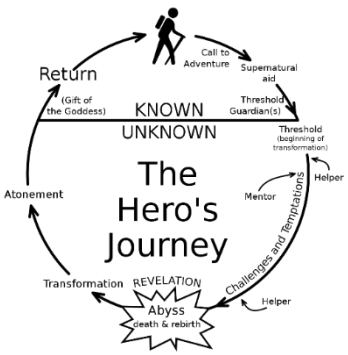
Some more textbook-like definitions:

- "Entrepreneurs are individuals who exploit market opportunity through technical and/or organizational innovation" – Schumpeter (1965)
- "Entrepreneurship is about taking risk" – 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" – prof. definition

Money is a measure of how much value it's actually created: it can be cultural, social, mental, economic, etc. Progress is a consequence of a few: only 4% survive while others 96% die badly.

Where to start then? Consider the Monomyth theory (also called "hero's journey") – the stories of religion, movies, adventures always revolve around a hero who goes on an adventure, is victorious in a decisive crisis and comes home changed and transformed.

This theory comes from Joseph Campbell, 1949, from "The Hero with a Thousand Faces" and was used by him to compare religions.



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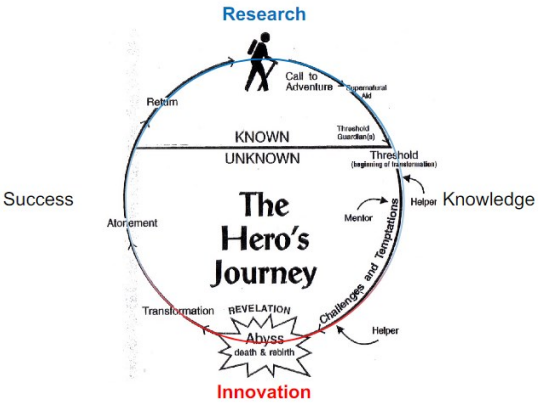
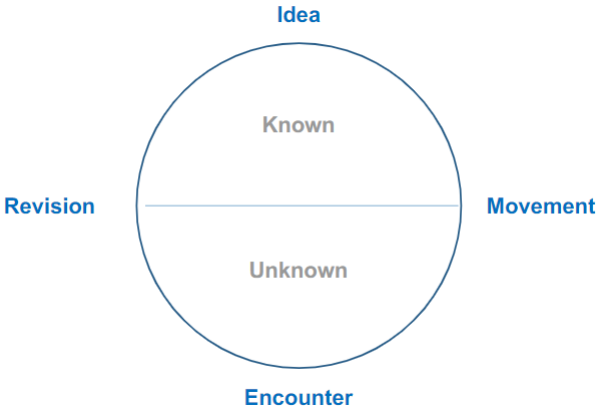
It works this way (longer explanation made on purpose, so you don't use other sources):

- In the *departure* part of the narrative, the hero or protagonist lives in the ordinary world and receives a call to go on an adventure
    - The hero is reluctant to follow the call but is helped by a mentor figure
- The initiation section begins with the hero then traversing the threshold to an unknown or "special world", where he faces tasks or trials, either alone or with the assistance of helpers
    - The hero eventually reaches "the innermost cave" or the central crisis of his adventure
    - He must undergo "the ordeal" where he overcomes the main obstacle or enemy
        - Undergoing "apotheosis" and gaining his reward (a treasure or "elixir")
- In the return section, the hero must return to the ordinary world with his reward
    - The hero again traverses the threshold between the worlds
        - Returning to the ordinary world with the treasure or elixir he gained
    - The hero himself is transformed by the adventure
        - And gains wisdom or spiritual power over both worlds

The hero will come to a point in which the known and the unknown come to a *threshold*. When you go across from this border you go to the unknown. All of sudden you die, or you are going to die: this point is the *abyss*, where transformation occurs after the realization of change, getting to what he wants.

All of us have common principles and common ideas which drive the actions of human beings when studies psychologically (Jungian analysis), compared to the previous one:





Linking Jung with the previous concept, we might briefly characterize the following:

- *Idea*: The initial spark of inspiration or realization, often arising from the unconscious mind
- *Movement*: The active pursuit or exploration of the idea, which involves engaging with it consciously
- *Encounter*: Confrontation with the unknown or shadow aspects of the self, representing challenges and obstacles
- *Revision*: Integration and transformation resulting from the encounter, leading to personal growth and understanding

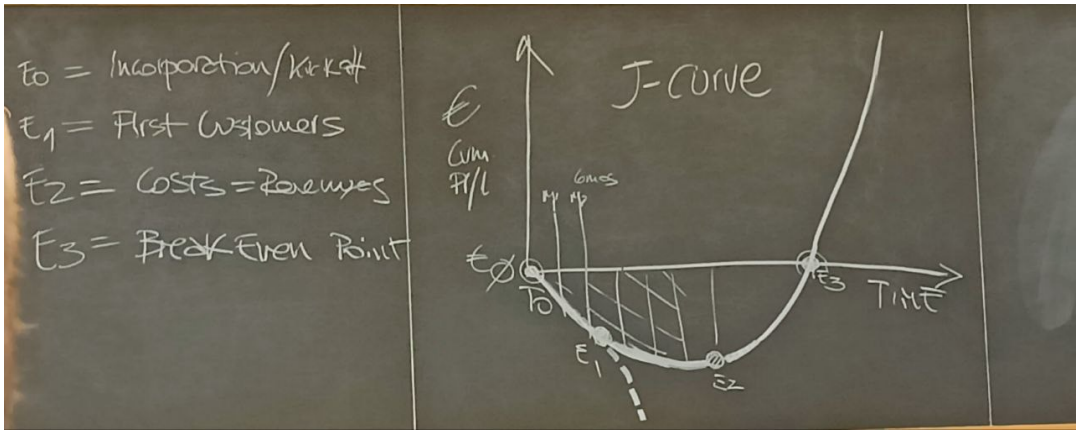
Trying and insisting continuously is what actually drives us towards goals: consider gold miners in California. That is the place where most of innovation and startups are present, because there is the most risk-taking mindset there.

Written by Gabriel R.

4 LESSON 3 – THE J-CURVE

Running a start-up is like a love story: you have no defined bounds and no guidance. Consider a plot with time on x and cumulative profit/loss on y, taking a look at *our* journey.

- The curve starts going low (spending is immediate – customers are not there yet), then every month money is spent, going steadily down
- At one point customers increase and there is a curve steadily going up
- Consider all moments
    - t_0/e_0: incorporation/kickoff
    - t_1/e_1: first customers and expenses
    - e_2: costs = revenues → from there, slope starts rising up again
        - Startup is still earning, since cumulative losses diminish compared to revenues
    - e_3: breakeven point → from there, company reaches initial state, recovering losses
        - As the company gains more scale, it reaches the break-even point
        - where $Fixed\ Cost + Variable\ Cost = Revenue$
- The curve has a j-shape, so it's called j-curve, which illustrates assets value of a private equity fund – it is bought when holds no value then sold at a higher price after growth
    - Put bluntly, it shows that things are going to get worse before they get better



In that particular graph, there is a point called VOD (Valley of Death), in which failure is reached. The curve can be considered good because we don't know exactly where we are (how steep is it – don't know the parameters). This business model is more of a "find a way" rather than being immediately profitable – find the right model and secure alignment according to phases and stakeholders.

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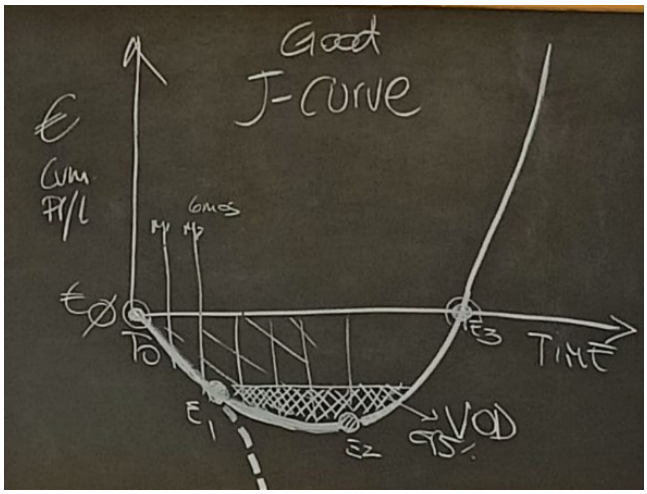
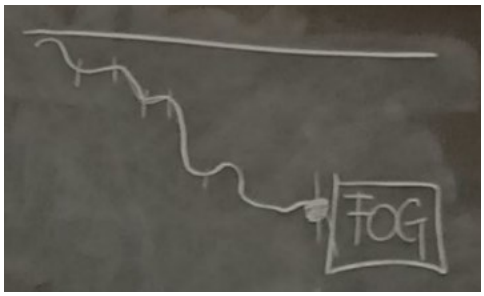
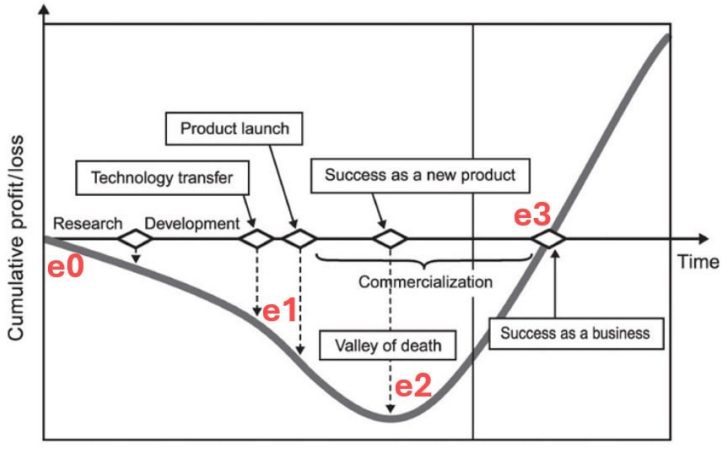


The curve might be actually steeper than that because we don't know what comes next, going day by day. We are just looking at the trend (j-curve), decreasing and increasing.

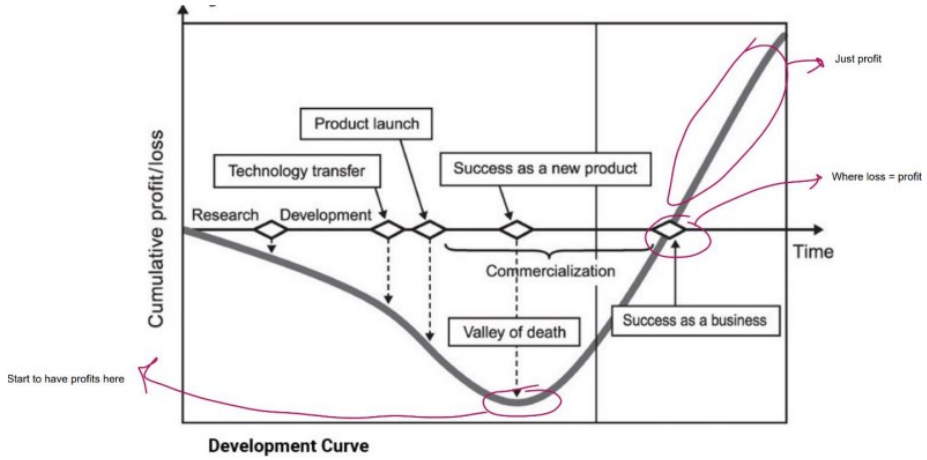


- We know how things should be, not how they precisely are
- It's a leap of faith: you don't know where you are going, you just keep going and having trust in goals to reach (even in uncertainty – "fog" times)

More precisely, the curve is like the following. Like start-ups, consider the people who fail: they have more experience and even in *valley of death* – fail, fail and try again, learning from mistakes.



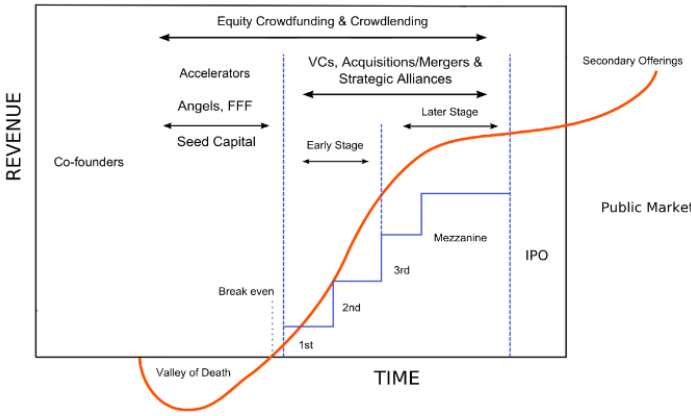
Development Curve

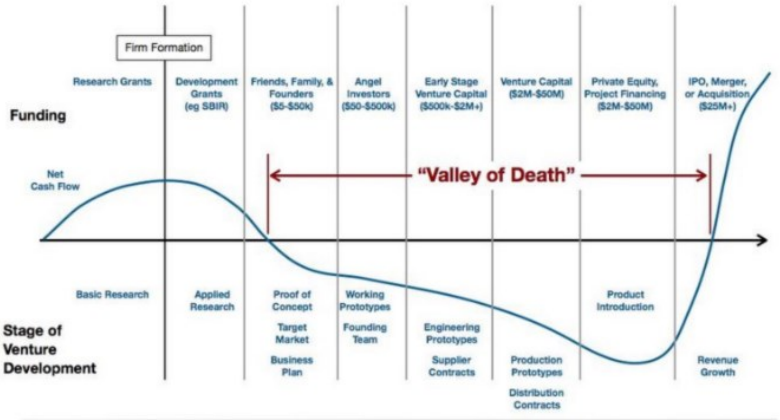


Development Curve

Written by Gabriel R.

The j-curve considers the development curve, compared against product maturity. Consider other examples of j-curves, rather than only funding (left – VOD – the bigger picture, right – other source, same story):





When there is failure, we don't have to give back all the money. This is because it's called risk investment, so you expect the risk to be there. Consider the case of banks: they give you money in order to buy something, say an house.

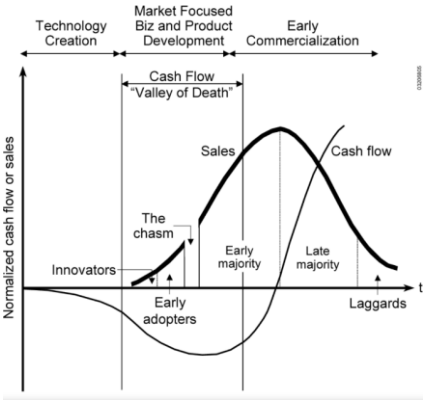
- Even if you lose, there will be return of investment (ROI)
    - If you lose 100000, you will have to give 110000 back
- Investors already account for failures
    - but even with a small share, return will be great if it will happen
- The rate of failures of startups is 95% on average
- It's the same case with family: you find one girl/boy and you grow up a family with them
- If you lose all the money, the company fails, not you

There can be different kinds of companies with different responsibilities (written just to consider the effects of failure, not strictly asked) – ones with joint ventures/obligations for obligations, other with limited shares, others with shareholders and jurisdictions, etc.

Whenever there is failure, we have no definite choice. The market simply destroys without no precise reasons. In a company, there are different responsibilities and who directs has bigger ones, in order to make the company go well (but an owner has no responsibilities – you decide if you want to put money or not). Shares allow to get pieces of the company and it's useful until you have customers, otherwise it wouldn't work.

Additional information on the typical venture path can be added by looking at the Sales and Business Development stage.

This brings us to a very important concept: *in a startup, technical & product maturity, interest for investors and business model maturity are intrinsically linked.*



Written by Gabriel R.

There needs to be a specific unit of measurement: with euros it's easy but, quoting Lord Kelvin, "you cannot improve what you cannot measure". You cannot trust specifically start-uppers, because they will have their own perception, which might not be objective and real.

The specific unit of measure it's TRL – Technology Readiness Level, which allows for *estimating the* maturity *of technologies during the acquisition phase* of a program in a weighted scale.

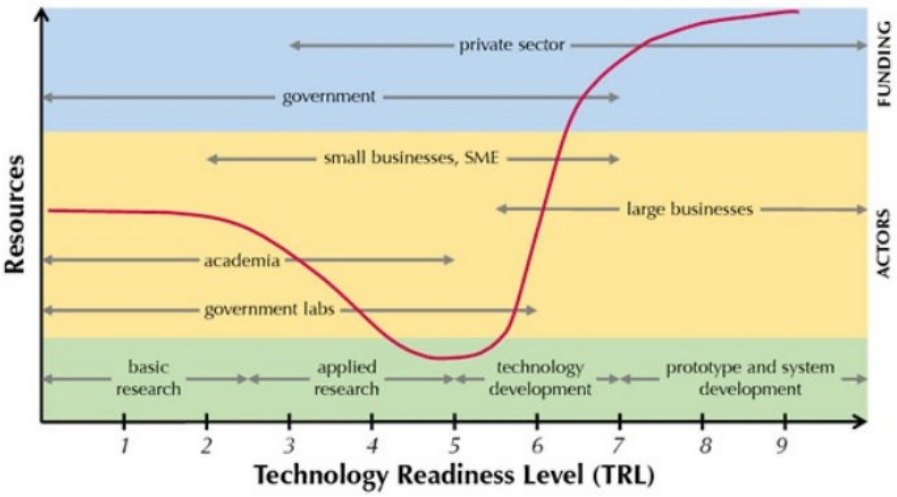
- That is the most important one; more generally, there are different Readiness Levels, called RL indexes
- Derived from aerospace tech assessment methodologies at NASA
    - Scales ranging from 1 (lowest) to 9 (highest)
    - Seeing how mature and how near to the market a specific technology is

We discuss the single points more practically:

- We start from the bar idea (Level 1)
- There needs to be a concept behind (Level 2)
- There needs to be a demo in a form of a Proof of Concept (Level 3)
- Real demos will come later (Level 4)
- Validation happens with testing (Level 5)
- It needs to be done inside a relevant environment (Level 6)
- It will be demonstrated in an operational technological environment (Level 7)
- It will be working on a full and complete system (Level 8)
- This will be proven in a real operational environment (Level 9)
    - Beta testing will be between 8 and 9

Other scales deal with Manufacturing, Investment, Integration in complex systems, etc. Investors will evaluate the success based on the deployment phases.

TRL is linked to Valley of Death, which represents the often neglected addressing of TRLs 4 through to 7, where neither academia nor the private sector prioritize investment.



Written by Gabriel R.

5 LESSON 4 – STARTUPS, PROBLEMS, SOLUTIONS

We define some features of what a startup is:

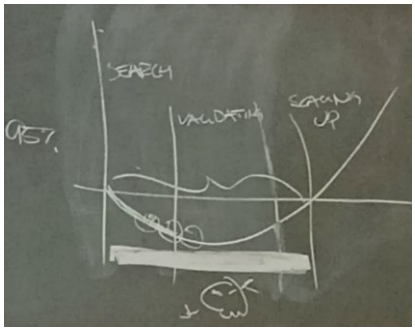
- A new company
- High risk
- New ideas
- Based on technology
- Small in dimension and employees
- *Grow quickly*
- *Repeatable model*
    - this is useful in order to make *industrialization*

More specifically, a startup is "a temporary organization used to *search* for a repeatable and scalable business model", according to Steve Blank.

- They will never live forever – fast growth, extreme uncertainty, intrinsic innovation
- The real difference between a startup and a real company it's what they do
    - The first year they *search* things, they don't do them

We can split the j-curve into three sections:

- Searching
- Validating
- Scaling up



A startup is always inside the valley for death, dying and growing for finding a *repeatable* and *scalable* business model. More in general, they can be grouped into 6 categories:

1) Lifestyle business (also called Lifestyle venture)
    - A business run by its founders *primarily with the aim of sustaining a particular level of income and no more*
        i. 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*
        i. It's meant to be a business which adjusts to the lifestyle - so that the founder can live their life as they like – also, try to survive is a goal
        ii. Typically with limited scalability
    - E.g., Moderna – the ones with the vaccines, working in lab with very little money
        i. Typical entrepreneur, with goal to make the most money
        ii. The first to sell it as fast as possible and expands among existing businesses
        iii. It requires time and infrastructure to do that on the market

2) Family business (Small businesses)
    - They work as hard as any other entrepreneur and 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"
    - *Examples*: home based food services, plumbing, restaurant, small niche markets
    - *Other example discussed*: UNOX – build professional ovens, which started from a small family and emphasizes survival and growth within its market
    - They are not designed to be scalable, but goal is survival here

3) Startups designed to be scalable (and to do it *quickly*)
    - Scalable startups tend to group together in *innovation clusters*
        i. 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, they attract all the risk capital (and press), with goal of expanding
    - Examples: Facebook / Tesla / TikTok / Amazon AWS/ Airbnb / Uber / Netflix

4) Startups designed to be sold quickly
    - Their goal is *not to build a billion dollar business, but to be sold to a larger company*
    - The goal of the management is different than that of building a profitable business
    - Examples: pharma, hi-tech, entertainment-related companies, software/game devs

5) Spin-off from existing companies (Startup from large companies)
    - Company generated from a very big one, which won't realize the idea
    - There is a proposal to go away from big company, abandoning the wage and getting help from the main company
    - The company could easily buy back the idea if the idea succeeds
    - Changes in customer tastes, new technologies, legislation, new competitors, etc., can create pressure for more disruptive innovation
        i. Requiring large companies to create entirely new products sold to new customers in new markets
    - They are "transformational innovation projects" of large companies
    - Some reasons
        i. Failure → there is always the risk to do that
        ii. Branding → spoil the main brand with a product to not detach reputation
        iii. Speed and flexibility
    - Main reasons
        i. *Speed* → not dependant to the times of big companies for time and resources
            1. things are always done to not freeze practices
            2. works with processes and shares themselves
        ii. *Motivation* → you either die or succeed
            1. because of less resources and salaries
    - Example: Waymo
        i. Originating from Google's self-driving car project
        ii. Waymo became a separate entity under Alphabet Inc. in 2016
        iii. It focuses on developing autonomous driving technology

iv. a strategic move that allows it to innovate rapidly
v. without the constraints of the larger corporate structure of Google

- Other examples:
  i. PayPal, which came out from parent company Confinity to allow payment
  ii. VMware, spun off by Dell to capitalize on cloud computing/virtualization

6) 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 wealth for the founders
   - Expanding and offering things to the market receiving donations, sponsorships, etc.
   - Saving people, dealing with diseases, handicaps, third/unindustrialized countries
   - Profits are thanks to charities or donations
   - Example: Kiva
     i. It is a non-profit that enables people to lend money via the Internet
     ii. to low-income entrepreneurs and students in over 80 countries
     iii. Kiva's goal is to alleviate poverty
     iv. by allowing people to hold up their own ventures through microloans

So, where do we start from?

- We can't start a company without knowing what it does
  - We don't start from only giving it a name, some code or whatever
- We look for problems to solve and bringing progress, achieving success
  - Find a niche and go there
  - Those are the problems that don't make you sleep

As of now:

- Next week (half of March) we will introduce ourselves – also, if you want, with already ideas of problems which can be solved
- The week next after, we'll be introducing the problems we want to solve

What's the call to the adventure – where to start?

- What *kind of startup* are you going to launch?
- What's your *purpose*?
- What do you want to become?

We define the Purpose as the following:

- What *change* do you want to bring about in the world
- What is the *reason* your organization exists
- Your purpose is the fundamental message that fires your people up
  - Brings them to work for more than just a paycheck
  - And gives meaning to their efforts
- It is often the very idea that launches a company in the first place
  - Sustaining and guiding it through the earliest stages
  - It's not a technical idea, it's a passion

Written by Gabriel R.

How are you going to make it?

- What makes your approach *unique* and *recognizable*? What is your characteristic "way", how will you bring about the change envisioned in your purpose?
    - To be immediately recognized as something new and different
- It's inspired by your organization's culture, strategy and "core values"
- Your first stakeholders will be your cofounders, family and friends

What is your Impact *going to be?*

- What impact will your business have on the lives of others and what the world will look like when you've accomplished your purpose?
- The impact statement should be more aspirational than the purpose statement – more of a stretch – because you may never quite get there, but it will keep people motivated and sustain the organization in its later stages of growth

The following are the three "magic words" for companies:

- Vision
    - Statement: describes, in a simple, immediate way, the major aspirations of an organization – what is hopes to achieve or become
    - E.g., Google with the vision of "giving access to knowledge for free"
        - Consider all the Google products: Maps, Gmail, Project Gutenberg (free books)
            - All easily accessible, powerful tools, completely for free
        - Information to merge and not to divide people
- Mission
    - Statement: describes, in a simple, specific way, how the organization is going to achieve its Vision
        - Medias and infrastructure to get to know things
- Values
    - Statement: defines what the organization believes in and how people of the organization are going to act and behave. This can be defined as Code of Ethics.
    - The whole company is structured around this

Some examples about 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."

We define ideas may come from academic projects, industry experience or any other kind of experience which may *spark* of a *need*.

- Not having "an application/a product doing X" – everybody does that
- But starting from "I feel there's problem X to be solved"
    - Define the problem very well
- Ask people if they see the same problem as you and their opinion
    - Problem validation

Ideas are often associated to assumptions, which are what make great ideas fragile or vulnerable. Remember ideas alone are "*worth nothing*", putting the problem picture on the wall.

- Innovation is associated visually with a lamp, sparking an idea
- It's wrong, this is just 50% of the idea to solve a problem
- The idea might work, but to make it become innovative it *needs to go into the market*
    - *Commercialization bring progress*
        - Not inside a laboratory but accessible to everybody

More specifically (Bill Aulet, professor at MIT): $Innovation = Invention * Commercialization$

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"). To have a working idea, talk to everybody and find interest; nobody cares anyway.

- There is the novelty factor, which bring progress
- "Be sure that there' is a market that wants your product. Before you build it."
    - Lean Manifesto – Founder Mantra

Companies start from a *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

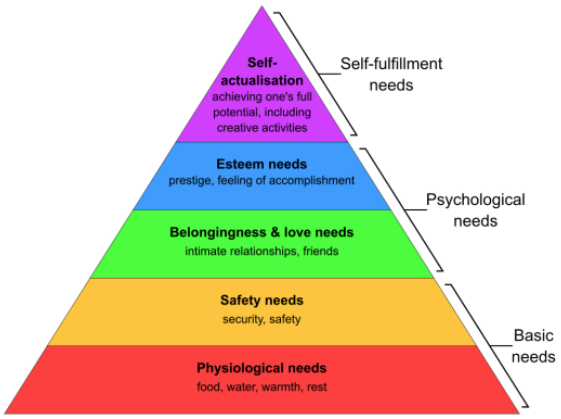
The following are the concepts to keep:

- ~~Wow I have a wonderful idea!~~
- Possible intuition of a need
- *Problem / Solution Fit*
    - Go with a problem
    - Demonstrate it
- *Market / Product Fit*

Consider the human motivation based *Maslow's Pyramid*/hierarchy of needs, widely used to express how we deal with needs and aspirations, giving different priorities to different types of needs:

Abraham Maslow
(American psychologist, 1943)

Even if Maslow himself never draw it as a Pyramid, his theory on "Human Motivation" and the related concepts have been widely used in all fields to express the way we deal with needs and aspirations, giving different priorities to different type of needs.



As a humanist, Maslow believed that people have an inborn desire to be self-actualized, that is, to be all they can be. To achieve this ultimate goal, however, a number of more basic needs must be met. This includes the need for food, safety, love, and self-esteem. Maslow believed that these needs are similar to instincts and play a major role in motivating behavior.

- First look for pain and once you can heal it, now find someone who cares
- We never care for the needs unless it's something affecting our basic ones – psychological
    - Find the big problems which can affect your life
    - Facebook had the success it had because it was working on basic psychological needs
- There are all the other needs to have love/company/esteem and self-realizing goals
    - Financial security, health/wellness/safety, friendships, social/community groups
- Going up in the pyramid means lesser amount of money/value and progress
- The Covid vaccine was on the lowest level (red)

6 LABORATORY – STUDENTS PRESENTATION

(Some info for you to be organized from the start)

Basically, everyone in rows is selected and is not forced to speak, you can say whatever you want, just to have you presented in front of everybody and say your passions, your goals, even reasons why you follow the course, again, improvise or prepare a speech, it will be very easy and the professor, yet again, will make you feel very comfortable in any case.

People who will not be able to talk will present themselves the next lesson, in a very pleasing and welcoming way.

7 LESSON 5 – THE PROBLEM/SOLUTION FIT

It's time to define your product. You don't find problems in the supermarket; the products will be designed not when you have the problem, but when you are inside of a final step inside development process.

- *When you ended your path, then you have the product*
- But first, you study the market
    - Phase in which you are more market experts than developers
- You already know it's a waste of time, but the chance of getting there is what drives you
- Problems worth solving required a slightly different idea because market changes
    - The product is trivial to do but the idea is understanding the "*what*"

We're at the bottom of the Maslow pyramid, where *investors are willing to put more money* because *needs are more urgent* than anything else – so "look for pain" out there and solve their problems:

- Nobody cares about the main idea and no worries in keeping the secret
    - The market, if mature enough, will be able to grasp and make it profitable anyway
    - The idea is worth nothing by itself
- If the product is for everybody, then is for nobody
- Consider the problem solved by a toothbrush
    - It's both a low-level need (hygiene/diseases) and a high-level one (aesthetic)

How to validate you are solving a "correct" problem:

- 1. Ask who will buy it
- 2. Get to the inner need: the pain
- 3. How the solution will change user's life-routine
    - Describe pre/post user journey
- 4. Why now? Can you do it, now?
- 5. Why you? IP meaningfulness

Bottom-up street Data based.
"Get out of the Building"

At this point, iterate!

As other notes say: *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".

Consider the Nokia history:

- Possibly the biggest player in the mobile era up until the mid-2000s
- Not believing in the rise of smartphones, they went their own way
- Not going the Android way, but keeping Symbian OS
- Afraid of change and frightened to adapt technologically and in marketing resources
- Moral of the story: *work on the market, not on the product*

Quoting the creator directly, Ilia Zelenkin:

- One of the winners of stage 1 in the Nokia Innovation Acceleration Program, which provided you with a €20,000 discretionary fund
- While others focused on coding and developing their solutions, he chose to spend the funds traveling around Europe to meet customers, even randomly
- Despite this unconventional approach, the strategy paid off, as the project was among the four selected to advance to stage 2 out of hundreds of participants

In *creating your product*, it's all about market and people, not about products and technology. Get out of the building, test, gather data and insights, make hypotheses, experiment, repeat.

The Product Development Model is definitely a *path to disaster*, if we ask ourselves: where is the customer? Instead, you gotta make a Path to the Epiphany – Steve Blank (see a sample here). There are two main options:

- The *product development model*: the path to *disaster*
  - Where is the Customer? – not creating a product with customers in mind
- The *customer development model*: the path to *epiphany*
  - Ask to yourself: what does the customer do every day?
  - 4 phases process – customer discovery/customer validation/customer creation/company building

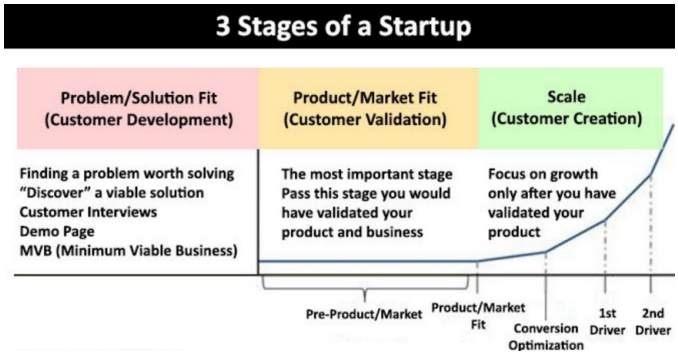
The Key mindset in defining your value proposition (what makes you *unique*):

- Focus on *a real problem to be solved* rather than a technical solution which is really cool
  - When you have no arguments, you have nothing (e.g., "we are the best")
  - This requires even a small shift in perspective, finding a valuable problem for which to build a good solution
    - E.g., pizza delivery – "the pizza is either smoking hot or it's free"
      - Win-win for the customer in any case
      - So stupid nobody does it and that's where startups should go
- This is a *radical shift* from the typical mindset of technical oriented people

The key value proposition is validated following two fundamental *steps*:

- Problem/Solution Fit Validation
- Market/Product Fit

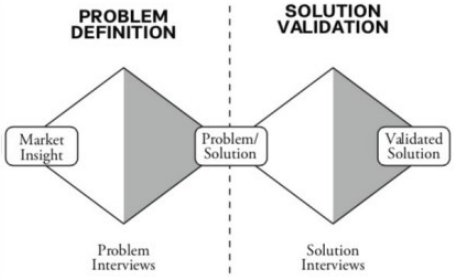
Then, scale up as fast as you can and be prepared for the takeoff.



Written by Gabriel R.

About the Problem/Solution Fit Validation:

- *Being sure that the problem you identified is the real one* and that the solution you are thinking is the best one, something that people will actually want
    - You will have to go deeper, not just seeing the surface of the problem
    - E.g., queue management system with booking inside hospitals
        - App to book and then get notified when there is your ticket
        - It was so successful it was removed
    - *Magic tools*: Double diamond diagram
        - Process of exploring an issue more widely
            - Divergent thinking – "opening the problem"
        - Rather than deeply then taking focused actions
            - Convergent thinking
        - Discover-define-develop-deliver (see here)



From a simple "why", discovery can happen:

- Link within the customers/market
- More knowledge of the market

Some magic *tricks*:

An example of a problem is: the vehicle will not start.

1. *Why?* – The battery is dead.
2. *Why?* – The alternator is not functioning.
3. *Why?* – The alternator belt has broken.
4. *Why?* – The alternator belt was well beyond its useful service life and not replaced.
5. *Why?* – The vehicle was not maintained according to the recommended service schedule (a root cause).

- *Five whys rule*
    - A simple process to follow to solve any problem and finding the root cause/defect
    - Repeatedly asking the question "Why" (five times is a good rule of thumb –see above)
        - To peel away the layers of symptoms
        - That can lead to the root cause of a problem
    - Provides a simple framework to work with
- Look for *delight*
    - Getting even small signals the problem might be the one
    - Interview unbiased people
- Follow *strong signals*, not strong numbers
    - Signal = something *you can't go on without*
    - People is looking for you
- *Never think* at the product
    - Focusing on the problem and user needs
    - Rather than getting attached to the product or solution you initially think is best
    - "Stay hungry, stay foolish" – Steve Jobs
- "Invalidation" method
    - Actively seeking to disprove assumptions on the problem and solution's effectiveness
- Canvases
    - Frameworks for laying out hypotheses and testing them in a structured way
- Experiments

Written by Gabriel R.

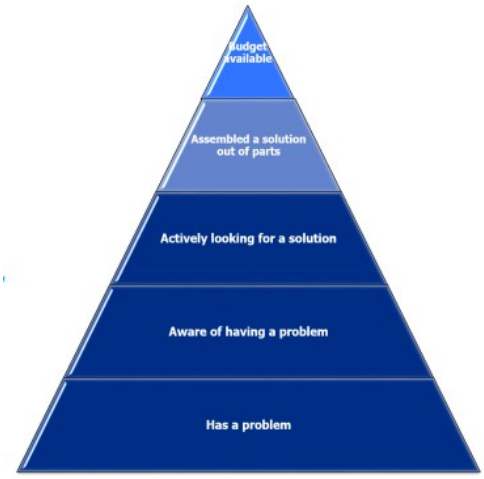
Long story short – find the *delight*, via tricks and tools:

- "*Make something people want*. It's all about creating an experience *people love*."
- Delight the (early) customers
    - Solve it For The Customer (SFTC) – customer-centric approach, solve his problems
    - Automate
    - Deliver Fast
    - Iterate
- Make them *love* the product
    - Do not engage with customers you're not justifiably confident you can delight
- Better to have *100* customers who *love* your product
    - Rather than *1000000* users who *like* your product

Who would buy a non-existent product? – in the tricks and tools there are early evangelists (also called earlyvangelists).

They can be identified with the following profile *features*:

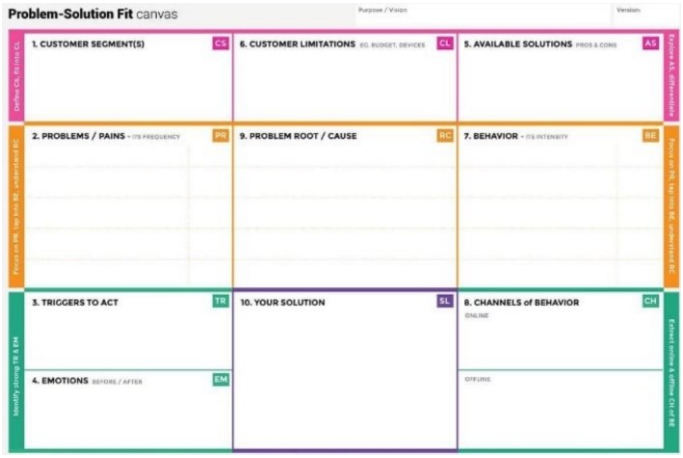
- *Early adopters*
    - Who buy unfinished and untested products because they want to be 'first' to
        - Build a competitive edge
        - Be glam
- *Leaders*
    - With technical competence on how to use new solution to existing problems they face
- Those willing to *make a leap of faith* and buy an early solution
- *Enthusiasts*
    - Who spread the good news about the product, for others to follow



Inside the tricks and tools, another card are the canvases.

- Particularly trendy and well known among startuppers, 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
- We will use some Canvases during the course, and will focus on the Lean Canvas by Ash Maurya, where you may be requested to describe your startup model
    - *Note*: Canvases are good tools, they don't resolve anything – you have to do the work

The following is an example of Problem/Solution fit canvas:

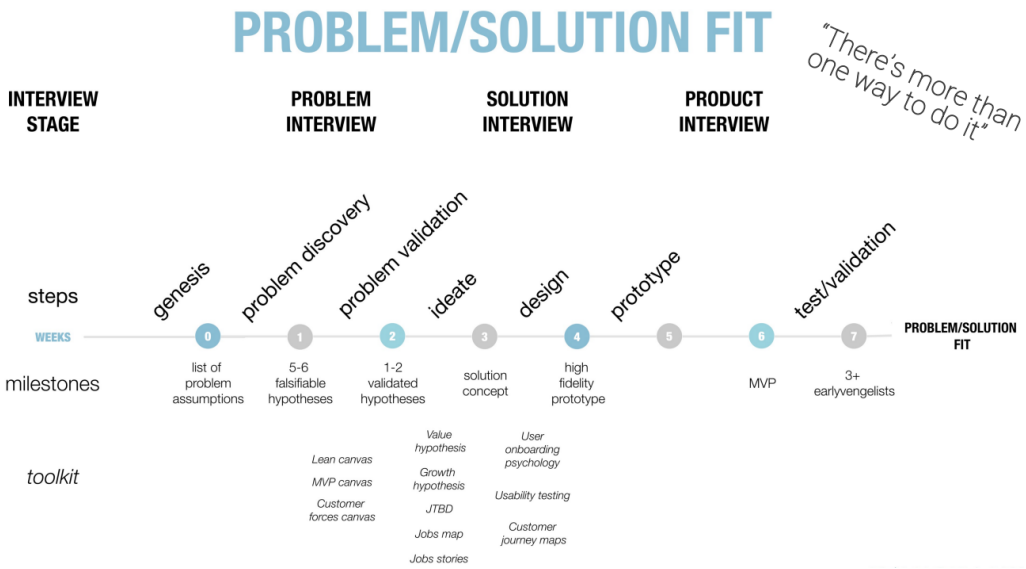


Continue to strive and go ahead again: *Experiment & Iterate!*

- Hypothesis on the problem
- Design and experiment: is the problem the correct one?
- Get out of the building – go outside and go to the market
- Test, and do it a lot
- Gather data, hoping to get wrong so to correct measure
- Learn/insight, rethink at your errors and start again

Written by Gabriel R.

There is no clear way, in which different phases go at the same time and then validate value propositions dynamically according to the context. This is the *methodology*:



So, to summarize: In this phase, a problem is found, a solution is discovered, customers are interviewed, a MVB (minimum viable business) style demo. Problem-Solution fit requirements: find customers before building, don't build anything until the commission.

More specifically:

- In the *Interview Stage*, the focus is on gathering qualitative data from potential users to understand their needs and experiences

- The *Problem Interview* phase starts with listing initial assumptions and then moves into identifying and validating real user problems through interactions and detailed interviews over several weeks, utilizing tools like the Lean canvas and customer forces canvas

- During the *Solution Interview*, the process involves ideating a solution concept, designing a detailed solution, and creating a functional prototype

- Tools such as Jobs-to-be-Done framework and customer journey maps are employed to ensure alignment with user needs

- The *Product Interview* involves testing the prototype with users to refine the design based on feedback, culminating in the development of a Minimum Viable Product (MVP)

- The problem/solution fit is achieved when the product satisfies the needs of early adopters and receives positive feedback, indicating market readiness

Written by Gabriel R.

8 LESSON 6 – THE PRODUCT/MARKET FIT

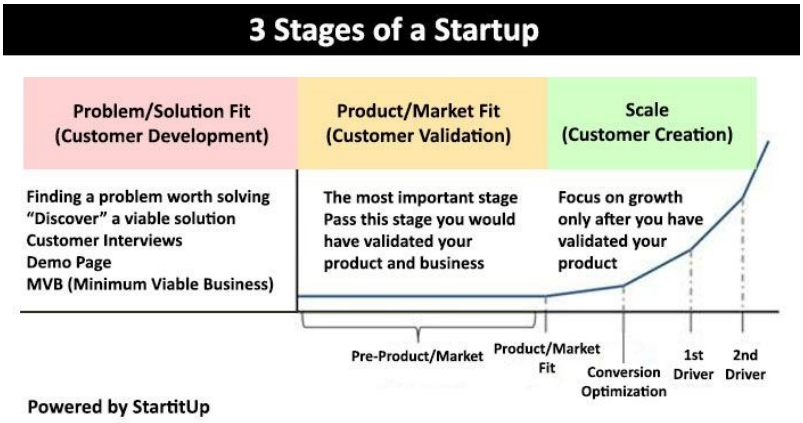
The main stages for a startup comprise the previous concepts the following way (ready for *takeoff*):

- 1. Problem/Solution fit validation (understanding if the problem is the real one)
    - Problem is similar to the one you thought, but it's not quite that
    - Never talk about money here when talking to people
    - Come back home, think again and do your thing
    - E.g. the famous case of McDonald's
        - At one point, they expanded their offerings making breakfasts for people
        - Milkshake all so much success over the rest of products
        - Marketing specialists didn't understand why it was so successful
        - The solution was asking people
        - It was the only product being dense and making commuters people having breakfast even with no time

- 2. Product/Market fit validation (customer validation)
    - Being sure that the product you are planning to develop is something that people will buy - here we define the degree to which a product will satisfy a strong market demand
    - Example: give the product for free, give a percentage of sales to the customers
    - Some *magic tricks* which one can use and may help:
        - "40% rule"
            - At least 40% of potential customers express a strong interest in or a willingness to pay for your product – many products will fail
        - Bounce rate
            - Percentage of visitors who leave your website or landing page after viewing only a single page – or simply go away, if physical
        - Pirate metrics
            - Also known as AARRR (Acquisition, Activation, Retention, Revenue, and Referral)
            - Can help you track/analyze key metrics related to product-market fit
        - Experiments
            - Different product features, pricing models, marketing campaigns
            - Or sales strategies to test and validate assumptions
        - "Wild" marketing
            - Guerilla marketing campaigns, viral stunts
            - Or leveraging emerging platforms or channels to gain exposure
    - Consider the use case of a restaurant
        - Do not open a thousand: open one and focus on its activities
        - Don't interview people if they like your stuff, see if they come back
        - Returning customer is always the best solution
    - "Think global, act local"
    - If you don't do a product people will actually dream
        - People will have better things to do anyway

- 3. Scale (customer creation)
    - Focus on growth after validation with optimization experiments
    - Focus on problems which do not scale and then after having solved them, measure growth obsessively

The steps are comprised below:



Look at problems with different perspectives, which is not the one you started with:

- Do not code; to us computer scientists it's a natural thing and it's a plus because many are not able to do this – develop alternate skills, even soft-skills
    - AI will replace coders anyway; so, develop your "human side" at last
- Go talk to people and empathize with them
- Adjust things along the way

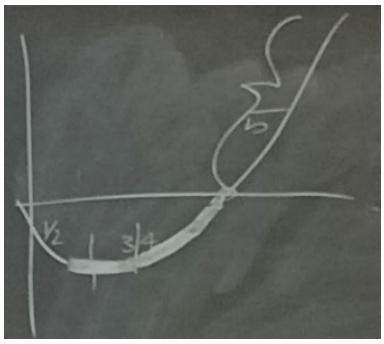
In a startup, different phases are present (this is the way we operate for our project also):

(1) Problem validation
    a. Root cause
    b. Questions
(2) Solution validation and pretotyping
    a. Very light prototyping
    b. They answer the following question: "Is that the right object to build"?
(3) Product validation
    a. Remember: you don't live with dreams, you have to make money!
        i. Capitalism strikes once again, I know
    b. You don't ask if it works, you start asking how to sell it
    c. Consolidate the product
(4) Market validation
    a. No perfect way to reach the market
    b. Many steps
        i. Finding the right business model
        ii. Finding the right price
        iii. Finding the right channel
(5) Scaling
    a. Extending and expanding the business in many terms

Wait a second, they look so similar… Where's the difference?

Written by Gabriel R.

Normally, the life of a startup goes on like this, moving between stages:



You find a pivot:

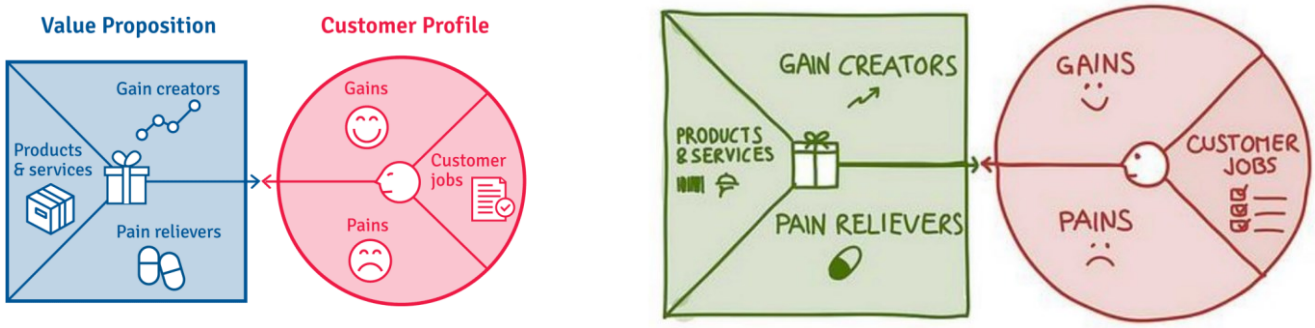
- You *move in a direction* and *suddenly you change it*
- Iteratively changing directions and do something completely different
- Your focus is not maintaining name, slogan, whatever
    - but maintaining a good quality of product
- The perfect product is there, you just need to tweak it the right way
- This is true for small companies because there's more freedom in changing
- Make a new startup already, iterate, go, fail and try again

The steps described above can also be found in the following:

Consider the following use cases:

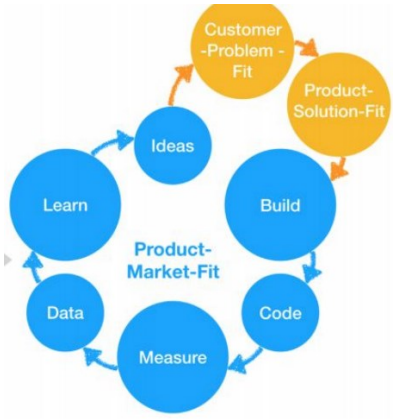
- The case of Elon Musk with Tesla
    - He did a pre-selling phase, activating a page where he was pretending to sell the car
    - It modified a car with a fake chassis and silenced motor pretending to have a Tesla
    - This is going towards the solution validation, with many millions in the pocket
- The case of I'm Watch
    - The first before Apple and others to create smartwatches
    - They had a lot of money because of preorders
    - Unluckily, they failed to deliver the idea, given they were very late in delivering orders and Android Wear/Apple Watch just came to the market in that moment
- ChatGPT first coming to market
    - Nobody effectively used advertising
    - But given it was better than many other tools existing
    - This was pumped via voice advertising and other people using it
    - In 20 days, the whole planet was using it

Ask yourself in the product/market fit; do you have a problem worth solving (i.e. value prop. canvas)?



This starts from asking the right questions but also to find the true meaning of fitting the market:

We can comprise all of this like the following, very close to Agile programming (very short cycles of operation, working piece by piece all together seamlessly):



The principle is <u>test, test and test (again)!</u>

- Constantly *look for signs of activity* (both good and bad)
- Ask customers whether or not what you are offering is something they wanted
- Ask a user to *pay money* for a product is the simplest way *to validate it*
- Test your product, your business theory
    - Interviews are easy, but they are not the only truth
    - They are subjective and most of the time not useful in the long term
    - Look at what people do, not what they say
- <u>Pivot!</u>
    - If it works, persevere it
    - If it doesn't, kill it

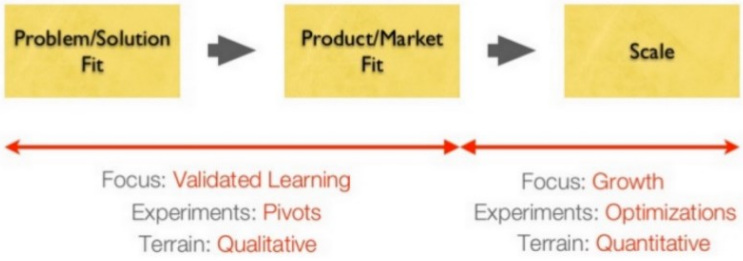
Written by Gabriel R.

No sign *is always bad*, it means you are building a bubble. The point is: do not get interviews, get real data instead.

People lie when they talk about money, whatever you may ask about it. To gather data, people will lie anyway. Focus on the "product/market fit" = being in a good market with a product able to satisfy it.

- We need to make experiments to really understand the market
- What is the product and the model to sell it
- Money wins: the biggest clue that you are solving a real pain point for your customers is that you are being paid for your products or services

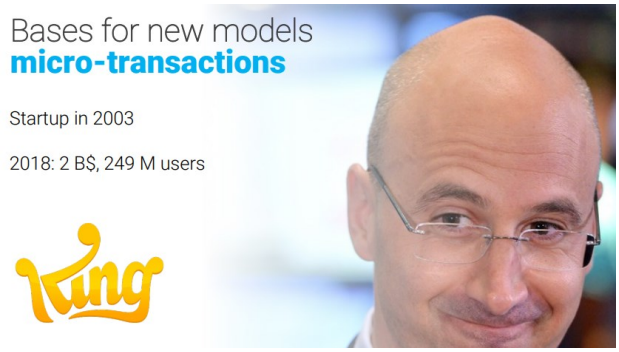
Once again, we bring this image to analyze what to do:

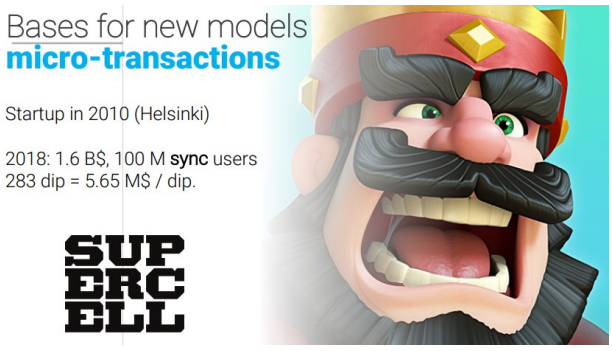


Consider the printer example:

- It costs less than the cartridges, encouraging customers to buy the printer
- Razor and blades model (first launched by Gillette – hence the name)
    - Revolves around selling a primary product (the printer) at a relatively low price or even at a loss
    - With the intention of driving sales of complementary consumable goods (the ink cartridges)

How do companies like Google and Facebook make money?





- Selling user data to other firms in order to have good advertising services
- Cambridge Analytica scandal
    - Improperly obtaining personal data of millions of Facebook users without their consent
    - This data was allegedly used to influence voter behavior during events like the 2016 US presidential election and the UK's Brexit referendum
- Freemium model
    - Almost everything for free
    - Conditions to make you pay anyway in some way
    - E.g. Riccardo Zacconi – creator of King.com and Candy Crush
        - Created a fluid game and a good monetization model

Written by Gabriel R.

        - "Femtotransactions" = extremely small monetary amount being charged for some type of in-game purchases which won – images are from previous years, but they are pertinent to the context
- Consider also different models to get data:
    - YODA (Your Own Data)
        - Individuals should have full control and ownership over their personal data where their data is not controlled/harvested
    - OPDA (Other People's Data)
        - Model of companies that collect, aggregate, and monetize data about people without their consent or control
- In any case: data is what you need in order to validate correctly your product

Let's start from a *problem*: startups don't know about problem/solution fit and product/market fit. The thing is to find the best (paid) way to resolve a problem.

A very important model is the Lean Startup Methodology, which was long used by Toyota: make money with no time and no ideas, in the fastest way possible.

- As Eric Ries (https://theleanstartup.com/principles) states:
    - "New methodology for developing business and products which aims to *shorten product development cycles* by adopting a combination of experimentations, releases and learning"
    - "If startup invest their time into *iteratively building products* of services to meet the needs of early customers, *market risks can be reduced and no need for large amounts for funding and expensive product launches*"
- Iteratively finding the solution

So, product development cycle is shorter thanks to business-hypothesis-driven experimentation, iterative product releases and validated learning. The idea is that if startups invest time in the iterative product production cycle to reach the needs of early customers, they can reduce market risk and circumvent the large amounts of upfront funding, launch expenses and failures.

Consider an example of products here:

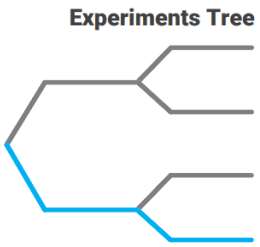
- Microsoft Word
    - Word processor made graphically with a lot of functions
- Notepad
    - The simplest way to write ever created
    - Added fonts/support for features
- Microsoft launched products and tried to see if they worked
    - Ask customers whether they would pay for what they are offering
    - Ask a user a way to pay money = quickest way for validation

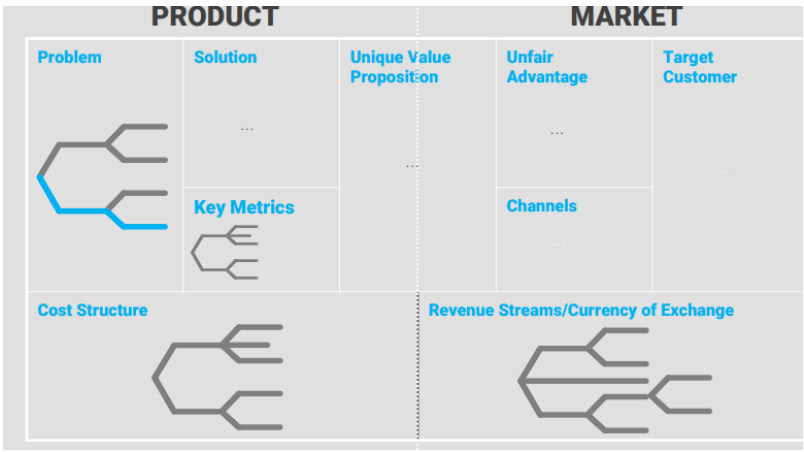
To give more context to everything, here are some images.

Do the “Build-Measure-Learn” and talk to people, to see what comes out of it and learn.

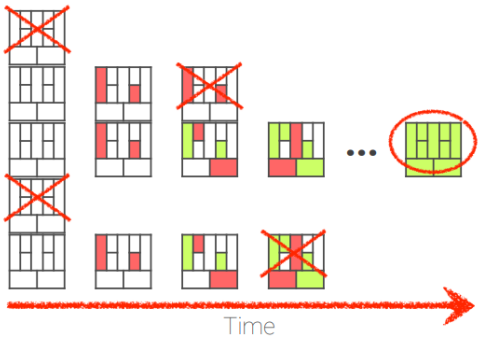
1. **Working Hypothesis** list.
2. tackle the **riskiest ones first** (fail fast).
3. execute **Experiments** to Validate/Falsificate.
4. declare **Milestones (tech or commercial), Timeline, Decision Tree & Expenditure Plan.**

- Valuation: **Substitution Cost, IP Meaningfulness, Comparables.** Not Applicable: DCF





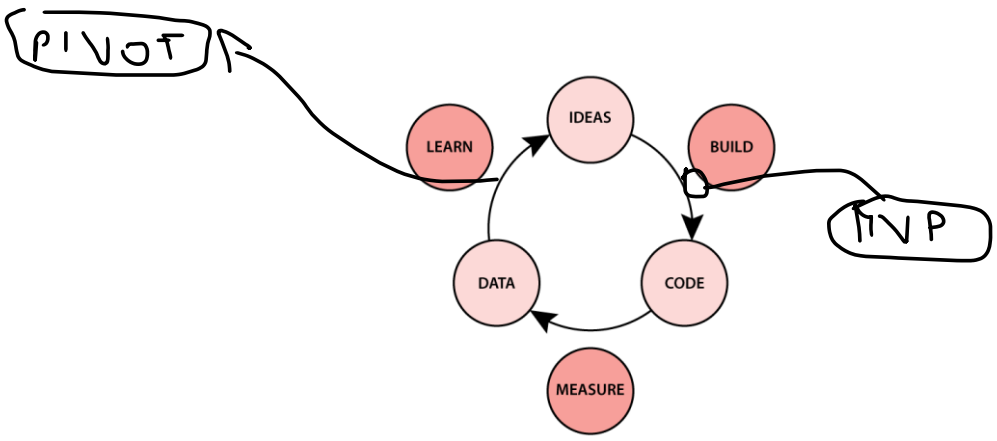
Systematically test the Model(s)



Benefits for You and the Company

1. Identify critical paths and riskiest assumptions at the earliest
2. Fail fast, fail big. The soonest
3. Savvy on resources. Maximize learning
4. Minimize Time To Market
   Parallelize and synchronized R&D and Business Engagement activities
5. Clarify strategy options for partnerships, acquisitions
6. Maximize out of the building stakeholders interaction. Avoid the ‘put something on the shelves’ syndrome

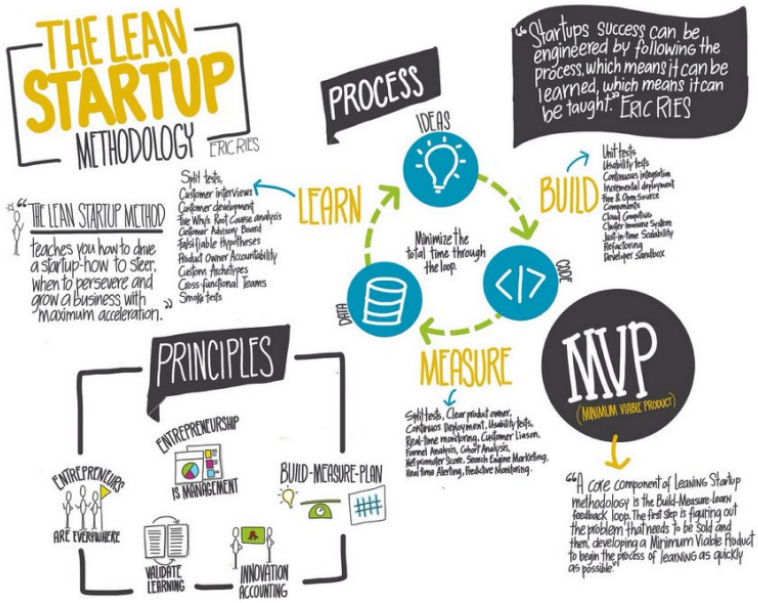
Out of the idea which will be refined, try to find the pivot = new center. Then, look for signs of activity and continuously test.



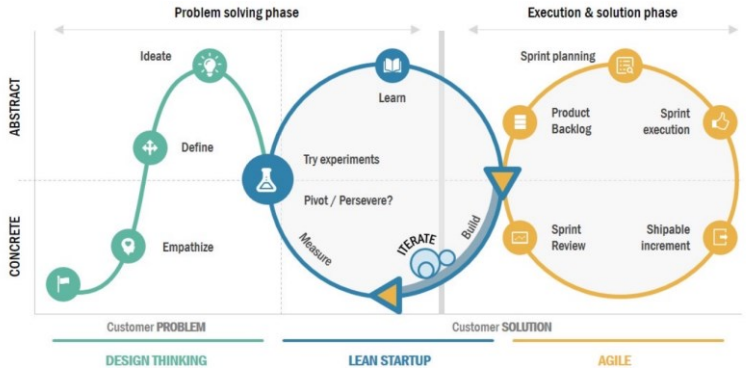
The biggest mistake is staying on a path and then being wrong: just pivot!

Written by Gabriel R.

Here you can see a picture cluttered of stuff for you to have something summarized:



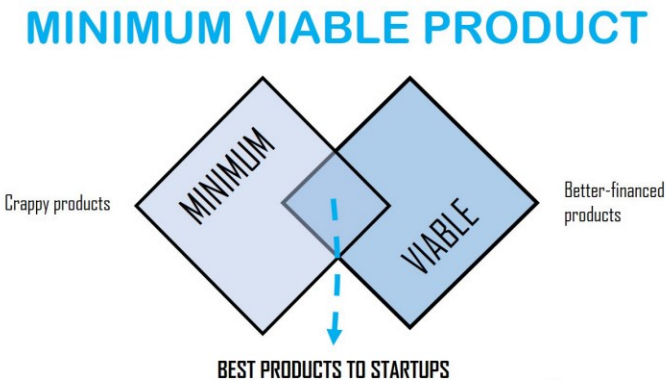
Connecting all the dots, it all starts from the way of thinking; then, constant refining and iterating to reach the execution and relative solution phase.

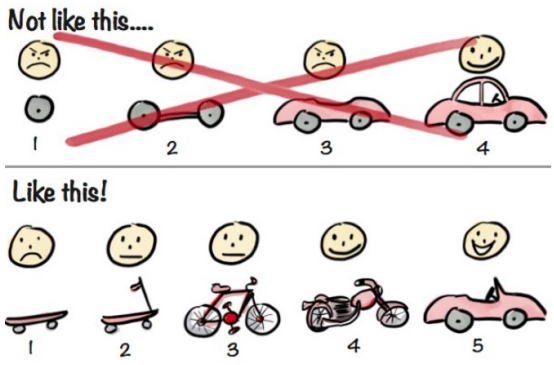


Find your own MVP – Minimum Viable Product: you want to have something fancy or something which works for people?

- It's cool to add stuff to a product just to "make it more beautiful"
- but we waste money doing that, sacrificing the core of the product itself

Specifically, an MVP (Minimum Viable Product) is the version of a new product which allows a team to collect the *maximum* amount of validated learning (from the market) about customers with the *minimum* effort.





Written by Gabriel R.

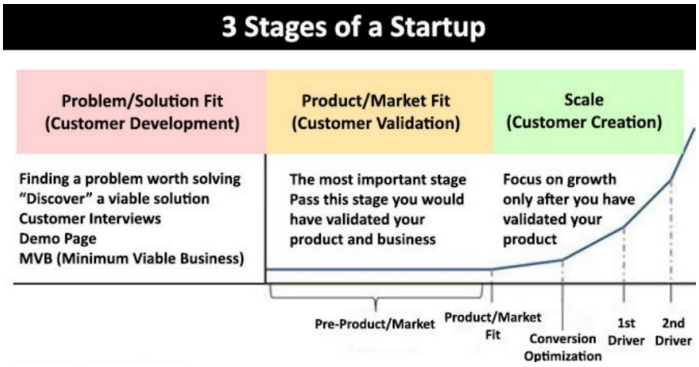
Take risks and go your own way:

- Like applications, maintained and continuously adding features to understand the right direction to follow
- Maximum learning is done by doing, failing and continuously moving on

Bringing your startup to cruise speed means the following: *validate, validate and then quickly scale up*! Once again, remember the steps:

- 1. Problem/Solution Fit
- 2. Market/Product Fit
- 3. Scale 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*.



Moral is: <u>grow at all costs, healthy</u>.

- 1. *Recruit*. *Users*. *Manually*
  - 1-by-1. Door-by-door
  - A/B Test
  - Observe which kind seem enthusiastic. Seek more the like
  - Heavy lifting make them love the product
- 2. *Discern*
  - Understand the difference between *who is paying* and *who is using*
  - *Map needs* and *intentions* of the parties
  - Compound growth rate will (later) do the amaze
    - It measures your investments' average annual growth over a given period
  - 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 – Brian Chesky, found/CEO of AirBnB and Eric Schmidt, former CEO of Google

Possibile reference for this part is present inside the book "Lean Startup" by Eric Ries – I uploaded it on MEGA for you curious people, in case, as usual.

Written by Gabriel R.

9 LABORATORY – PROBLEMS PRESENTATION AND CHOICE

(Some info about that for you to be organized from the start)

Like with students presentation, everyone is joined to talk selected in rows and can broadly discuss about a problem or more than one, then crafting anything which will be valuable for the teacher. He will write ideas on its Word and then document/comment each one with us to craft some ideas for the challenges.

After gathering all the problems, we will have a week to give problems tokens to evaluate their importance and then teams will be formed. On the interviews:

- We need to interview real people (the market segment)
    - we can get their name, but they can be anonymous
- There's the need to gather real data (statistics, national data, databases, etc.)

On the problem selection day:

- We will get called by name and we will assign the number of tokens to the selected one
- If you are not present, no worries, you can give them the lesson later or there will be time to get you added to a team later on
- If there are multiple people (aka, more than 3) on the same problem, they will be moved or decide on which specific problem to move upon
- Basically, if you put 15 points over a problem, you are basically guaranteed to form the group, so choose wisely

After assigning the problem, we start making interviews.

- We will discover things we never thought about, and these will be asked in the exam
- We can also ask the professor in case you want to talk to specific people, coming to him with aggressive interviews
- Our college ID will be our presentation and our tool to talk to people

Once the group are formed: (will take multiple lessons, probably between a theory one, 2 or 3, so be prepared)

- The professor needs to know the name of the startup and the CEO
- 4 people is not a problem
    - Having 3 is preferrable anyway
    - In any case, if others don't find other groups to join, it's not a problem gathering them

In the final presentation:

- The CEO starts the presentation giving the group features
- He also ends the presentation saying what we need
- It's important to know how to present
    - You should not prepare
    - You should know your stuff so well because you know
- Follow the slides format

Written by Gabriel R.

Acting as a SEO does not require to know, but instead:

- It requires to take decisions
- Seems like being the teacher
    - Time experimenting is important
    - one just doesn't know and going ahead he finds its way
- We lie the right way:
    - Doing pretotyping to see what happens

Contact the professor in case you want to talk to a specific person, he will be more than glad to help you.

Personal notes here

I chose the problem of "Storing personal digital documents". Basically, with another 2 colleagues of mine, we all put 15 tokens on that problem, so to be sure to form the group together. Also, another one joined us having put 8 tokens (the classic one of a big group which doesn't work, yay!).

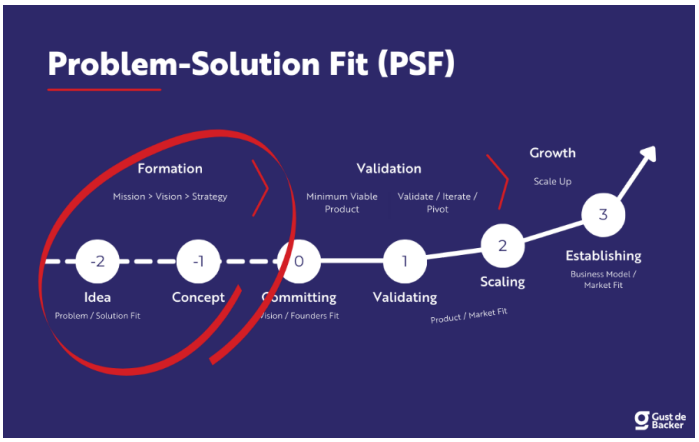
In any case, once you start doing the group, try to follow the above steps: problem/solution fit and find your audience. Start doing interviews: you will soon realize you will have to rethink or look at your problem from a different perspective in order to correctly refine it.

Other questions you may want to be answered:

- Do we need to do the problem solution validation?
    - Nope, it's enough to do the problem solution fit, but it strictly depends on the nature of your problem
- I don't know what to do – how should I go ahead?
    - Talk with the professor, he will give you guidance and be prepared at least in the initial phases to be confused and just not work as you should/would do

10 LABORATORY – PSF (PRODUCT-SOLUTION FIT) AND PMF (PRODUCT-MARKET FIT)

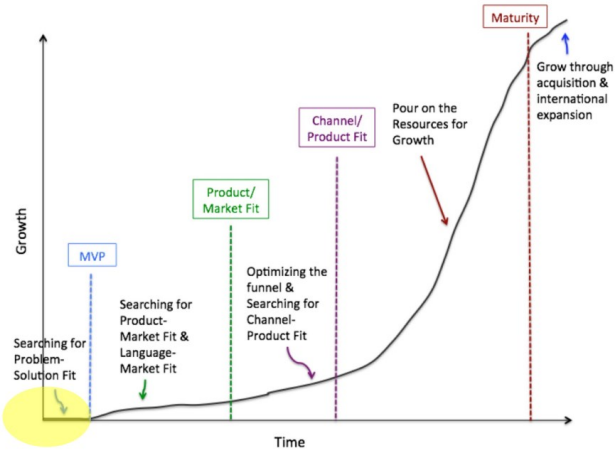
This is a lesson to tell you *exactly* what you should do – assembling your teams/PMF/PSF. Suppose you are born as the amazing Zorpoft… annnd, so what's next?



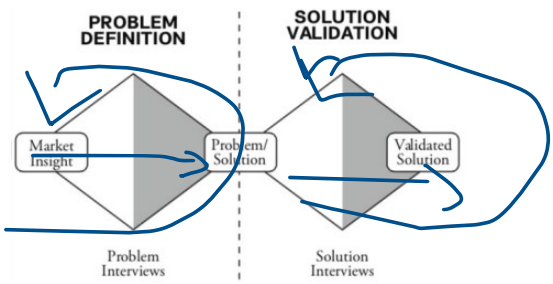
Basically, at a high-level, it should work like this:

- Find a name
- Start from the idea
- Do the problem/solution fit
    - Takes a couple of weeks or even a month

Level 1 here is the *problem/solution fit*:



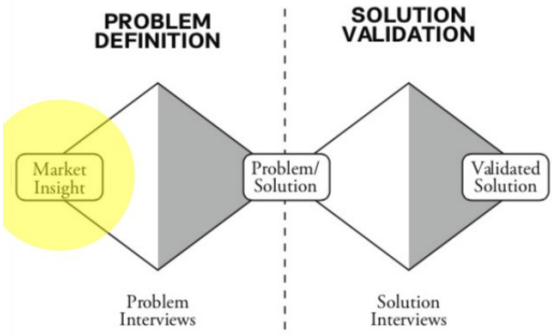
Again: *problem/solution fit validation* – being sure the problem you identified is the real one and the solution is the best one. Use the double diamond (path is not linear and is iterative):



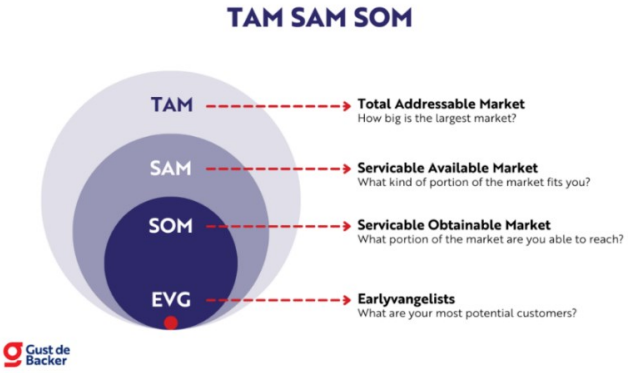
Written by Gabriel R.

Do the *problem/market insight* – go, research and divide the tasks, putting head into the market (insert image of double diamond here):

1) Study
    a. Intuition is blatantly wrong
    b. Where do you get data? Determination and creativity
2) Read some articles/reviews
3) Access some forums/social platforms
4) *Define the market size*



Problem market sizing is a specific case study where you must estimate the size of something with no (or little) data available and relies upon the following terms:



The terms are commonly used in this field, but the latest (EVG/EA) are interesting to exploit a possible niche not even touched yet.

Where do we find data? *Depends on the context* – helps making a difference in the presentation, meaning the group has studied and know his stuff.

- ISTAT/EuroStat
    - Search/get lost/learn
- University/Observatory sites
- Organizations/Societies
- Open data
- Forums/Social networks
- Amazon/Google/Trustpilot reviews

Whenever possible, search for *data*, don't take *opinions* and if you still want to proceed to do *interviews*, do the following:

1) Interview people in relevant environments.
2) 15-30 interviews minimum, stop when you start learning nothing new.
3) Direct interview, live, no videos. Start with small talk and relaxed atmosphere. 30-50' max.
4) Explain why you're doing the interview. Smile.
5) DON'T SPEAK. LISTEN.
6) Do not ask direct questions – prefer to learn the customer details – life, habits, preferences.
7) Define very specifically the job to be done.

Written by Gabriel R.

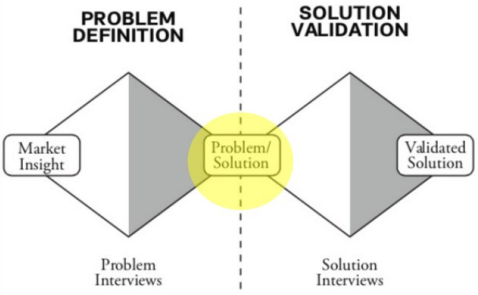
8) Gather numbers whenever possible (i.e. «how important it for you, from 0-10, to resolve this problem?»)
9) Ask how they resolve their problem now and what's good in their current solution and what's bad.
10) Watch out for the confirmation bias!!
11) Understand if you have found an Early Adopter!
12) Doing good interviews is art & magic, not mechanics

Also, remember to not only be able to talk, but also to *listen*:

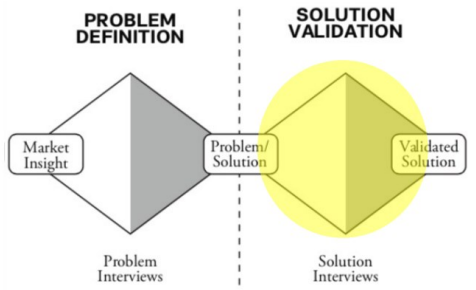
- Remember to actually get in touch, smell the problem, be inside of it, empathize
- They have problems now, not tomorrow and do them in relevant environments
- You need to learn something new, otherwise it's time lost for both
- Find the *job to be done*, which is not something direct, but something more abstract in which to go to that direction
- Be careful how you pose questions, but we can suit to the context and do whatever
- Think about the solution, make up your mind and *destroy it*, then iterate
- If you have particularly good data, you wouldn't need interviews

Refine the problem (*problem/decision*) – modify/repeat/proceed to solution and take a decision according to the following:

- Did you find a good (40% rule) problem?
- Is it adequately refined?
- Does it stand out from the others?
- Are you at the root cause (5-whys) or not?
- Do you have the impression that a different problem may be of higher impact/performance?



Do the *solution/pretotyping* – once you start think about a solution you should try ideas, and this is where our STEM "behind the monitor" nature comes out.



Once you have an idea, pretotype it (aka not coding, but fastest way to prototype):

1) Build
2) Test
3) Gather data
4) Learn

In the end: decide (modify and repeat or pivot or close)

Written by Gabriel R.

What could pretotypes be? Remember pretotypes are much short-lived. There are several *classes* of pretotypes, starting from the *obvious* ones (you can see a comprehensive summary here):

- Pitches
- Mockups
- Fake UIs
- Renderings
- 3D prints

This may be a fake door – "try and see what happens":

- Test the Initial Level of Interest (ILI) in a yet-to-be-developed product or service by creating artifacts that suggest that the product exists and it's available to see if people would buy it
- *Example*:
    - Put *McSpaghetti* inside McDonald's and test the market
    - Consider Kickstarter – crowdfunding trying to see "if" people will buy something
    - It's the same with preorders with online shopping

Why not making a façade – "fool, look here!":

- Test the Initial Level of Interest (ILI) in an existing but not yet broadly available/scalable product or service by creating artifacts that suggest greater availability (or scale)
- *Example*:
    - Would people buy used cars online (in late 90s)?
    - Bill Gross bought some ads in a newspaper advertising *CarsDirect*, a new way to buy cars online
    - He had no car inventory, but created a simple website to see if people would actually go for it
    - When people clicked on a "buy" button, he bought the car at retail and delivered it to the customer
    - Over a week-end he sold a few cars. He lost money on every transaction but validated the business model for his idea.

Another interesting thing might be the use of YouTube – Movies – "surprise 'em with special effects!":

- Through the "magic of movies" you can make products that don't yet exist come to life and see how people react to them: Are they intrigued? Interested? Will they sign up to learn more or, better yet, commit to buy?
- *Example*:
    - Google Glass was first introduced to the world via a YouTube video that showed not what the actual glasses looked like, but what the world would look like through the glasses

Written by Gabriel R.

- People who found the vision (pun intended) of *Google Glasses* compelling had an opportunity to sign up and pay $1,500 to receive an "Explorer Toolkit"
- This way, before producing a single consumer-ready Glass, Google was able to gage Initial Level of Interest (ILI) and gain other valuable feedback

Do a Pinocchio – "think stupid, it works!":

- Create a non-operational version of your product and use your imagination to pretend that it actually works to see if and/or how you would use it
- *Example*:
  - Jeff Hawkins created a wooden version of the Palm Pilot to test two key hypotheses:
    - Would I carry something with this form factor (i.e. pocket-sized) around?
    - What would I use it for?
  - He learned that the form factor was just right and that he would use it primarily for calendar, address book and simple note taking

Use the mechanical turk – "fake it 'til you make it!":

- Before making a major investment in designing and building a complex mechanism or back-end, consider using human skills to simulate the desired outcome
- *Example*:
  - IBM tested if and how people would interact with a speech-to-text computer by simulating the actual hardware and software using a hidden typist
  - The users, were given a microphone and a monitor but no keyboard; when text appeared on the screen they thought that their commands were being processed by a computer, not a person

One can use a one-night-stand – "o la va o la spacca!":

- Offer a pretotype version of you product or service on a very limited time basis to see if there is any interest before making any any long-term commitments
- *Example*:
  - Sacrificing their own apartment for one night, *Airbnb* founders created a simple website in which they offered an alternative to hotel rooms:
    - An air-mattress + simple breakfast for $80/night (a bargain in San Francisco.)
  - Much to their surprise, 3 people signed up very quickly and they collected $240 on their first night. Airbnb is now valued at over $10B

Written by Gabriel R.

A good way might be trying to be provincial – "think big, act small!":

- Before committing to launch a new product or service formally and publicly on a large scale, test it in a smaller, more private and informal context to see if people are interested in it
- You want to see if it works in small scale, then it might work well somehow
- *Example*:
    - *BestBuy* pitched a tent in one of their store parking lots and advertised locally for a new service (tentatively named NextPlay) to see if people would be interested in swapping old electronic gear in exchange for store coupons
    - It worked, and the service is now available in all stores (and not in tents!)

Be smart: use the infiltrator – "Metal Gear Solid way of sneaking into others!":

- Take advantage of the customer traffic in an existing store (brick-and-mortar or online) to stick an artifact of your idea (it could be a one off, even an empty box) on the shelves to see if people would buy it
- *Example*:
    - With a used employee shirt bought on eBay to look like an *IKEA* worker, Up well Labs' founder sneaked in a few prototypes of his new product into an IKEA store and put them on display to see if people would buy them
    - They did! He proved that his new product would sell in a store … without owning a store

You can also do the impostor – "wait, that's illegal!":

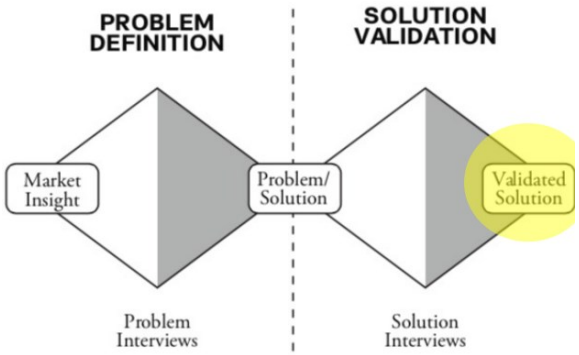
- Use an existing product or service as a starting point for your new product
    - Most new products or services are not completely new or different from existing ones
    - Many times there are other products and services that are close enough and, with some work, can be used to impersonate the new product you have in mind
- *Example*:
    - *Tesla's* Elon M usk took an existing car (a Lotus roadster) that was close enough to the all-electric roadster he had envisioned, ripped off the internal-combustion engine, put an electric engine in it (along with slightly different body) and drove it around
    - Now he had an artifact, a really sexy and fast one, to show around.
        - People were obviously interested in the new car; but would anyone be interested enough to buy one?
    - He needed data not opinions. So he asked people who expressed interest if they were interested enough to write him a $5,000 deposit check to be on the waiting list for one

We've already talked about this, but consider the MVP (not Most Valuable Player, but us Tullio survivors know this, am I right?):

- Create a first iteration of your product with the absolute minimum set of features that would make it valuable and useful–at least to early adopters
- *Example*:
    - The first version of the *iPhone* did not support cut-and-paste, it offered a very limited number of apps, it did not support notifications or the über-popular Microsoft Exchange email back-end; and it required iTunes to activate/use it
    - But people wanted it so much that they did not care about the missing functionality–a great indicator of interest
- A lot of examples can be movies or TV series
    - You try and see if it works
    - Then capitalize it! (capitalism, dam you again)

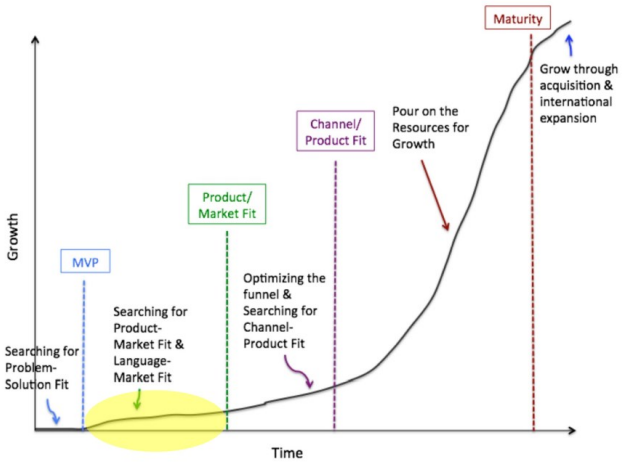
There is the *solution/decision* phase, so at the end of each solution validation cycle - ask to yourself:

1) Did you find a good (40% Rule) solution?
2) Is it adequately refined?
3) Does it stand out from the others?
4) Did you find real interest in it?
5) Do you have the impression that a different solution may gather greater interest?
6) Did you get pre-orders? Emails?
7) Did you find early adopters?



If you get there, you (think you) have a Problem-Solution Fit. After the MVPs, second phase starts, so the Product/Market Fit - in other words, you have beaten the Level 1 Boss – you can now enter Level 2:

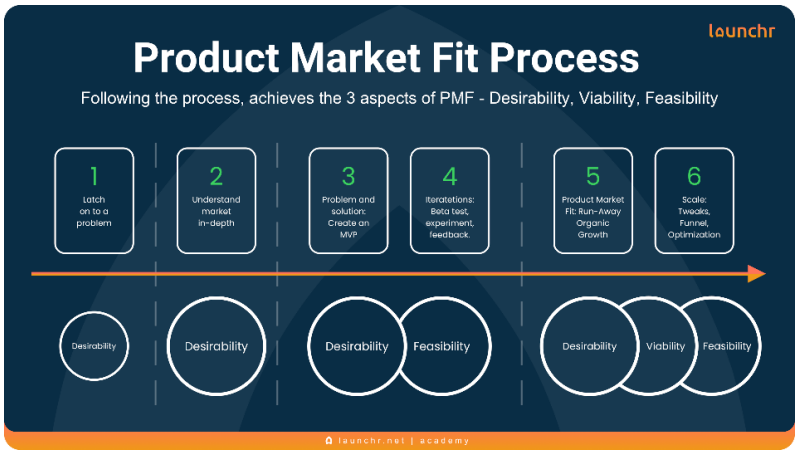
- People will buy if they are really interested in something
- The desired MVP is in the descending phase of the J-curve



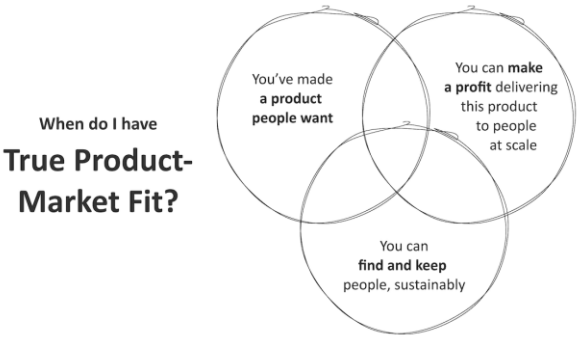
Written by Gabriel R.

We are looking for the missed opportunities steps:

Keep it simple: take the assumption and make it work. If it works, it will be good. We are working if the market wants something. When we work on the money, we have to spend it well.

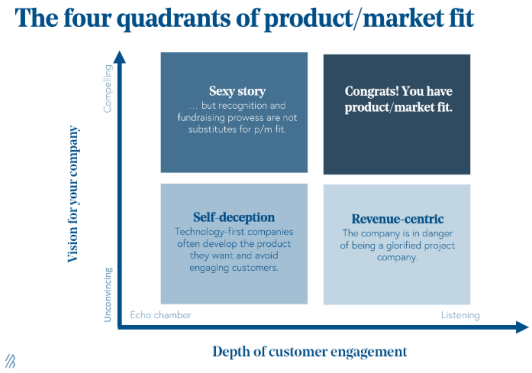


Ask yourself the real questions: deal with stuff the right way.



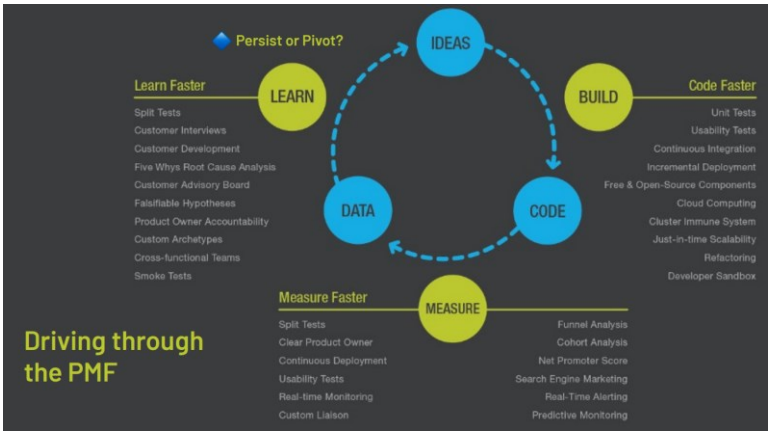
Written by Gabriel R.

It's a mashup of features, useful stuff and people engagement over these sides:

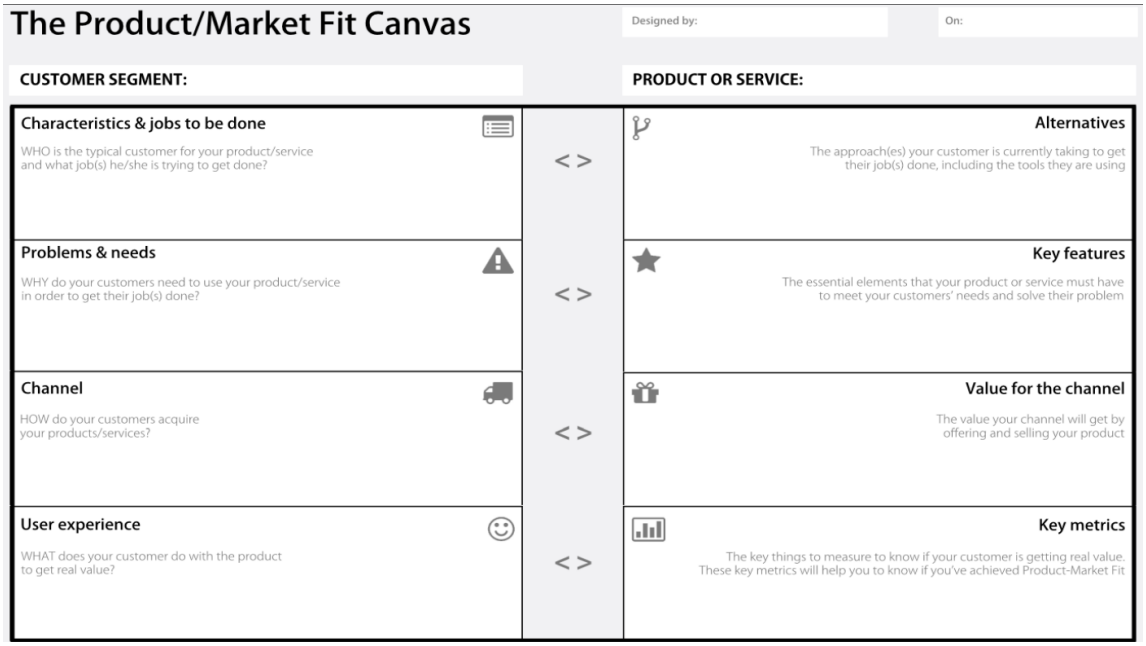


Money is the measure of the problem resolved because we are changing the world, bringing process to the society. You have to do it in very quick time with very few money. We want to persevere over an idea, working continuously.

- If something works, you will not explain anything else to people
    - They will just send to other people
- Next iteration and going on with MVPs, at the very end you have the product
- Making money means having something which people wants
    - E.g., Nike – never said to the market
        - "Just do it"
        - "Think different" – Apple, which studied the previous one



Lastly, if you want to view it with a canvas, here you go:



The template is divided into two segments: a customer segment and a product segment.

- The customer segment helps you with an initial analysis of your app's target audience
- The product segment helps with analysis after the launch, when you evaluate how your app fits into the overall market

An example of application of this template might come from having a look at the source of this image.

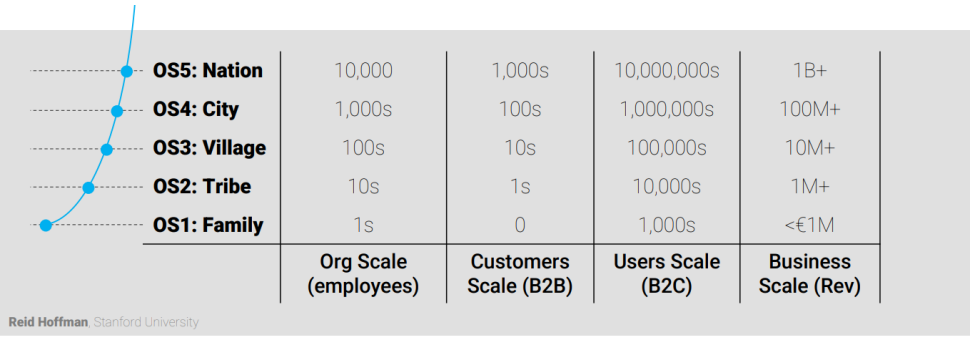
Written by Gabriel R.

11 LESSON 7 – SCALING UP (GROWING UP)

(I think this is more of an in-depth slide, because this year we definitely didn't do this set. In any case, notes are present for the sake of completeness and because they are there in the Moodle, so theoretically are part of the exam – not very long given they are basically a transcript of the slides)

In the scaling phase, we focus on the growth of the product, previously validated thanks to optimization experiments. Many organizations operate as if they're frozen in time, avoiding changes in all ways possible. Don't, please! As your venture grows, it crosses different organization scales (OS), able to differentiate and identify different stages of growth. Advice can't be applied generally.

It's essential to identify these stages and adapt processes accordingly. What works at one stage might not work at the next.



	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

Reid Hoffman, Stanford University

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 scales fast on the cost side: *low* priority
- What doesn't scale effort and size: *high* priority
- Prove it in a deliberately narrow market
  - Instead of *trying to appeal to a broad audience* from the start
  - *Focusing on a niche* or *specific segment* allows you to concentrate your efforts and resources more effectively

Written by Gabriel R.

Quoting different figures and their ideas:

- Eric Schmidt, former CEO of Google
  - "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"
- Brian Chesky, Founder and CEO of AirBnB
  - "Don't focus on scaling the numbers until you have people engaged with the product"
- Clayton Christensen, HBS Professor and Disruptive Innovation paradigms creator (1997)
  - "Be patient for growth but impatient for profit"

Can you create a product that people use every day? This is called the *Toothbrush test*.

- Larry Page, CEO of Alphabet (the company formerly known as Google), has a quirky way of deciding which companies he likes.
- When he looks at a potential company to acquire, he wants to know if the product is, like a toothbrush, "something you will use once or twice a day"

Focus on problems which do not scale and then, having solved them, dedicate to growth.

Measure growth, obsessively:

- This has to be *frequent* (i.e. almost weekly)
  - While being dedicate and insanely obsessive about that
- Define your KPIs and be qualitative over quantitative
- Consider then different phases:
  - 1. Acquisition - how do users find you
  - 2. Activation - do users have a great first experience?
  - 3. Retention - do they come back?
  - 4. Revenue - monetization?
  - 5. Referral - buzzword? word-of-mouth?

The main takeaway is that scaling up requires a strategic approach, adapting to different growth stages, focusing on user engagement, and obsessively measuring the right metrics. Successful scaling involves a balance of patience and impatience in the right areas and a willingness to challenge processes at each level of scale.

Written by Gabriel R.

12 LESSON 8 – BUSINESS MODELING – BMC

The first thing with being in business is knowing how you make money: "Let's talk about business". Business modeling allows to transform work into money and uses it as unit of measure.

- Typically, in a business talk, numbers are the important thing
- Some typical questions C-ockpit (where all C-level people meet – where "C" is "Chief")
    - "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 wizards business"
    - "Nobody can be considered accountable for numbers that's impossible to create accurate"

The first thing which will be asked is the *business plan*:

- There will be all revenues, costs and margins
    - All the costs of single components is the same for
    - That's why it's the most important thing: this represents you
- This is a document that details a company's goals and how it intends to achieve them
- It's a good tool
    - But for startups we should shift to something more agile and more representing of the risk and of the Agile environment

It's more correct to define it as business guess for startups:

- BPs related to *disruptive propositions*/too much optimistic *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 evolutive requirements, only

The *company valuation* changes overtime also:

- With Discounted Cash Flow (DCF)
    - A valuation method that estimates the value of an investment
    - Using its expected future cash flows
- Or with comparables
    - Used to establish a reasonable price for an asset
    - Based on the prices recorded recently for similar assets

Consider this comparison, relatable with right figure:

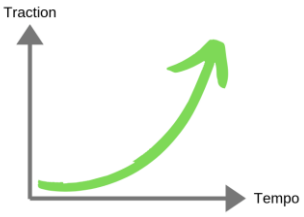
- Bialetti focusing on selling coffee machines (mokas)
- Lavazza selling bags of coffee
- Nespresso revolutionized industry by introducing a hybrid model
    - This was disruptive at that time and has been widely adopted ever since
    - Most notably, Nespresso initially lacked a business plan

Written by Gabriel R.

Again, we should take for granted this is all a guess:

- *Breakthrough propositions* take *unpredictable time* to get adoption
    - Why use an extrapolation 3-5 year formula when dealing with sublinear behaviors, hopefully turning (fast) into superlinear ones sometimes exponential adoption curve?
- Limit the "few point market share syndrome"
    - Instead of being confined by modest initial market share projections, the focus should be on the long-term potential, adapting a forward-thinking

Hopefully get *traction* for a startup – go ahead and move:



- It is a bottom-up measure of the product's engagement with its market
- Basically the phenomenon where the startup starts to make cash
    - The curve of profit begins increasing, generating revenue
- As customer acquisition ensues, attention naturally gravitates towards the velocity of growth

This speaks louder than any top down figure.

- No comparison with any existing product
- Direct substitution doesn't apply
- Current segmentations do not apply

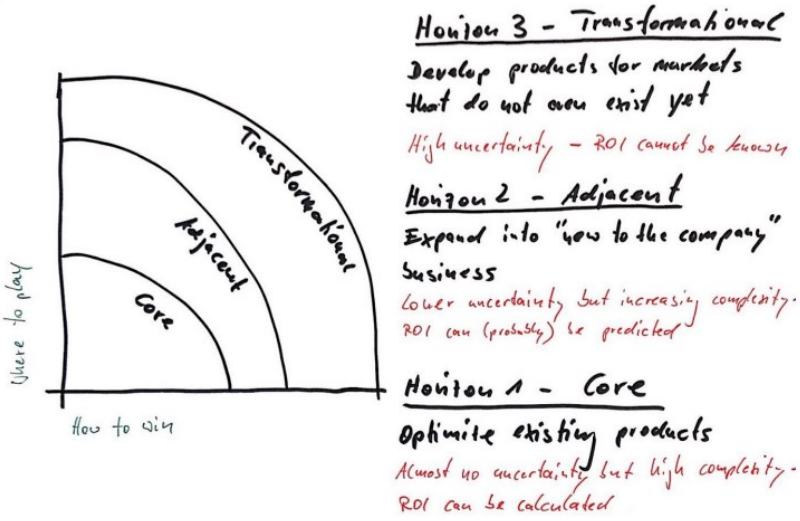
Analysts data are not used alone to guess markets sizes when the product experience will refactor/reshape them:

- The curve is always the same – market sizes cannot be forecast
- But you don't know where you will be profitable – probability of uncertainty

Since a Business Plan 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?

The following is called *innovation ambition matrix*, working with horizons, which are levels of incremental changes measured on the effect on the market:



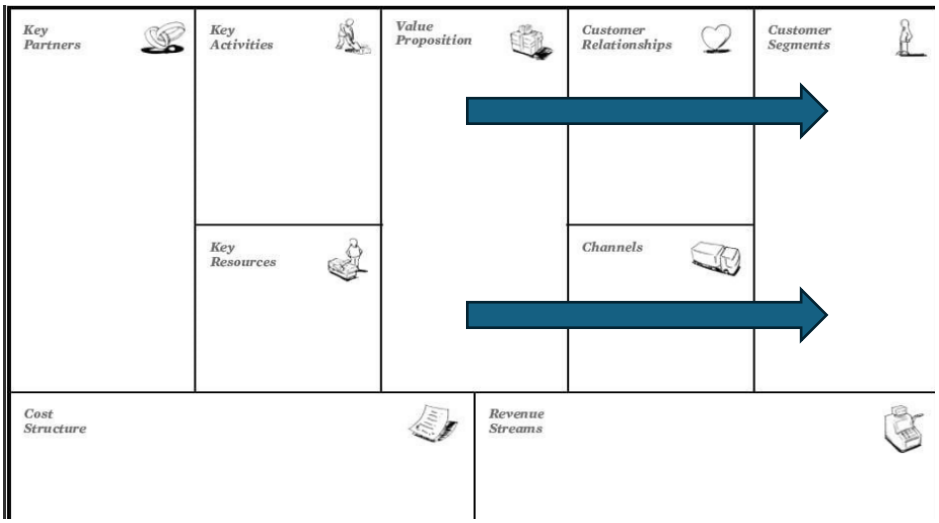
Written by Gabriel R.

We talk about the different levels:

- *Core* – Optimize existing products
  - Already have the products and the customers
  - Knowledge of products and their ROI metrics
  - Low-risk
- *Adjacent* – Expansion in the business and its possibilities
  - Based on existing products, keeping uncertainty low and predict ROI
  - Basically, expanding on a product to do a new one
  - Medium-risk
- *Traction* – Developing transformations for an evolving markets
  - The only way to get these capabilities: test and experiment fast and often, understand the relevant questions you need to answer for the product to excel
  - Only by gaining feedback directly from the customers it's possible to understand and continuously improve work, products, and services
  - High-risk – evolution

You don't want to spend a thousand pages to tell something to somebody –so above may be nice, but it's not enough still – so you clearly present something to others.

- To do this, we use canvases, used to clearly represent concepts visually
  - It's very simple, given you see things directly without wasting any time
- The first canvas used was the one you see here, the business model canvas itself:



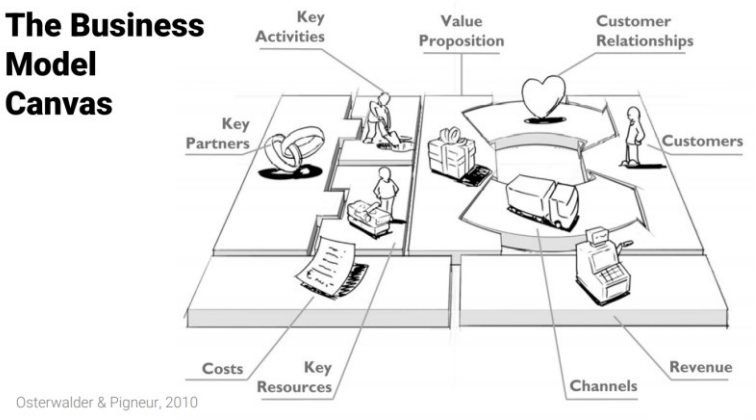
The one used for this course is the BMC, describing the idea precisely.

- The value proposition is the key: within this framework, this serves as the cornerstone from which customer segments, channels, and relationships are derived
- Consider the example of Tesla shops
  - Tesla stores provide customers with the opportunity to test drive and experience their vehicles firsthand
  - The actual purchase process mirrors that of online transactions
    - Maintaining simplicity and efficiency
  - Additionally, Tesla stores offer official support services
    - Enhancing the overall customer experience

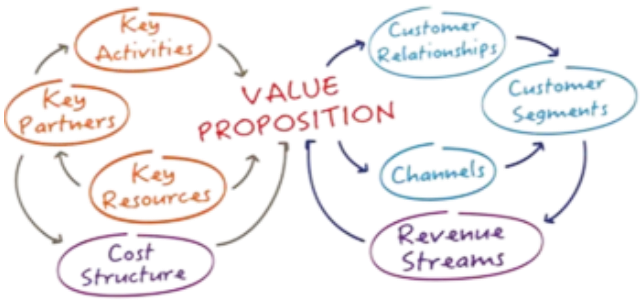
Written by Gabriel R.

- This particular canvas forces you to make the good questions
    - KISS = Keep It Simple and Stupid
        - basically, ensuring clarity and effectiveness in strategic planning and execution

It can be more easily seen from the following figure:



The value proposition is not solving the problem but adding a value for which to solve it a different way giving something different and new – we have no idea if this can be successful, but we try.



Specifically:

- *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/risk reduction, accessibility, and convenience/usability

In the business plan, it's useful to list what to do also in case of key things being lost. For one, consider the following 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.

Consider the case of Grom – ice-cream producer:

- Prior to Grom's emergence, homemade ice cream was not prevalent due to its high cost
- Grom's success stems from its utilization of proprietary ingredients and its commitment to maintaining quality
- Notably, the best-selling flavor, "nocciola" (hazelnut), derives from trees that require years to mature, a practice shared by both Grom and Ferrero

Also consider the customers:

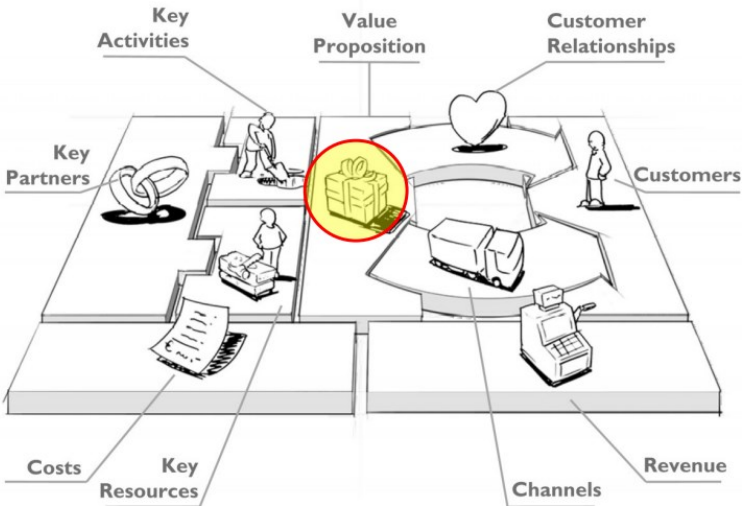
- *Customer segments*: carefully identify and describe who your most important customers are
- *Customer relationships*: what relationship models you are adopting directly with your customers, how efficient they are, cost, do you use direct assistance, communities, automated tools, etc.
- *Channels*: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

Lastly, the 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.)

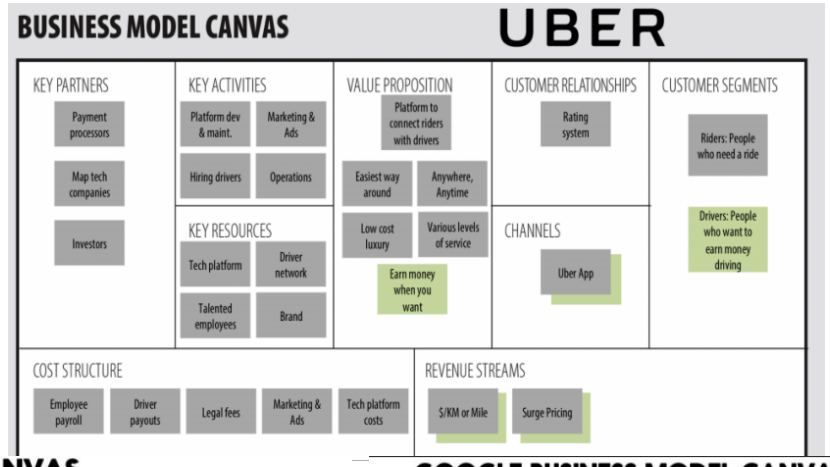
At the end of the day, what differentiates you the most is Your Unique Value Proposition:

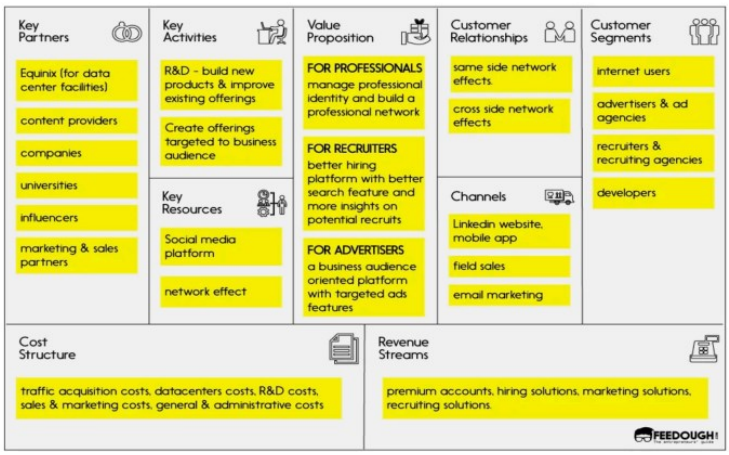
- What makes your product/service unique and provides you with the best competitive advantage through various elements
    - Such as newness, performance, customization, "getting the job done", design
    - Brand/status, price, cost reduction
    - Risk reduction, accessibility, and convenience/usability

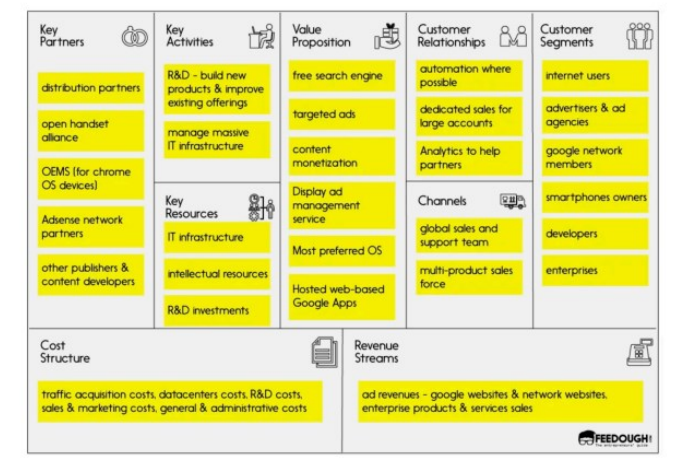


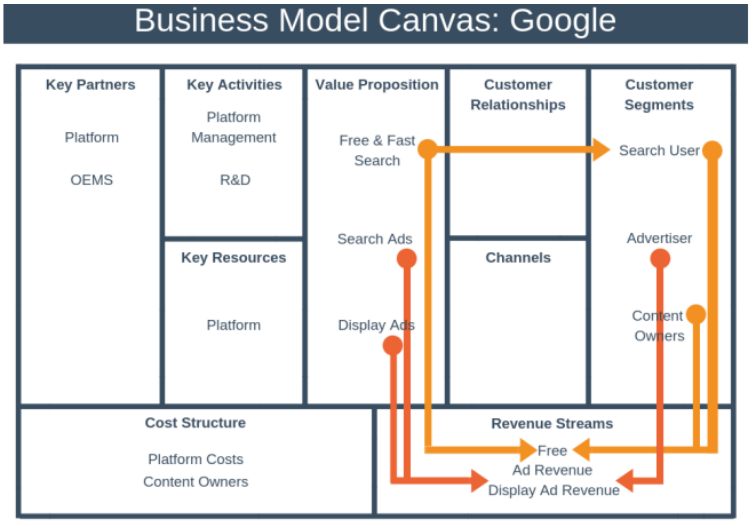
In the following page, some examples of previous years.

Written by Gabriel R.









Written by Gabriel R.

13 LESSON 9 – BUSINESS MODELING – LC

The *business model canvas (BMC)* redirects the market towards a specific direction, which starts from the partners and considers the main value proposition, then understands segments and relationships.

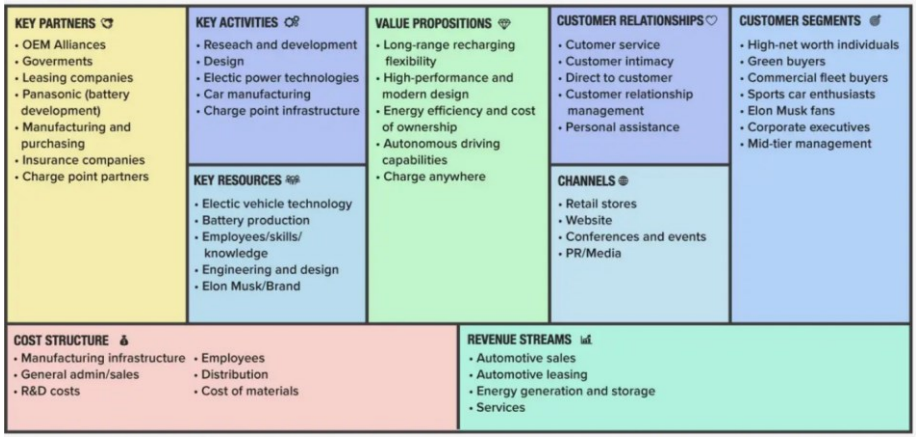
Let's try to do an exercise together – the BMC of Tesla:

- *Customer segments*: Wealthy people, sensitive for the environment, passionate for design and chic people, don't want problems (like to live happily)
    - You don't want to take everybody; everybody means nobody
    - You need to focus on one specific thing
- *Value proposition*: Very innovative product, chic, stylish, next generation mobility, charging network (avoiding going out of battery), long-range
    - They're not selling cars, but charging stations, super-charging stations, home charging stations and batteries
- *Customer relationships*: Tesla shops, Tesla website
    - No car dealers = not sharing the margin with them
    - Same procedure in ordering as one would do in their home, using the official website
- *Revenue streams*
    - Selling cars
    - Selling energy
    - Maintenance
- *Channels*
    - Agents
    - Shops
- *Key resources/Assets*
    - Shops
    - R&D
    - Human resources
    - Elon Musk
- *Key activities*
    - Selling
    - Developing
    - Design
    - Information/Marketing
        - Make it so to enlarge the customer base, arriving to everybody
        - Making people confident to buy your product
- *Key partners*
    - BYD, CATL (battery producers)
    - Employees
- *Cost structure*
    - Employees

This can be a question in the exam; e.g., Gmail and do a BMC. The main value proposition is giving free space and avoiding spam with very good filters.

Written by Gabriel R.

As full exercise, the following is the complete BMC of Tesla:

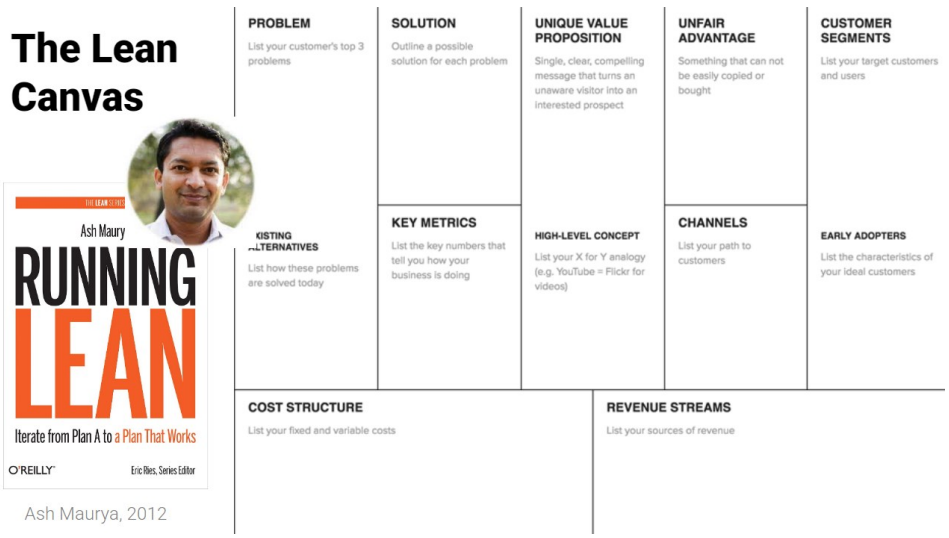


As to conclude with the BMC:

- *Pros*
  - Very intuitive
  - Extremely easy to use
  - Gets you into canvases
- *Cons*
  - Focuses on company structure
    - It 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

Business plans take too long to write, are seldom updated, and almost never read by others.
When you're going really fast and under conditions of extreme uncertainty, you need dynamic models, not static plans.

The Lean Canvas originated as an adaptation of Alexander Osterwalder's Business Model Canvas. The latter had the problem of being poorly suited to the development of a business idea. It was thus devised by Ash Maurya, in his book "Running Lean," as an improvement precisely to meet this need.



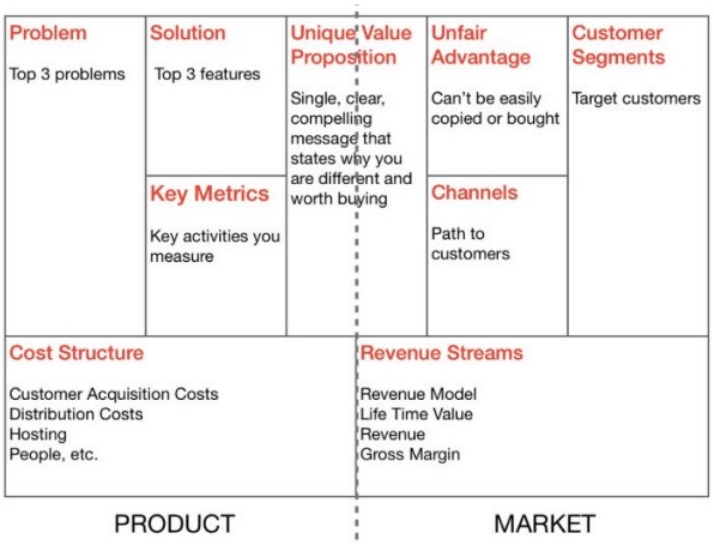
Ash Maurya, 2012

Written by Gabriel R.

There are different pros for this approach:

- Maintains BMC approach and intuitiveness
- 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

The Lean Canvas will be used for exam and exercises, but even in our startup work. As a matter of fact, it provides the focal points as follows, considering it needs to be unique and recognizable:



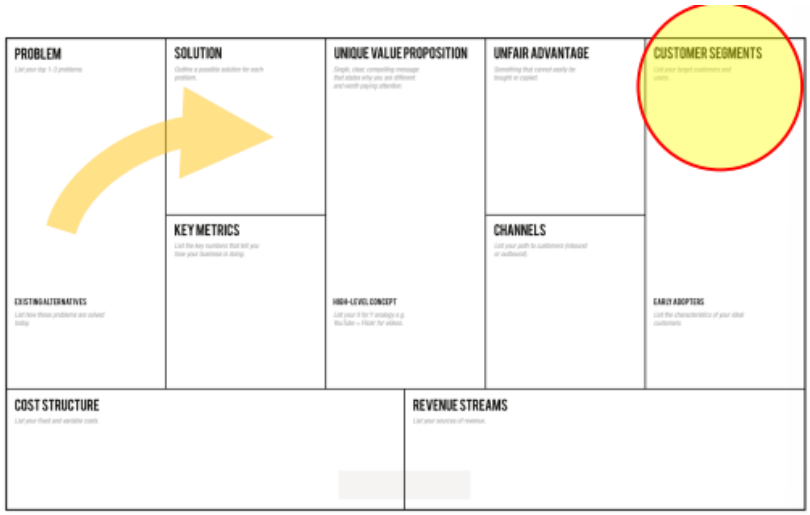
In the above schema:

- Metrics
    - Visitors
    - Clicking "Buy" on the website
    - Paid c/c (credit card)
- The unfair advantage is the "secret" of a startup, something which is not easily copyable
- E.g., Coca Cola and the recipe and prohibits people from copying you (hence, unfair)
    - And then you copy it the better way, so how to not be copied?
- Example of unfair advantages:
    - Patents
    - Monopolies/regulations
    - Secret recipes
    - Personal relationships
    - Brands

The Lean Canvas, derived from the BMC, focuses more on problem-solution fit and finding a crucial secret recipe.

- It tells a startup's story concisely, covering customer segments, problems, solutions, unique value proposition, channels, revenue streams, cost structure, key metrics, and unfair advantage

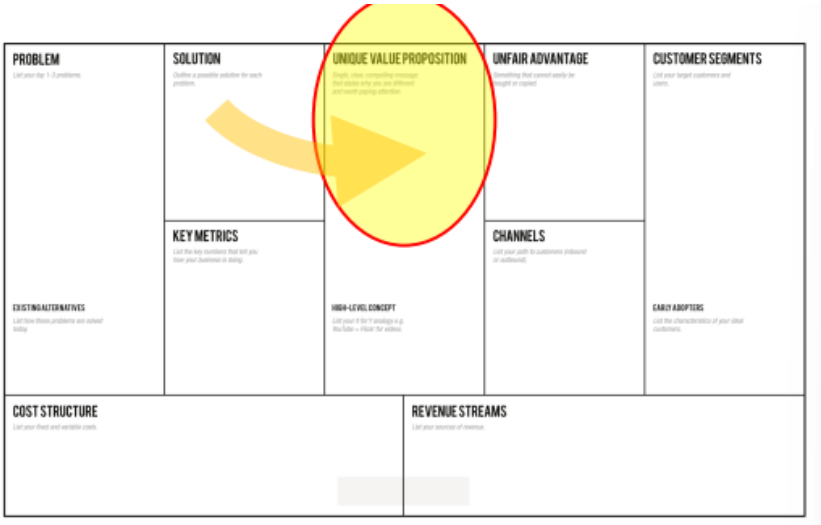
In the Lean Canvas, the *Problem-Solution Fit* can be put very easily, starting from the segments to find the solution:



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 terms of individuals with their lives, works, troubles and tasks
  - Helps to visualize better the problem and the solution

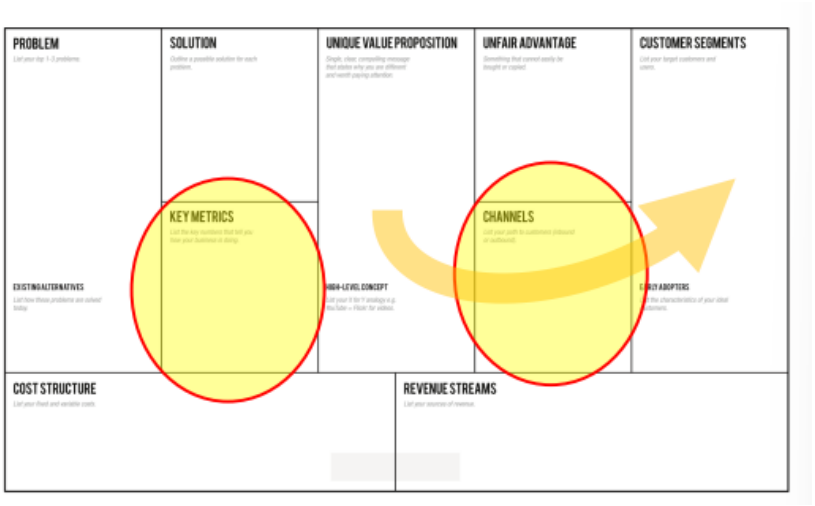
Then, there is the *Unique Value Proposition*:



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.

Written by Gabriel R.

There is the need of *bringing your product to the customers*:



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

Consider *economics and how to protect them!*

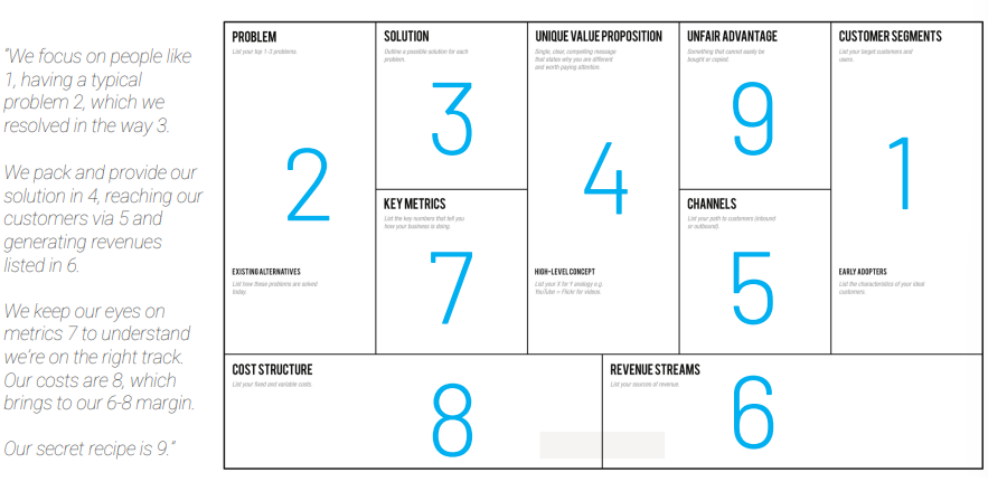
After all, it all boils down to measuring the rate of success of your plan (and we already know that economics are one of the units of measure here) and especially how you plan to protect your business from copycats.

- Revenue streams must be pinned down with reference to channels and your business strategy
    - Costs need to be carefully identified in order to also have your margin
- Last, unfair advantage is what keeps you unique and unparalleled

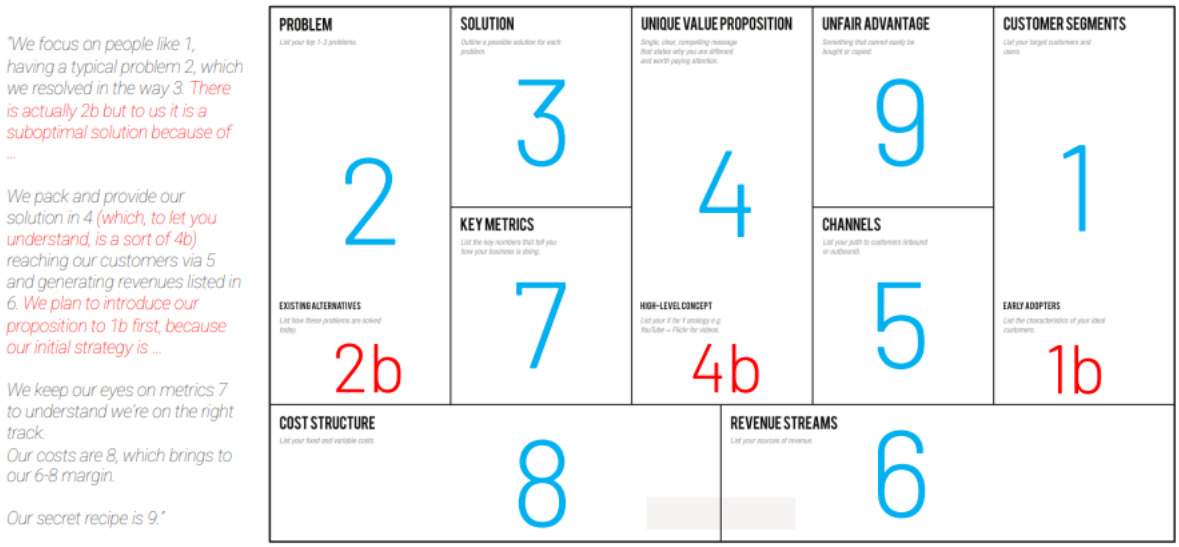
The Lean Canvas *tells your story in a few sentences*. You have the long and complete story of the startup within a very specific timeframe, condensing everything in a single sentence (the pitch).

Written by Gabriel R.

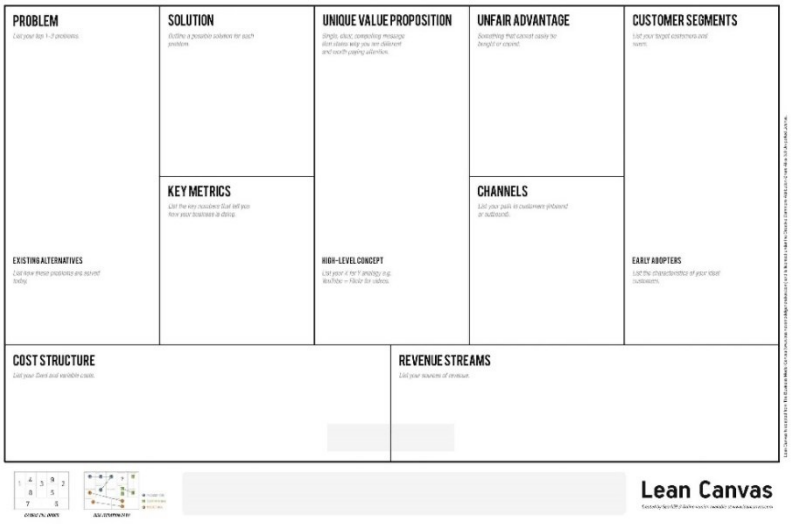
Consider it's advised to follow the not-so-casual numbering order you see here when doing one:



The Lean Canvas *tells your (slightly longer) story in a few sentences*, usable to make it even more detailed.



Let's try to make the LC of Venice Beach context, opening a lemonade booth there:

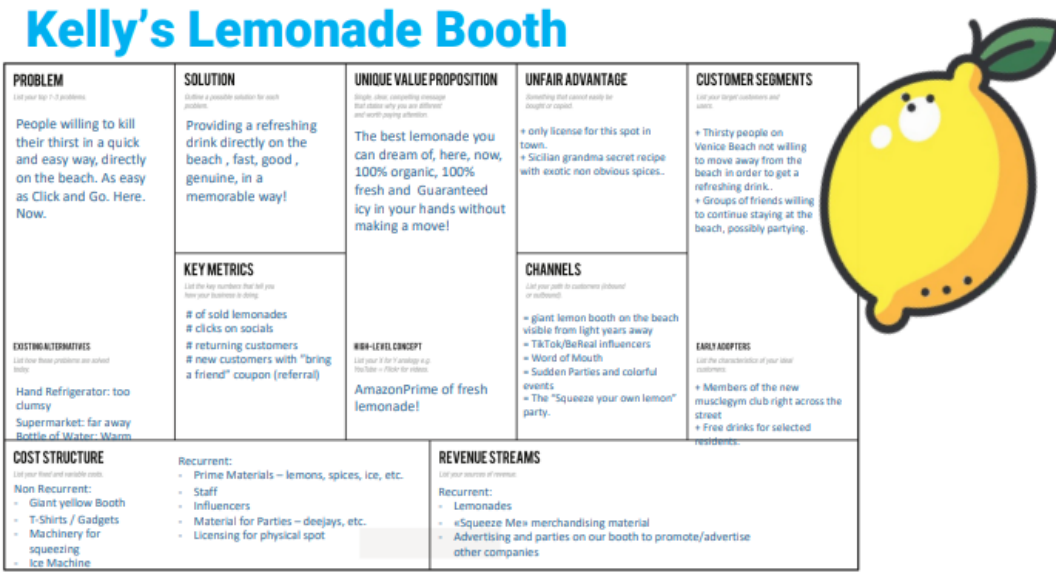


Written by Gabriel R.

We start from the customers:

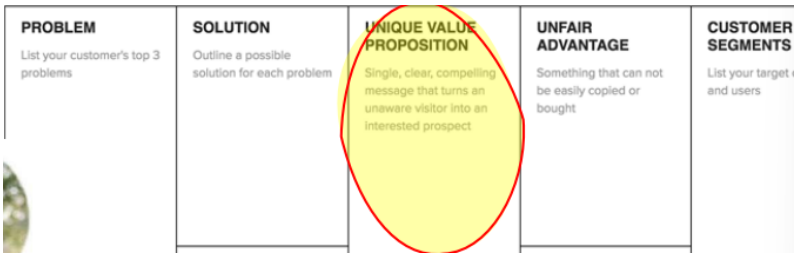
1) *Customer segments*: Thirsty people on the beach willing to stay on the beach
    a. Not normal people: customers organic-oriented/healthy-oriented
    b. You have to almost know customers by name and habits, studying them
2) *Problem*: Being thirsty
    a. Alternatives: bring bottle which is warm
    b. Refrigerator would be good, but it's clumsy
3) *Unique value proposition*: Lemonade: freezing cold, lightweight + chic, organic, 100% natural
    a. Freezing killing 100% natural Sicilian lemonade
4) *Channels*:
    a. Testimonials (very famous people) coming there
    b. Create an event/a challenge to get free lemonade
    c. Deliver the lemonade = "Lemonade at your spot", bringing it to your spot
5) *Key metrics*:
    a. Returning customers
        i. Fidelity cards
    b. Referral
        i. Get the contact of people
        ii. Email/apps/database
    c. "Bring a friend" to the booth/Social networks
    d. Age
    e. Tags/Shares
    f. Activation percentage (how many people came)
    g. Of course (obvious ones – don't tell that)
        i. Number of sold lemonades
6) *Unfair advantage*:
    a. Supplier agreement with exclusive dealers
    b. Grow lemons in our place
    c. License to exclusively have a spot and sell
    d. Secret recipe (to "spice up" the offer)
7) *Revenue streams:*
    a. Selling lemonades
    b. Events
        i. Possibly, with companies which get sponsored by your presence
8) *Cost structure*:
    a. Staff
    b. Lemonade girls/boys (because we like to be inclusive)
    c. Sponsorships
    d. Hub
    e. Social media agents

Completely, we have the following:

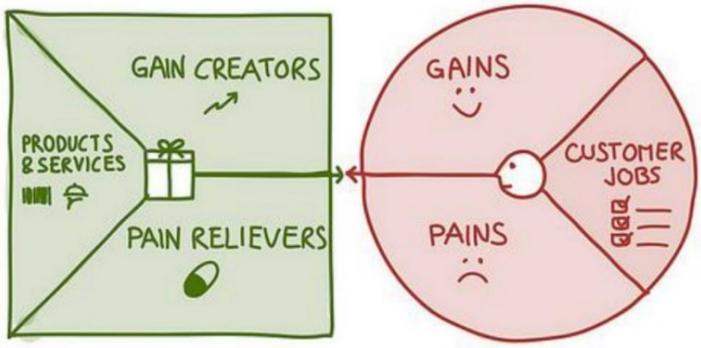


The main thing, like here, is focusing on lemons, not dilute yourself in a million different things. Then you will probably expand the business but keep being focused. You have to find a solution which is better than existing alternatives. Point is, being unique and discover a way to do so the best way.

We want to focus on the Unique Value Proposition (UVP), which is 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.



Once again, doing meetings and meeting shareholders, where do we start? Remember: do you have a problem worth solving?

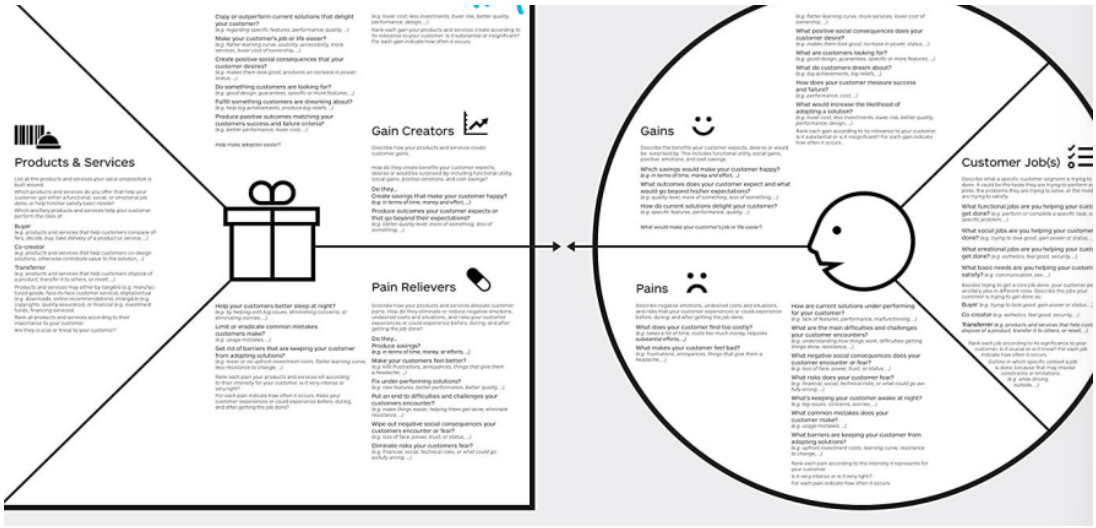


Written by Gabriel R.

Let's see from where to start here:

- Start from the customers (customer jobs) – find their necessities and really dig into that
  - Describe in a very detailed way what the customer does
- Write down the "pains" – what the customer experiences in a negative way everyday
  - Given people have very specific problems, use very specific solutions
  - otherwise this doesn't work; you need to be there to actually understand
- Consider the "gains" - benefits which the customer expects and needs, what would delight customers and the things which may increase likelihood of adopting a value proposition

Consider completely as reference the following: https://www.strategyzer.com/canvas



Lean Canvas Examples

Multibillion companies
Described with the
Lean Canvas methodology

https://railsware.com/blog/5-lean-canvas-examples/

Written by Gabriel R.

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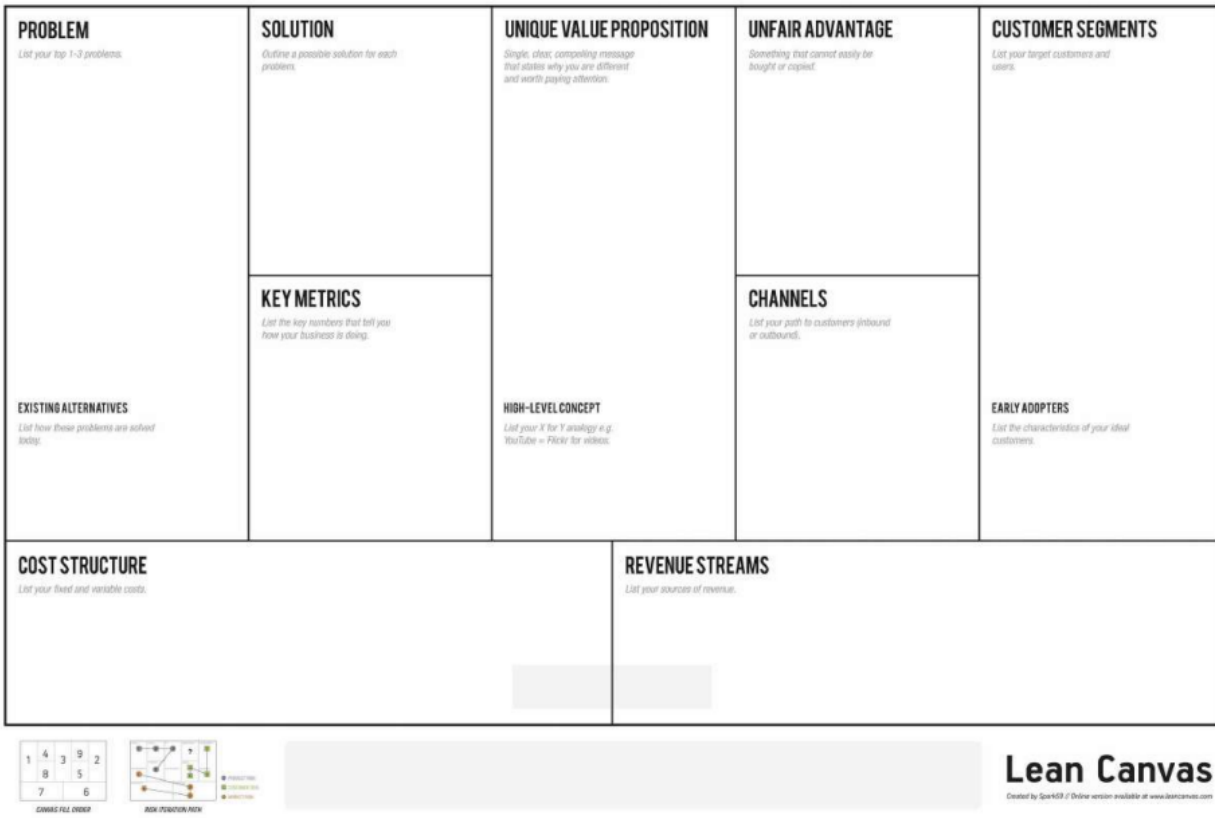
13.1 Example of Lean Canvas (To see that for exam)

Given an exercise of the exam is dedicated on this, I dedicate here a subsection:



I don't think he wants the subsections like existing alternatives/high-level concept/early-adopters.

14 LABORATORY – THE PITCH

The professor says this is the most important moment for a startup and the first impression is very important. Be very careful on what you say. The first time you meet somebody you are exactly like everybody else – obviously this is not true. Nobody is there waiting for you and if they vaguely remember you – you are dead. Don't think this is a PowerPoint course though – it teaches you something moral even, some principles I strongly suggest apart from a stupid mark on the booklet.

You don't get it by nature – you'll learn it. This is like *a job*.

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

There are multiple steps to follow – *once you have*:

- Refined the problem
- Validated the problem
- Found a solution
- Refined/validated the solution
- Analyzed the competition
- Identified your customer
- Defined a product
- Found a market & business model
- Assembled the best team
- Computed costs/revenues
- Built a trajectory
- Put everything in a sustainable way

And feel you're ready to launch – BAM, reality stops you. In the market, it's not like the university – people won't listen to you because they are committed to. Pitching is being not prepared and improvising according to the context – believe me, it's hard, but you have to build enough confidence in what you do you will love it, and nothing can stop you, even the problems. Taking those 5 minutes may be the most important of your life.

There are different ways to spark people's interest:

- We take something people knows very well and do something slightly different
- Provoking people/using bad words/giving something creative and different

You have to explain to all kinds of people what you are talking about – no jargon. There is not "the pitch" – there are, instead, several types of pitches real startuppers should always be ready to *master*:

- Elevator pitch: 60 seconds, few words, extremely challenging – possibly a sentence! – very important to use popular images/brands or mental schemes.
    - Concise : max 1-2 minutes, talking clearly and slowly (no machinegun talking). Even more challenging? A tweet! – this video is a good experience for you
    - Clear: no jargon, kids must understand!
    - Greed-Inducing: must show *real* value
    - Irrefutable: statements *must* be irrefutable

Written by Gabriel R.

- Short pitch
    - This short form pitch it typically 5-10 minutes long and should include some basics about your company
        - Such as the problem you are solving, your solution, your team members, the market you are in, the competition, some financial highlights, goals you want to reach, and info on your founding team.

- Long Pitch: "10/20/30 Rule" (we will use this one)
    - The guidelines for this rule are as follows: No more than 10 slides. No longer than 20 minutes. No larger than 30-point font (so to shorten the concepts)
        - Attention is lost after the first 2 slides probably
        - Even if many groups actually surpasses these limits

You have to say something that to people it's undisputable, something that you don't say and it's actually there. This is something people will probably remember you for, but not because you say them. It has to be done also with the help of some data, to make people easily understand *better* what you are selling.

Wrap up: our startup pitch. Rules for our pitch:

- *10-20-30 Rule* preferred (don't be too strict)
- 20 minutes speech, 10 minutes questions
- Cover all 10 main topics (10-20-30 slide)
- You may be asked your Lean Canvas
- Show you did get out of the building

Consider Guy Kawasaki – first investor of Apple/founder and capitalist of many entrepreneurships when Steve Jobs was young and made billions. He wrote a book called "Enchantment" – which I put on MEGA – which basically describes the "sorcery" of convincing people.

He basically gave a format for 10-20-30 rule (here) with these points:

- Problem (with nice introduction)
    - Do something stupid/funny to draw attention – use more images rather than text
- Solution (with MVP / Demo)
- Business model
- Underlying Magic: what makes our solution unique compared to existing solutions
- Marketing / sales: target/who to sell it to
- Competition
    - Study competitors – do not discard them, because it's a fact
    - You have to engage and show you are better
- Team (why us?)
- Projections / milestones: how was the project divided
- Status / Timeline
- Call to Action (CTA)
    - Ask something directly – action after you tried to convince
    - Most of the CTAs is money, asking funding

Written by Gabriel R.

Also consider Roberto Benigni – he may talk about anything and still catch your attention. There was this example of this guy presenting himself in the course using his favorite books. This works and it's rememberable.

Consider other takes – what the other guys are doing:

Guy Kawasaki Guru & Entrepreneur	**Dave Mc Clure** 500 Startups	**Don Valentine** Sequoia Capital	**Scott Mackin** Barcinno	**Chance Barnett** crowdfunder.com	**Kamil Goliszewrski** Digital Entrepreneur	**Sylwia Gorajek** Co-Founder at Verly
Title	Elevator pitch	Company Purpose	Elevator pitch	Vision / Elevator Pitch	Vision	Name & Mission
Problem	Problem	Problem	Problem	Traction / Validation	Market Opportunity	Problem
Solution	Solution	Solution	Solution	Market Opportunity	Problem	Solution
Business model	Market size	Why Now	Market size	Problem	Product/Service	Product
Underlying magic	Business model	Market Size	Business model	Product / Service	Revenue model	Market
Marketing & sales	Proprietary tech	Competition	Competition	Revenue Model	Marketing	Business Model
Competition	Competition	Product	Go-to market	Marketing & Growth Strategy	Team	Strategy
Team	Marketing	Business Model	Team	Team	Competition	Competition
Projections	Team	Team	Traction	Financials	Financials	Roadmap
Status and timeline	Money / Milestones	Financials	Financial need	Competition	Fund raising request	Financials
				Investment ask		Team

Guy Kawasaki said: tell your "authentic" story – so when people listen to you they trust you. The three pillars of enchantment are *likeability*, *trustworthiness* (create a bond and make something good) and *greatness* (be grand by saying simple things – same thing but cooked in a different way). Some tips:

- Laptop/smartphone OFF – look people into their eyes
- Make the people you are pitching about your whole life it's there. Focus on that.
- Study your audience upfront then make something simple to catch up with them
- Audience first!
    - Who? What language should I use? What's their story?
    - Why are they here? Know your audience in advance! And talk to their language
    - You are one of them and "one of the monkeys" – yes, I can confirm this is how it works

Be coherent and have a solid *structure*:

- Your narrative, even if simple, MUST have a structure
    - Both visual/texture (colors coherent/words & figures done the right way, etc.)
    - This reflects the coherence of being a team
    - It seems stupid but gives you credibility
- Something which may not be seen, but that makes the difference
    - Giving a «fluid» touch to your speech

Have a *clear theme* a.k.a. *remove* the non-essential.

- Which brings to the real problem: know very well what your *core single key* message is
    - Don't tell everything, tell only the important things
- And again, knowing your audience helps

Hook them early! People will fall asleep and there is no right trick to hook people immediately.

- Useless details and introductions will kill you

Written by Gabriel R.

- Start with an unexpected boom. Get their full attention
- Do something they will remember, which, given the event, is very tough

The good pitchers tell their stories merging them with the histories and the program – storytelling:

- Show a clear problem (remember the Hero's Journey)
- Show a conflict, a struggle
- Provide a clear solution, demonstrate a clear change
- Show and provide passion and let people be enthusiastic about changes
- Your 20 minutes could be a VERY memorable moment in your life
- Craft them like an artist with a masterpiece

The best pitches *don't tell but show*!

- Never *ever* make any qualitative self-made statements!
- Use irrefutable numbers and cite verifiable sources. Always
- Be straight in describing the problem with numbers, graphs, data – let the numbers do the job of letting your audience understand the problem – don't tell them!
- The simpler the data and the infographics, the better the concept is nailed down
- Single listen test: an occasional listener should be able to describe your pitch perfectly after just the first listen

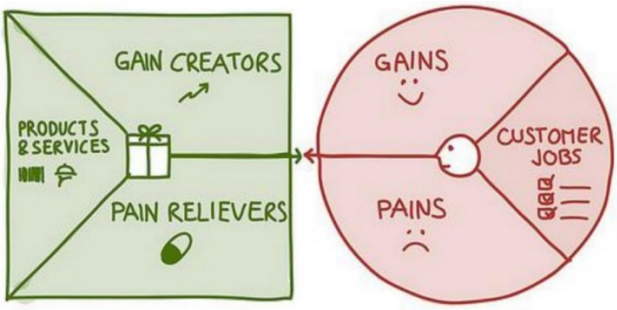
15 Lesson 10/11 – Business Modeling – Pipes & Platforms

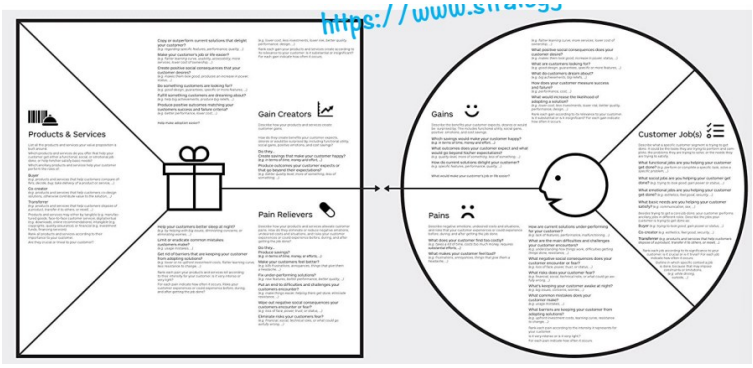
(Note: this set of slide may incorporate "Platforms Continued", like happen in 2022-2023)

Don't fall in love in your idea but always support the customer upfront. Consider the professor example of UQIDO, one of his startups:

- Reservation of visits with doctors and hospitals
- Idea of using ChatGPT to gather ideas and then book reservations
- Didn't think of testing this with real people

Understand for real your Unique Value Proposition (UVP): What makes your product/service unique and provides you with the best competitive advantage through various elements.





In order to sell stuff and make profit, there is the need of a business model, which is a theoretical model. Consider there are a lot, like the following (many you can see about here):

Written by Gabriel R.

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	...

The main categories of business models we want to consider are the following:

- Platforms
- Traditional BMs

Consider the classical examples of "*razor & blades*":

- Razors are few and cost more
- Blades are much more and cost much less
- A disposable razor blade is much more profitable this way

The same thing happens with printers and cartridges:

- Inkjet is very costly
- Instead of changing printer, you would buy a lot of cartridges

Another example is the "*freemium*" model:

- 95% features are free
- 5% of the "coolest things" are locked behind a fee/a paywall

From above, a note on the "nickel and dime" approach; it refers to a pricing strategy in which a business charges additional fees for additional features or services.

More formally:

- The basic version of an offering is given away for free in the hope of eventually persuading the customers to pay for the premium version
- The free offering is able to attract the highest volume of customers possible for the company
- The generally smaller volume of paying 'premium customers' generate the revenue, which also cross-finances the free offering

There is then the "*subscription*" model.

- There is no free tier here
- Instead, there are different offers locked behind different kinds of paywalls
- This model accepts piracy because this allows to let people test the service
    - E.g., Netflix, which needs to convince you and then buy the subscription
    - E.g., Microsoft, which allowed piracy for both their software suites and Windows

More formally:

- The customer pays a regular fee, typically on a monthly or an annual basis, in order to gain access to a product or service

Written by Gabriel R.

- While customers mostly benefit from lower usage costs and general service availability, the company generates a steadier income stream

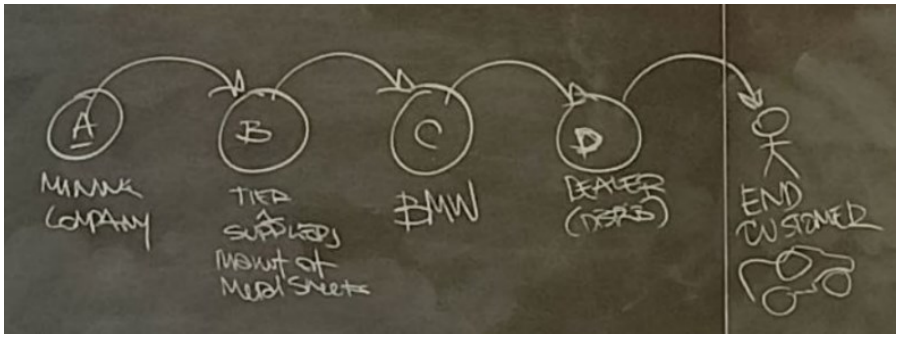
We start diving deeper into business models; let's start from linear business models.

- They are basically linear chains of models
  - Inside of which, at the end, there is the end customer
- In this chain, there is the concept of *value addition/added value*

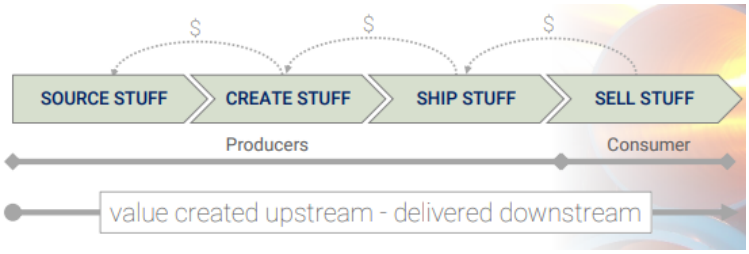
More formally:

- It is a traditional way that businesses operate, scale and grow
- It generates value by providing products or services to customers via a supply chain

Consider this example (remember: for the exam, the prof. says, you should come up with your own examples):



Specifically, this model goes downstream to the customer, which can be seen as a pipe model, fostering the traditional *linear* value chain, where there are a lot of different segments, each governed by a different company:



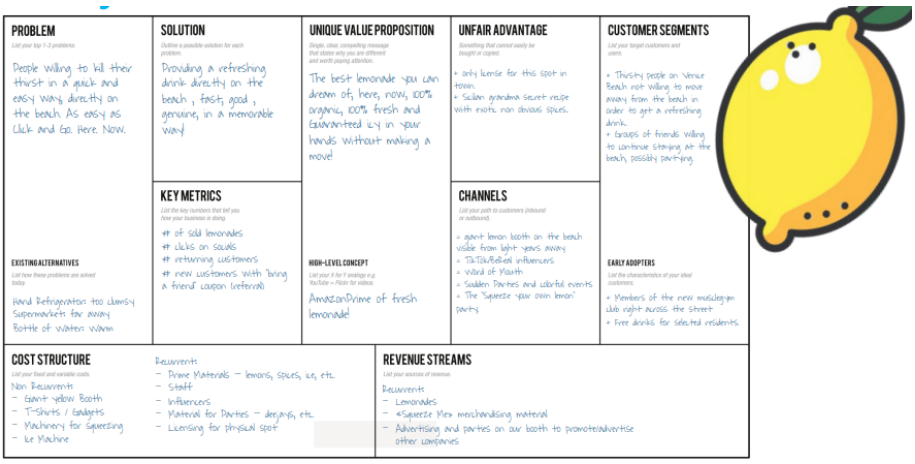
Consider the cost of a car:

- The car itself may cost tens of thousands of dollars
- But the raw materials themselves cost way less (not even 1000 dollars)
- Instead, the whole supply chain process needs to be paid somehow
- And each component inside the chain adds its own value
- So, each step, apart from the thing itself, gives monetary/concrete added value to something
  - Which is why the car may cost more or less from the dealer to the actual manufacturer

The longer is the value chain, the less control there is on it and the less value there is in output. Also consider the Tesla case: there are cost shrinkages due to internal battery production and no external dealers.

Is the following Kelly's Lemonade Booth a linear business model? *Yes*, because the company touches the product it gives to the end customer directly.

Written by Gabriel R.



Consider the example of the following market: there are n sellers selling to different customers (traditional linear models) and the platform (which is what the market sells), selling the *connection between sellers and customers themselves*.

Given they are small retailers, by themselves they don't advertise nor know how to reach customers, but the "market" allows to reach team. So, this is the platform.

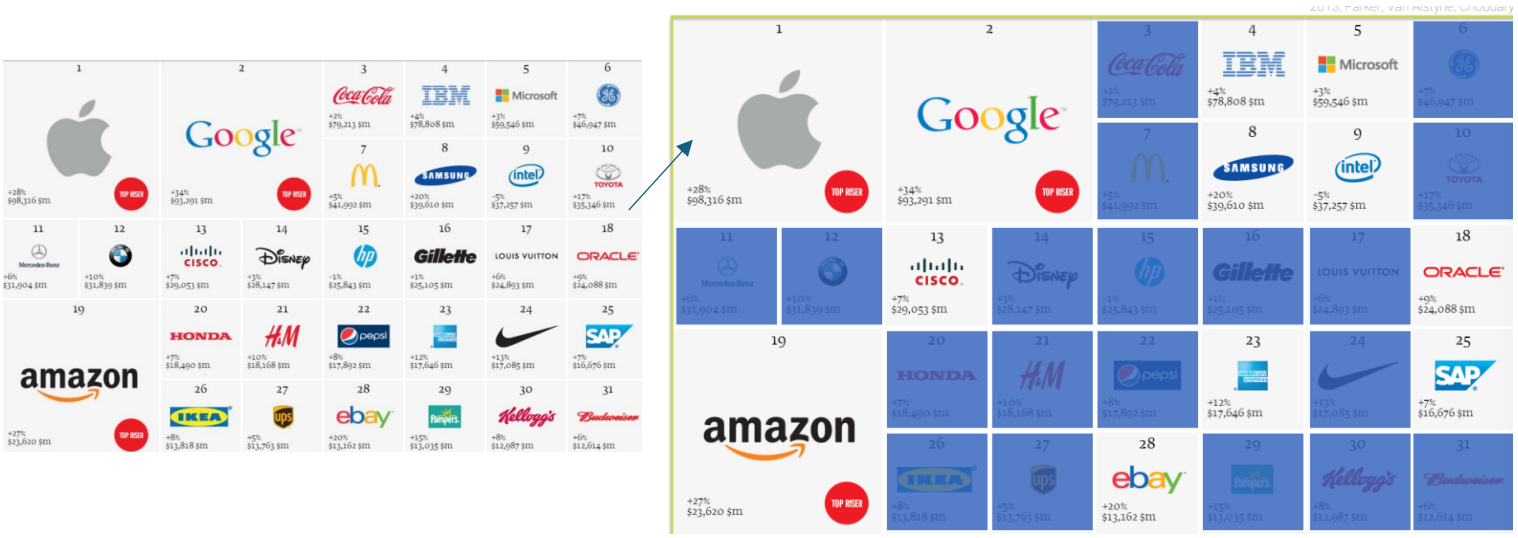
Another example of platforms is malls: they don't sell anything specific, but they seek to maximize the value of the entire ecosystem. So, most platforms sell interactions.

Consider the following ones:

- Why Instagram, AirBnB, Uber, … create nonlinear shareholder value in ways traditional companies do not?
    - E.g., AirBnB: the biggest company selling house rents have no houses (so, it's a platform)
    - Other examples are: Uber, eBay, Vinted, YouTube, Spotify
        - Apple Store/Play Store which are tens of millions (monopoly of Apple to install software only from them and as a matter of fact unfair advantage – even if illegal, this works given they are not alone)
- Are the Silicon Valley VCs (Venture Capitals) wrong *or* is the traditional Enterprise Valuation methodology falling short?

Consider the following are 2013 best global brands; here, the blue ones are platforms.

Written by Gabriel R.



Some *manifestations* of the platform business model in different sectors:

- 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

Written by Gabriel R.

    - Crowdfunding
        - Kickstarter
    - Gig economy, short term contracts
        - Uber, Food delivery services, etc.
- 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

The following is the definition of the platform: "A plug-and-play business model that allows *multiple participants* (producers & consumers) *to connect to it*, *interact with each other* and c*reate and exchange value*" - Sangeet P. Choudary "Platform Scale", 2016.

- If you think about a solution with a startup, consider delivering a platform
- Here, the *connection* is sold (comes from the bazaar – pretty old model)
    - The most famous example is definitely Uber, which is the most valued company: they do not have any taxis or anything, did not invest in advertising – yet it does the magic!

A Platform has a *multi-sided* Lean Canvas; consider the following example about AirBnB (originally called like you see in figure – more examples of lean canvases here) – below DAU/WAU are Daily/Weekly Active Users and NPS is Net Promoter Score – surveys to see how much would you recommend.

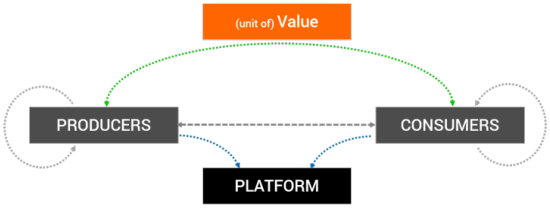
Written by Gabriel R.

We are studying the platforms because they aver very *unconventional* yet *very successful*.

- Different kinds of interactions bring different types of problems
- Multiple customers have multiple problems
    - Which can be totally different from each other
    - This can be considered as multi-sided problem
- A startup starts from a single problem
    - So it may be a product or a platform
    - E.g., Apple it's both a traditional business model and a platform
        - Phones/Hardware and Digital store
    - E.g. YouTube/Instagram = content creators/watchers
    - E.g. Subito.it = money is between the transactions
    - E.g. Facebook = legal tap wiring (spying people as a platform)
        - Basically, they sell data and it's free because of that
    - Google services: who pays this money?

Point is: *always follow the money*.

The stronger the more the platform increases/efficients the interactions.

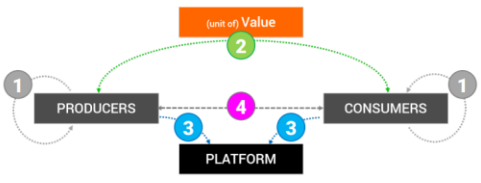


The platform can be seen as an interaction catalyst because they allow multiple parties ("market sides" to *transact across the platform*. The value may increase non-linearly, depending on *the strength of the network effects*, providing benefits to two (or more) user groups – according to Geoffrey Parker and Marshall Van Alstyne, theorists of networking in economy.

When you start a platform, how to attract people?

- Make it free (so to gather interest)
- There should be something which is extremely useful to the user

Interactions on the market are also called *two-sided networks*, given it has to be perfect on both sides, for *both users and suppliers*:



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

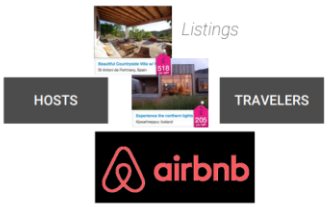
2 Cross side Network Effects
+ more options to Consumers
- more adv

3 Tools to maximize interactions among sides, through the Platform

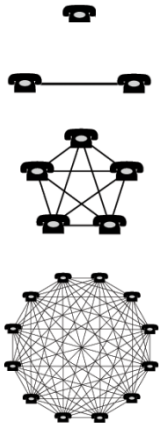
4 Traditional Pipe

Written by Gabriel R.

The following are classical platforms examples:

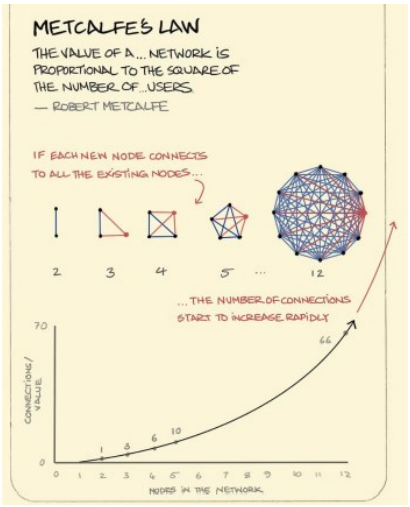


The <u>network effect</u> (a.k.a. network externality or demand-side economies of scale) is a phenomenon whereby a good or service becomes more *valuable when more people use the platform* – Wikipedia.



- It's strictly related to the concept of <u>externality</u>
  - The cost or benefit that affects a party who did not choose to incur that cost or benefit – basically experienced by an unrelated party
  - You immediately get money
- More generally:
  - <u>Network Effect</u> (def): 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*

Robert Metcalfe (inventor of Ethernet, see figure on the right) stated the *Metcalfe's law*, which states that the financial value or influence of a telecommunications network is proportional to the square of the number of connected users of the system.



- Consider Facebook, it's a rolling ball
  - Basically continually attracting new people and new interactions

Platforms develop *positive network effects* to *each* of the interactions sides. Each side *attracts more* of the other. The goal of a platform is to *enable interactions* between *producers* and *consumers*.

- *Products* have *features*, *platforms* have *communities*
- Platform is an *open architecture* together *with a governance model*
  - It must provide a *useful function or service* and *should provide 3rd party access*
  - It has a *platform purpose*: to consummate the match – more & better!
    - Subgoals are seed creation & consumption

Written by Gabriel R.

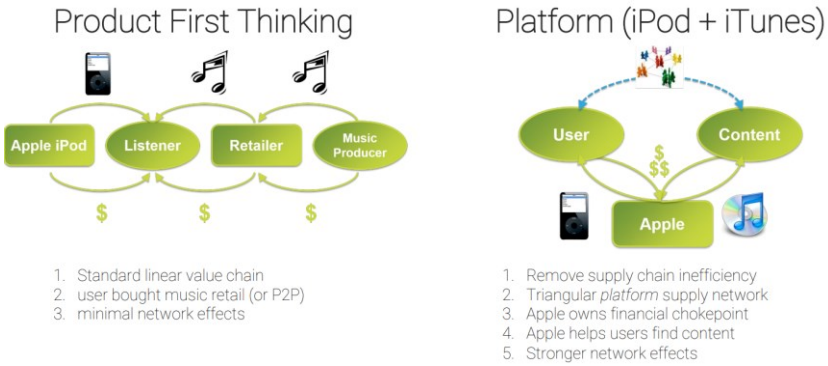
Products to platforms: *why now*? (2015, Parker, Van Alstyne & Choudary)

- 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

Quoting Marshall Van Alstyne, from MIT (economist who studied the theory of two-sided markets with Parker, basically the "founders" of network externalities).

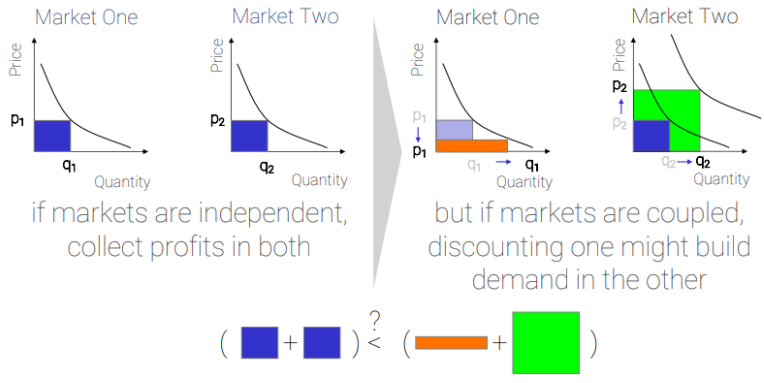
- Reason: *You can't scale network effects inside as easily as outside*
- In any market with network effects, *the focus must shift from inside to outside the firm*

Consider the following platform example of the Apple iPod:



In there, you see the traditional business model of music, completely changed by the new model on the right, basically forcing users get the content from the platform.

What changes are mainly the *marketing & prices*; as a matter of fact, *monetizing platforms free pricing is profitable* (Jean Tirole – Nobel Prize in Economics, 2014 – for work on antitrust regulation, market power and two-sided platforms):



What changes is *finance*: *corporate valuation models* that underestimate market expansion due to network effects *fail to invest*.

Consider again the case study of Uber, as described here by Aswath Damodaran, NYU Finance professor. Only considering the network effects and externalities, the perceived value is 20 billion dollars. The Uber worth without network effects is something like the following:

Written by Gabriel R.

UBER

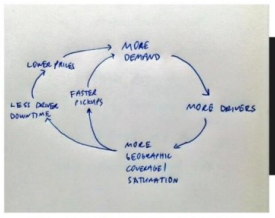
value: $5.9 Bi
june 9, 2014

- Estimate global taxi market
- Estimate market share
- Est. risk adjusted cash flow
- Consider proprietary methods, barriers to competition

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

As a matter of fact, multiple capitalists failed to see the real effects of those interactions – now considering network effects:

- 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

UBER

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:

UBER

value: $23 Bi
july 16, 2014

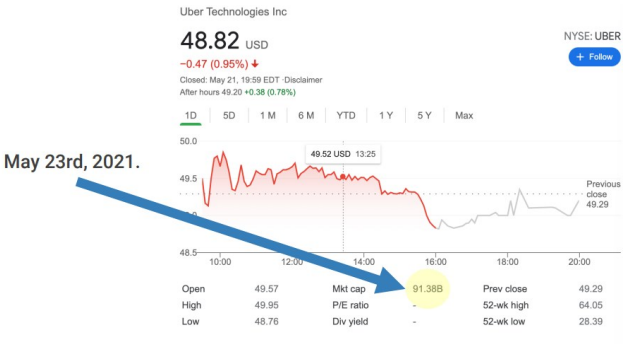
- Professor conceeds!
- Based on Narrative from Gurly and data provided, revises Value
- material enters in Class material for postgraduate programs
- open source project kick-off

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

- Professor Damodaran's initial DCF likely defined the addressable market too narrowly by just looking at the existing taxi industry

- Uber's positive externalities around expanding the market, enabling delivery services, and changing car ownership habits mean the true potential is likely much larger, closer to the $17B valuation proposed by Mr. Gurley

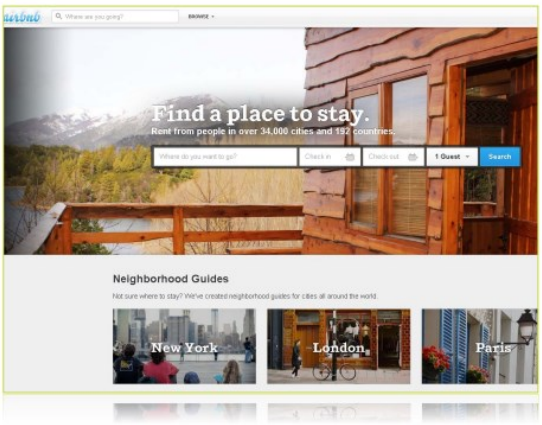
May 23rd, 2021.



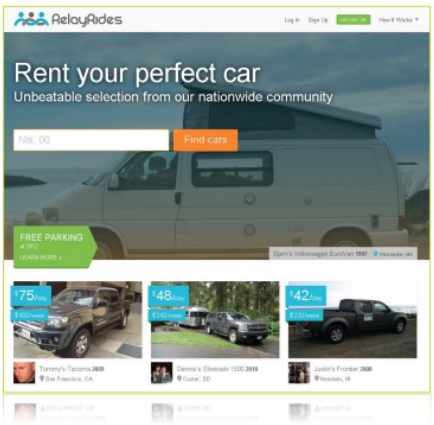
Here, you can see Uber net worth as based on Google data.

Written by Gabriel R.

What really changes are the *supply chains*: *platforms unlock new value from spare resources and user generated content*. Some examples here, in which companies own nothing and compete with companies owning things in the market:



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



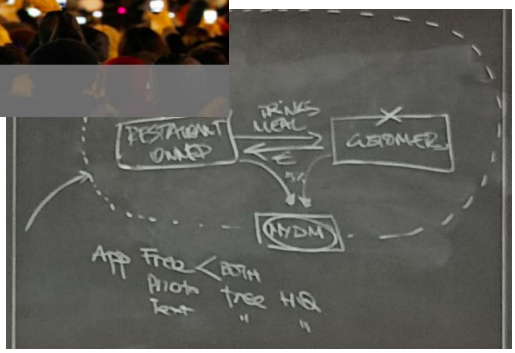
RelayRides sells users' spare cars, competing with rental firms that must own them

Other example: photographers do not pay to post photos, but just share them and lots of value is there. It depends also on how many people are actually present on the platform and the number of users who are using the platform are important.

Instagram sold for $1B not because of contributions from 13 employees but from 30 million users

This is an extreme example, but Instagram is built upon the concept of random of taking a selfie: everybody will do it at least once and everybody is doing it! Consider the power of platforms! Basically, all of this part is based on the book quoted in slides "Platform Revolution: How Networked Markets Are Transforming the Economy" – which as always I put on MEGA myself to give reference material.

Written by Gabriel R.



- E.g. of a platform = digital menu app
    - Customer: restaurants, download the app, sell the service to restaurants
    - Service: menu
    - Activities: developing app, restaurants
- This is a linear business model, let's try to make it a platform
    - Platform is free for both customers and restaurants
    - Photos are free and of highest quality
    - Automatic translation of menu is free
    - Will not speak to restaurant owner or customers
    - Make the platform attractive
- How to enhance attractivity
    - Ranking of foods
    - Number of boys and girls present there
        - because we are monkeys and remember that's how Facebook made billions!
        - we want to know people
    - Events in which people I am interested in/Gatherings
    - If it works for someone, more people will come
        - Friendships/relationships/experiences
    - All of this with a stupid menu app! This is how you think of a service as a platform
    - Not like the others, Unique Value Proposition – you need to be unique

Point is: everything is for free, and it is of the highest quality! Consider the following:

- Billions of mobile apps are present, and the majority are free
- But why we have only those 4/5? Everybody is there, but we need to have something more
- You want to get in touch with your customers and respond to their basic needs
- You have to break the chain and do another thing – go into real life (market)

Consider 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)

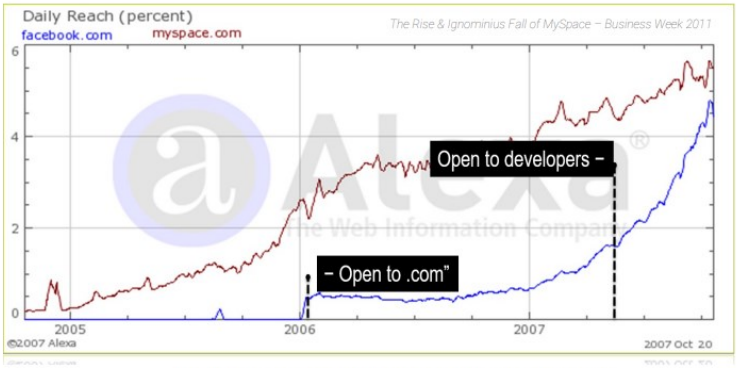
Again, what changes is *internal organization*. Employees must *see the world across the platform*, which must *support a shared data layer*.

Written by Gabriel R.

In 2002, a mandate was issued by Amazon founder Jeff Bezos (*Bezos Platform mandate*). This mandate would is a backbone of Amazon, informing both the API development paradigm in the corporate mindset and a general approach to externalizing API functions.

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

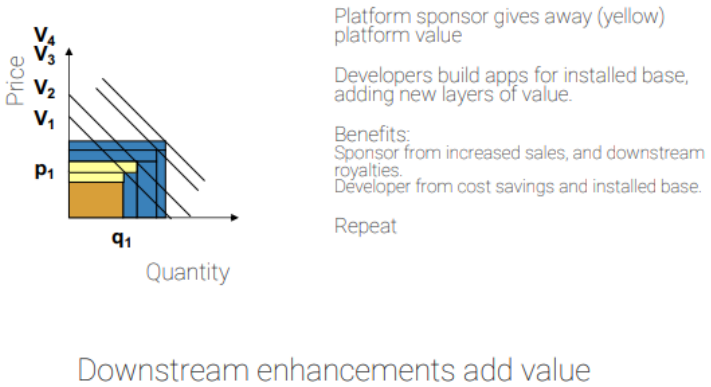
What changes is *innovation*. Platforms *open* themselves to *third party contributions*. Does openness work? Here, Facebook opened to devs and basically overtook MySpace (you can easily understand by how much I wrote here at what level of detail we went on the following parts).



Facebook opened to developers and overtook MySpace!

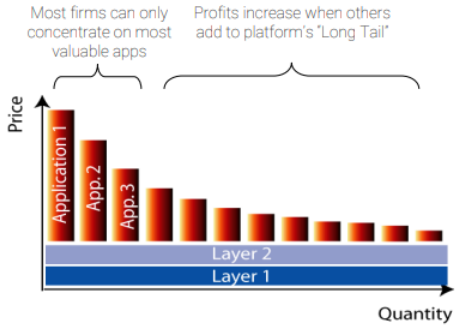
Chris DeWolfe -MySpace cofounder, said: "We tried to create every feature in the world and said, 'O.K., we can do it, why should we let a third party do it?' "We should have picked 5 to 10 key features that we totally focused on and let other people innovate on everything else".

Why does *openness* work?



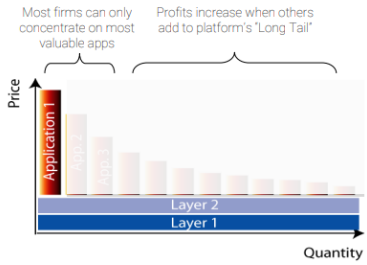
Written by Gabriel R.

Platforms get enormous value from *3rd party developers* – it taps into their innovations and allows the platform capabilities to be extended into ways the platform alone cannot achieve. We don't need to own the tail! Just concentrate on valuable one.



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

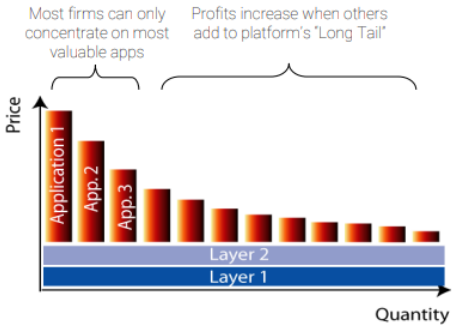
Should Apple have opened the iPod?



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

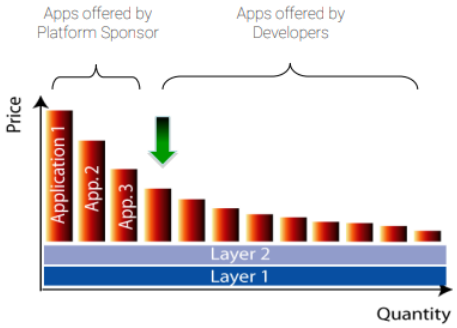
As the economic graphs show, opening the platform results in more applications and enhancements being built by others, which shifts the value curve upwards. The platform sponsor captures value from the increased activity and innovations happening on the platform.

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.

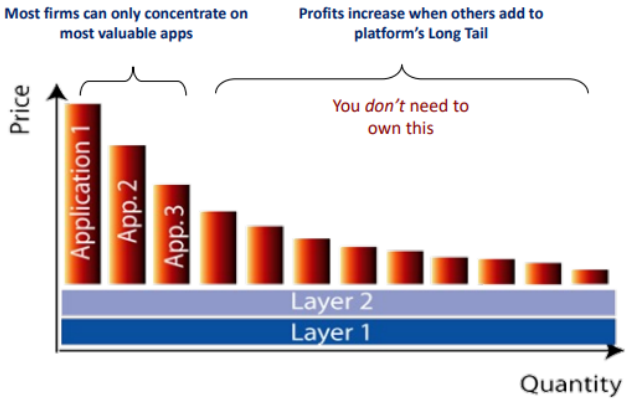
Which applications to absorb?



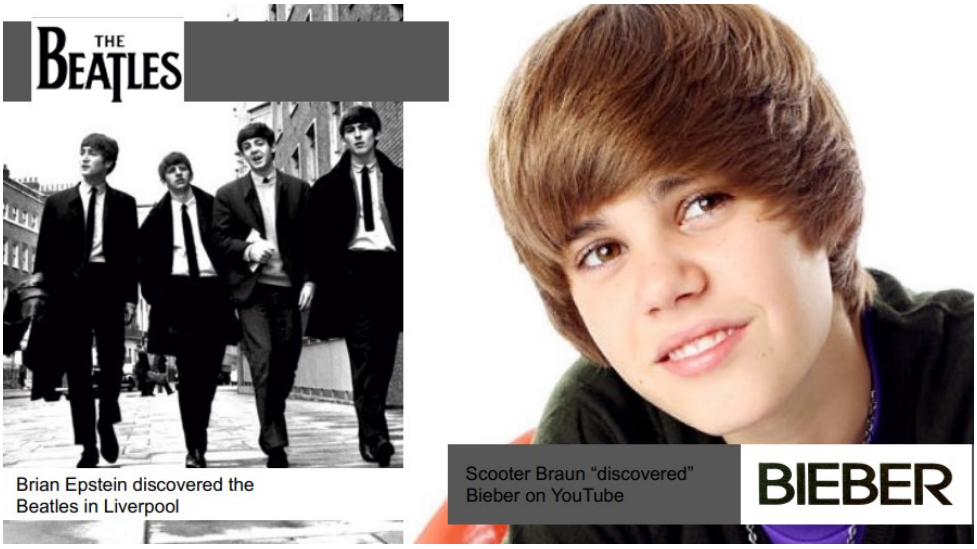
Rule 1: Absorb the highest value applications from the ecosystem.
This adds value for users and mitigates threat of disintermediation.
Example: Apple iPad absorbed e-books
Example: Microsoft Windows absorbed web browsing

Written by Gabriel R.

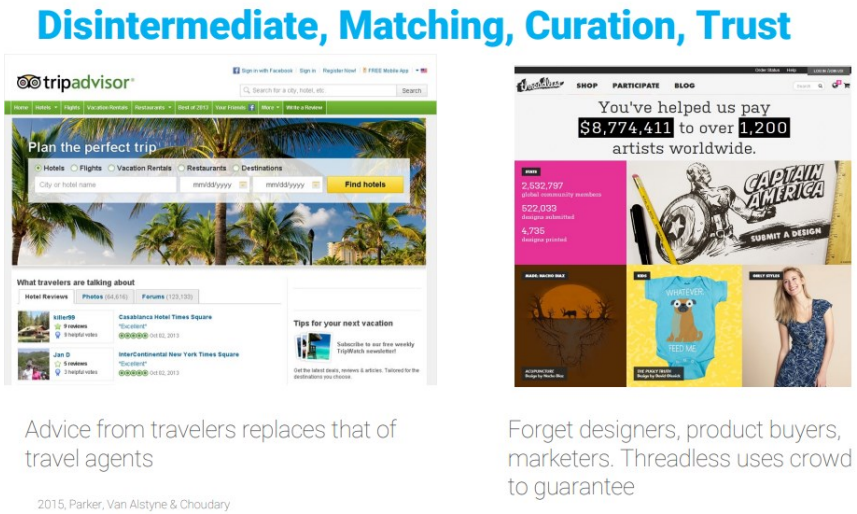
Platforms get enormous value from 3rd party developers.



What changes: *industry bottlenecks*. Platforms will *displace gatekeepers* (experts or bureaucrats) with meritocratic crowds.

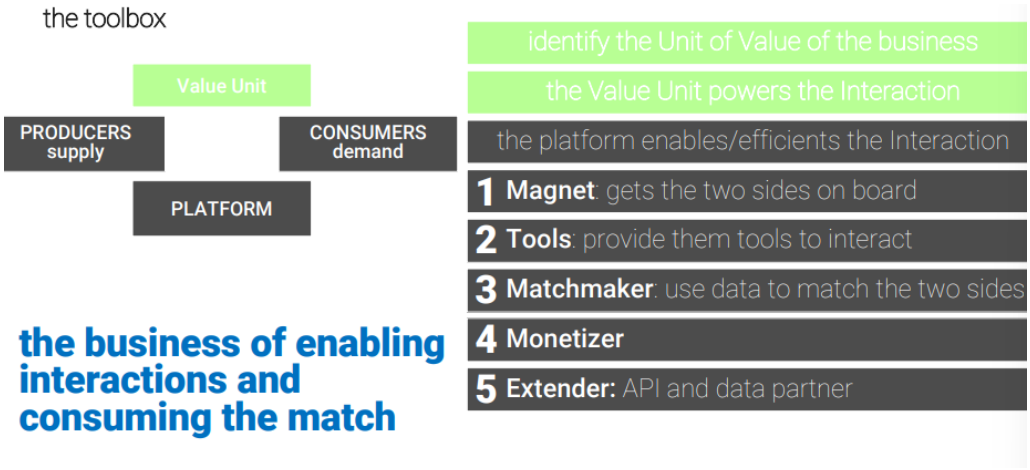


We go from the *what* to the *how*.

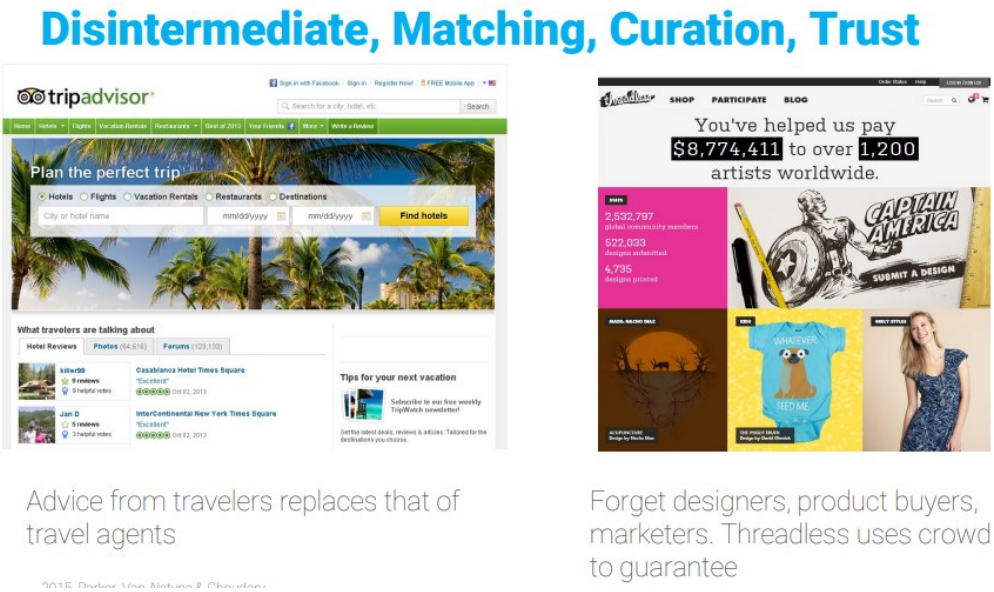


Here, the *toolbox* to design a platform business:

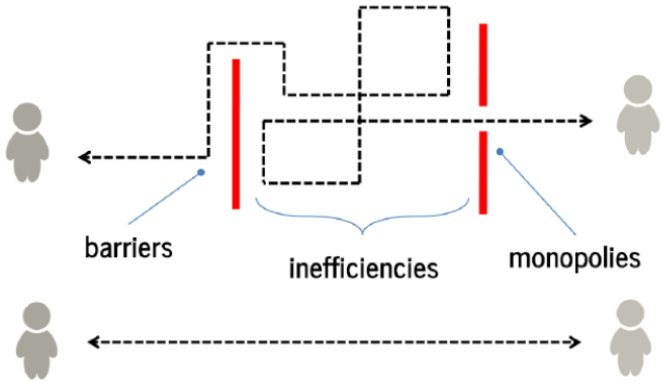
Written by Gabriel R.



The following are the features of a ideal platform business: intermediation indirect, matching only the demand to customers, curating reviews and creating trust with more networking coming.

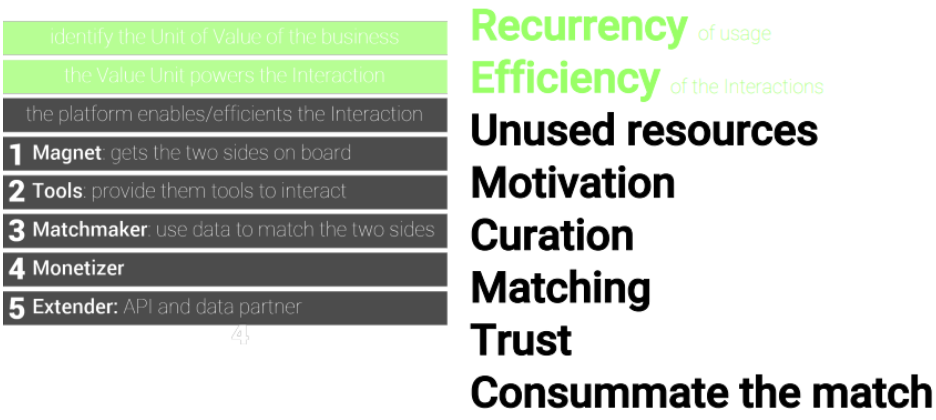


The disintermediation is basically P2P:



Written by Gabriel R.

There is opportunity for metrics:



How platforms win:

- 1. Own the ecosystem
- 2. Monitor ecosystem activity & 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

IMPORTANT – READ

This marks the beginning in which every week, a lesson will be dedicated to startups invited by the professor – guests – and the other one is a theory lesson. So, given the guests are useful only for context, I suggest you think if for you is important to be present there, otherwise keep an eye for the theory lesson only – I did this choice. Basically, this stretches the course up to the week before the exam and given half exam will be computations not taught up until the end, well, think again on hat you will do and want to do.

16 LESSON 12/13 – STARTUP EQUITY MANAGEMENT & INCORPORATION

(Consider this is made up in two lessons, given concepts are important, so this further strains away the last lessons, given there are the guests interviews)

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

Now, for the main concept of equity:

- "The value of the shares issued by a company"
    - Basically, deals with the property of a company
- "One's degree of ownership in any asset after all debts associated with that asset are paid off"
    - "Portion of the corporation you legally own"
- The company is shared between shareholders (pieces of a company are called "shares")
    - These are the owners, legally entitled to have the company
- There are two ways in which to divide a company
    - Shares
    - Stocks ("atoms" of the company) → e.g. owning 50%
- You can buy pieces of the company doing a public act for example
- Who has the bigger shares decides
    - But there are situations in which the stocks are divided between multiple sides
    - and this means that everyone should agree

Shareholders do not buy companies, but they take pieces to *invest* in the company, so, to make even more money if possible. More technically, it's equal to a company's total assets minus its total *liabilities* - value that an entity is expected to deliver in the future to satisfy a present obligation arising from past events.

- Some other people can become entitled to have rights on the company
    - Giving capitals to people who administrate the company
        - Called CEO / Amministratore Delegato (AD) in Italy
    - A part of company don't own the company, the run it on the behalf of the owners
        - Board of Directors (BofD) is the governing body of a company that is elected by shareholders to provide guidance
            - These people have functions e.g., sales/marketing/human research
- Most startups are composed by the same people being in all roles
    - For example, Fabio and Nicola owning both 50% and them having all functions
    - Both have full legal responsibilities

Who gets the equity?

- Initial Founders (Initial Team)
    - The first moments of startup life means dividing stocks between owners without spending a dime and being legally entitled to do so
        - A start the value is 0, but when the startup explodes, the value is billions
    - "Easily 60% of the the time a startup founders end up in court boils down to equity distribution issues" - Matthew Rossetti (Sentient Law, Startup Attorney)
        - So, how do you divide the shares?
    - This is the reason most startups end in court = division of shares
        - This can be measured in the degree of commitment in the company
    - The most important things for a startup in this sense are time shares and position
        - Time share = how many shares were present
        - Position = CEO/CTO/CFO…
    - There can be also capital companies, which invest giving capitals to others
        - E.g., LLC/SPA, etc.

    - Common criteria for splitting stocks:
        - Even Split – no hassles (but much more dangerous legally)
            - Not much used, since after years passing does not consider the relationship between the people
        - "Future" split: forecast on the time / effort that one is going to provide
        - "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 at 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…)

Remember to not split the company in a way to not fight or people killing each other; there is no law on this, so the founders may have everything – also, this is frequently asked in the exam.

Examples of a founder represent the "early contribution" – getting the right people will make us avoid waste time on this and removing it from the product (this one is a logical approach):

- 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 figures 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 (i.e. business cards)
- Faces the most difficult pitches and talks to investors
- Has a grasp with your market, customers, influencers, early evangelists

Written by Gabriel R.

- Advisors
    - They know the market and help people/good advisors are invaluable
        - The value if the advice he gives
    - The value of contact is fundamental to actually succeed giving access to the market
    - Never give the advisor big shares if he has no big responsibilities (just contacts)
        - But if there are multiple functions, give bigger shares
    - Given the young and often unexperienced trait of most startup founders, advisors are an amazing and extremely valuable source of support for startups
    - Some may dedicate a share of their time in exchange of a small portion of the equity
    - Key benefits: crucial know-how, door opening

- Investors
    - Tough guys with lots of money – they wanna know if you are serious/credible/light in your eyes with your idea
        - Never go to the investor alone, but as a team, given they invest in people
        - Never talk about technical things, but about the market
    - 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, the stage of founding is where the process of evaluating your startup may be more difficult
    - A good advice: as always, *get out of the building*!
        - In this context, this boils down to: *talk to your peers*!
    - There are different types of investors
        - depending on how much money the give and their goals

- 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
        - Remember the j-curve, the point of loss should be as little as possible
        - So, keep costs as low as possible
    - This is where the company shares may offer a valuable tool. (not to be confused with co-founders, btw)
    - Most important, as a side effect, these employees may and will not feel as employees-only and they will but a lot of extra effort to make your venture successful, since it's, in part, *their* venture too!

Most importantly: 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.

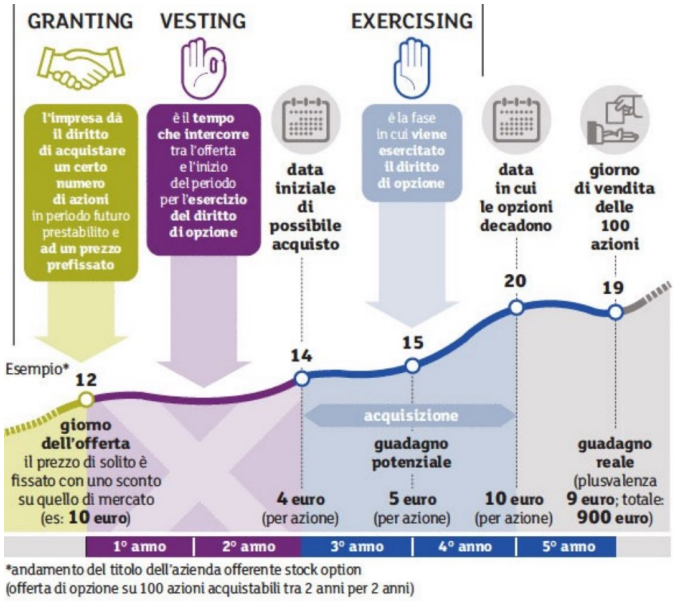
Stock options are a tool that can compensate the difference between a talented figure market value and your compensation rate.

- They are an invaluable tool:
    - They will keep talented guys into the company
    - It costs you nothing
    - If they bring you money, it will be also given to you

Written by Gabriel R.

- E.g. 1.000.000€ with 1.000.000 shares, so each costs 1€
    - You go to random guy and say “If you stay in the company for 5 years, I will give you a lot of money”
    - After 5 years you will have *the option* of buying those shares
        - note: he can also choose to *not* buy these shares
    - And value of shares will be discounted to him and there is a limit of shares bought back
        - e.g., 200.000 for 0.60€ with 80.000 euros for free
        - then selling them for 5 euros each, so making a million euros of revenue!
    - But nobody knows for sure the value in 5 years!
- There can be the problem of having the shares but having no money to pay these shares back
- Most important, they are also a tool to boost that figure involvement and effort

The different phases are present below:



- Granting: The act of giving or awarding stock options to an employee
    - It is the initial stage where the company offers the employee the right to purchase a certain number of shares at a predetermined price (strike price) in the future
    - The grant date is when the stock options are formally issued to the employee

- Vesting: It defines the period over which an employee earns the right to exercise their options to buy company stocks. This process essentially ties the options to a schedule that incentivizes employees to remain with the company before they can own the stock options
    - There is an initial "cliff" period (e.g., 1 year) where no options vest
    - After the cliff, a portion of the options vest gradually over a set period (e.g., 25% per year for 4 years)
    - This means the employee must stay with the company for a certain period to fully earn their allocated stock options
    - This is the point of fighting, exercising the option of stock and negotiating the period in which to exercise the option
    - If the company wrote the stock option contract, it’s in their favor

Written by Gabriel R.

  - Always be prepared and use a lawyer
    - Discounted price to buy shares
    - Period of negotiation (it can't be forever) and the time of when to sell
    - Price to sell shares
  - Consider the number of stocks is preallocated
  - This is where the managers make the most money
  - This is not there to keep employees, but to keep key employees

- Exercising: The act of using the vested stock options to purchase the company's shares at the predetermined strike price
  - Once the options have vested, the employee has the right to exercise them during a specified exercise period
  - The exercise period is the time frame during which the employee can choose to purchase the shares, typically ranging from 5-10 years from the grant date
  - If the employee leaves the company, there may be a shorter exercise period (e.g., 90 days) to purchase the vested options before they expire

Always offer stock options: you are not losing if company is losing, everyone wins. Stock options are guaranteed only to key employees since it costs money to do so. It does not matter the number of stock options, but their actual value.

Normal people has the right to go to Camera di Commercio (Chamber of Commerce – basically, a big database of companies) and want a "visura catastale" (land register survey), costing you a small fee and there it's written everything about the company (shares/story/actions, etc.) shares guarantee a percentage of effort.

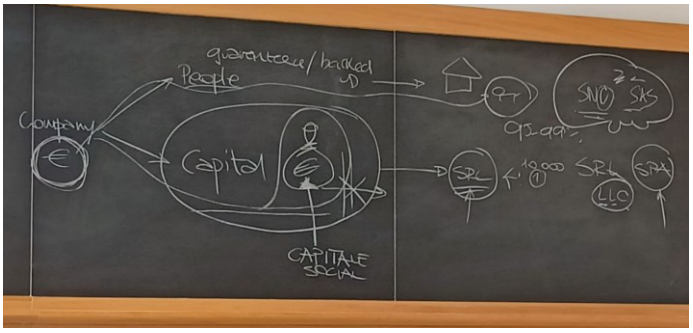
So… *how* does it work within your company? Every state has different ways to deal with companies.

- Company is made up of two main things:

  - *1. People* - The individuals who own, operate, and are involved in the company
    - Guarantee/Backed up
    - They will take you everything if you don't have money
      - Your house/your family
    - So, an SNC (Società Nome Collettivo – everything) costs nothing in Italy
      - but they will not take you everything
      - because your liability is infinite
    - But also SAS (Società In Accomandita Semplice)
    - Much better to have SRL/SPA/LLC (this last one in USA, first two in Italy)
      - Società Responsabilità Limitata/Società per Azioni/Limited Liability Company
    - But not in case of startups, since the failure rate is between 95 and 99%

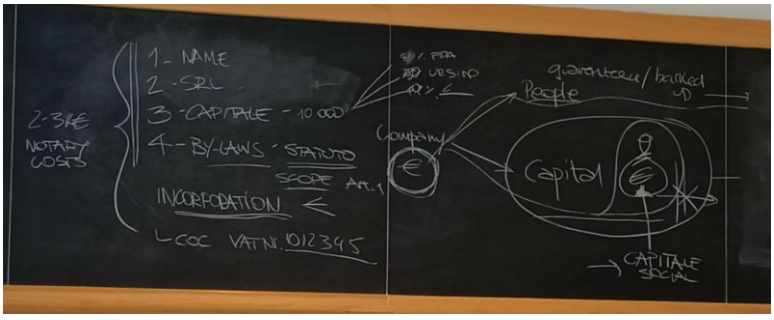
- *2. Capital* - The financial resources invested in the company
  - This is the solution for startups
  - Here it's more convenient to do SRLs
  - There is the "capitale sociale" (social share), which is the maximum amount of capital a company can issue, as stated in its corporate charter
    - How much money to put here? It's your decision
    - By law, this is declared in company websites (called "C. S.")
    - This capital needs to be maintained, since if something bad happens, one has to get there
  - Remember also:
    - Subscribed share capital (capitale sociale sottoscritto – C.S.) is that which the shareholders have committed to pay in
    - Paid-in share capital (capitale versato – C.S.V) is that composed of the contributions actually made by the shareholders
  - For startups it's important to be listened-considered as accountable in market
  - If company fails, the social capital needs to be equally given back by shareholders – e.g., 10000€ of social capital, each has to correspond their part

This can be summarized by the following figure:



What to decide when to start the company (you have to go to the notary to do that and on average this costs 2000/3000€):

- Name
- Type of company – SRL
- Capitale
- Bylaws – Statuto (Bible)
- Incorporation (Registration of name in Chamber of Commerce)
- VAT number (Partita IVA, like your ID)



Written by Gabriel R.

Going deeper with crucial documents:

- 1. Bylaws / Articles of Association (Statuto) (mandatory)
    - Public (everybody can read it)
    - It applied to every shareholder, present and future
    - It states rules which are "by shareholder" and not nominal (to be applied in general)
    - It needs to be written/signed by a notary
    - They serve as the foundation for the company's governance and operation.
    - Bylaws typically include information such as the company's name, purpose, registered office, capital structure, and rules for shareholder meetings
    - Amendments to the bylaws usually require a special resolution and must be filed with the appropriate authorities

From the lesson:

- What the company does and how it works and it's a public document
- The Code of Laws (Codice Civile) states everything about companies
- But here you can have further things
- For example, the 75% of the shareholders take the important decisions
    - Never do the 100% - because you have to think when things are bad, not when things are good
- Here there are articles which declare the company's activities
    - E.g., Scope – Article 1 = tell explicitly what you are doing
- If you refactor, you have to change the Bylaw
- If you do something outside of the Bylaw, the Guardia di Finanza may be after you

Moving on with crucial documents:

- 2. Shareholders' agreement (Patti Parasociali) (optional)
    - Private and nominal
    - Valid only between specific, well identified people, who sign the agreement personally
    - It is privately written and signed and does not require a notary's involvement
    - This agreement is used to govern the relationship between specific shareholders and outlines their rights and obligations
    - It can include provisions such as restrictions on share transfers, voting arrangements, and management roles
    - Shareholders' agreements are often used to address specific concerns or arrangements that are not covered in the bylaws

From lesson:

- Company will tell you they don't even have it
- This is done in weeks, while the first you just have to pay
- Here, everything is told inside of it of what people have to do; this is signed and again this is important in case things go wrong
- Never disclose them, since they are private
- They are done between private individuals, so each one has to agree

In any case: when *in conflict*, *bylaws* have the *prevalence*.

Written by Gabriel R.

The following are examples of typical clauses - these are some very important clauses in shareholders' agreements (there are many…). We have to know well these things. Keep in mind there are hundreds of clauses (see here for instance), so these are the *most important ones*:

- Put option: Shareholder *must be able* to sell his/her stocks under condition X – or sell his/stock to specific shareholders
    - This is in favor of one option and against other ones

- Call option: Shareholder *must sell* its stocks under condition X
    - This is the opposite of the previous one

- Drag along: Specific shareholder *can trigger the call option* of other shareholder when selling his/her participation
    - Someone can buy your shares at conditions you do not want

- Tag along: Specific shareholder *can trigger his/her put option* when other shareholders are selling their participation
    - These are very important clauses in shareholders' agreements (there are many…)

- Lock-up: 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*
    - E.g., health problems, assistance

- Bad leaver: What happens to a shareholder that *chooses* to leave the company *voluntarily*
    - E.g., you do it because of your will

- Liquidation preference: Applies to liquidation events (investor receives back his money before the others in case the company gets sold)
    - Many startups get fucked up here – keep in mind
    - Something most investors ask, and you should never give to them
    - Consider the following scenario (without liquidation preference)
        - 5 million in shares
        - 1 million given by the investor
        - 2.5 divided between 5 people at 20%
        - Investor does not get the money back
    - Here there is the liquidation preference
        - From before, investor gets 1 million and then gets the equal split when things go well
        - When things go bad, they will get equal the amount even if you don't have it
        - Negotiation is hard: if investors put liquidation preferences and you don't sign them, they might think you don't believe them, and you will have no money
        - Then, there is all of the time between shareholders negotiations, passing time between actually receiving the money
    - Business angels invest their own money, while investors have bank money spending
    - The last question of the written exam is this one

Written by Gabriel R.

Summarizing *terms* seen or discussed up until here to conclude:

- 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."
- Valutation: "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."
- 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."

(Summarizing from some older Italian notes, but useful to give context)

A *startup* is a corporation with:

- Majority of share capital held by individuals
- Main office in Italy/EU (with Ita branches)
- Annual Production Value, starting from the second year < 5M€
- No redistribution of profits for the first 5 years
- Corporate purpose must explicitly state the development of services or products with high innovative content of technological nature
- Other constraints related to investment in R/D and personal qualification

Advantages:

- Various tax benefits and simplifications
- Exceptions to classic corporate law (e.g., simplification of the concept of bankruptcy)
- Facilitation of work for equity
- Mechanisms for retaining corporate control and own participation
- Nomination rights

Types of companies:

1. *Commercial*, Commercial companies to which the Statute of Commercial Entrepreneur applies are subject to the obligation of registration in the commercial register (Art. 2200 Codice Civile) and the maintenance of accounting records and are subject to bankruptcy proceedings in case of insolvency. S.n.c., S.a.s., S.r.l., S.a.p.a., S.p.a.

2. *Non-commercial*: Non-commercial companies have as their object the pursuit of an activity different (agricultural) and are governed by the rules on simple company.

3. *Partnerships*: Simple partnerships, Snc (the General Partnerships) and Sas (the Limited Partnerships).

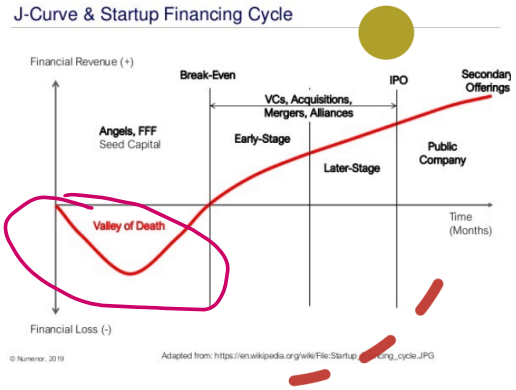
4. *Corporations* (concept of liability: ethical implications within the strategic business vision), the Spas (i.e., Joint Stock Companies), the LLCs (the Companies with limited liability) and the Sapa (the Limited Partnerships).

Written by Gabriel R.

17 LESSON 14 – VENTURE FUNDING

(Note: this was held *in the past* with Ruggero Frezza, president and head of scientific relations in M31. This year, because of lack of time, it was done like this by him alone. As a note, it seems like he wanted to do the Budgeting lesson – present in years like 20/21, 21/22, but again no time)

A startup needs money; we start in the point of death, with a legal entity that can take and spend money.



Starting from day 0, the company starts pulling money for everything it needs to handle. Lots of money is needed for what is called the "cash flow" - total amount of money being transferred into and out of a business, particularly affecting its liquidity.

Why does a startup need funding? Consider the cash flow dynamics:

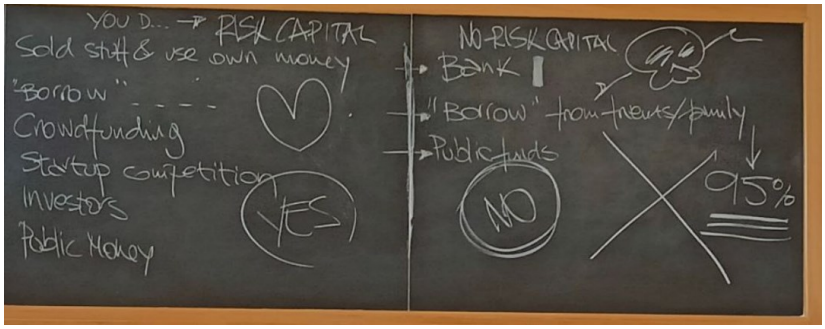
- *Startup costs*
  - These are the initial expenses incurred before a startup begins operations
- *Early stage losses*
  - These refer to the financial losses incurred during the initial phase when the company's expenses exceed its revenues
- *Working capital*
  - Working/operating capital defined as $Current\ Activities - Current\ Passivities$
  - This is defined as current assets minus current liabilities
- *Cash liquidity buffer*
  - This is a reserve of cash set aside to protect the business from unexpected situations or to cover unexpected expenses
- *R&D investments*
  - These investments are typically significant and long-term, often not resulting in immediate revenue but essential for sustaining competitive advantage
- *Inventory investments*
  - This includes manufacturing or purchasing the goods before they can be sold. Managing inventory effectively impacts cash flow significantly
- *Customer acquisition investments*
- *Accelerating growth*
  - To scale up operations and increase market share rapidly, startups often need to invest in expanding their team, entering new markets

Written by Gabriel R.

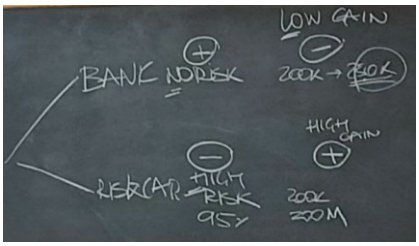
Where would one take money, if you know you have nothing and you want to survive?

- Here, money needs not to be given back!
- It's called *risk capital*
    - Sold stuff and use your own money
    - Crowdfunding
    - Startup competition
    - Investors
    - Public money
    - Everything equity-based with long term risk

- Instead, capital there is the expectation of preservation of capital and guaranteed return
- This is called *no-risk capital*
    - From the banks
        - Thing is, you have to give it back
        - They will give you money - but remember you have assets like your house into the play
    - "Borrow" from family/friends
        - This is death, never do that!



Everything here needs to be measured in terms of risk and gain – of course investors are not idiots, so if you present to them with data and numbers, with guarantees in investment when they put money:



There are the main ways of funding:

Let's go in depth of each term meaning in next part.

Written by Gabriel R.

Self-funding / bootstrapping: some startuppers 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 – very little money/tight cash.

- The company is normally very tight on cash since self-investments are normally low and cover just a limited operational time
- Startuppers 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)

Consider the Three Fs: 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 non-standard conditions
- They normally bring "only" the money
- There are no legal formalities here, more viability and less repayment

Those are the *business angels* – normally business advisors, but basically the give you the money. Those are high-net-worth individuals who invest their own money in early-stage startups in exchange for equity.

Not only the have a lot of money, but also lots of networks. You have to have something extremely convincing to put money into your projects.

There exist different Business Angels Networks (BANs): in Italy there are some of the best Business Angels Associations of Europe.

- Their investments fall in an approximate range between $250K - 2\ mln$. In Italy in 2019 Business Angels have invested 53 million on 88 deals.
- Another kind of BAN is IAG (Italian Angels for Growth)

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 SPVs – Special Purpose Vehicle, subsidiary created by a parent company to isolate financial risk – company with the only purpose of investing in you
        - Its legal status as a separate company makes its obligations secure
            - even if the parent company goes bankrupt
    - Manage the alert levels: yellow, red

Written by Gabriel R.

The following is the selection process of BAN:

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

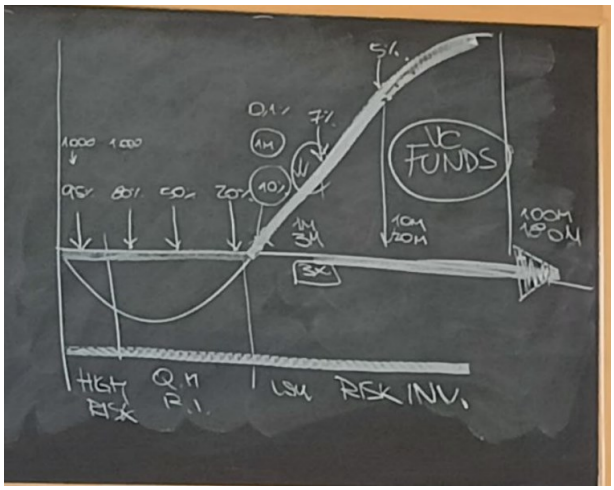
Crowdfunding is the practice of funding a project or venture by raising money from a large number of people, typically via the Internet. Today this is definitely declining, given overtime it converted more into scamming rather than something useful. There are different types:

- *Equity* crowdfunding
    - It is quite different than a BAN investment
    - Now, you need to have a lot of money to even open one
- *Backers* crowdfunding (Kickstarter, Indiegogo)
    - B2C
    - Costly
    - Declining
        - On average, Kickstarter only achieves success at a rate of 37% for all the projects funded on its site

The typical investment size of a venture capital is:

- Early stage: $500\ K\ -\ 5\ mln$
- Later stage: $3\ mln\ -\ 10\ mln$

The risk changes overtime and the gain does too – depending on where they invest, things change, according to funding and venture capitals. This changes everything according to scaling:



Written by Gabriel R.

Venture capital (VC) is a form of private equity financing that is provided by venture capital firms or funds to startups, early-stage, and emerging companies that have been deemed to have high growth potential or which have demonstrated high growth. Venture capital firms invest in these early-stage companies in exchange for equity, or an ownership stake, in the companies they invest in.

In 2019 in Italy Venture Capital invested 597 million Euros on 148 deals. How does it work?

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

Usually funds invest together, since risk is shared and so is money (primary and secondary). They have a lot of power in trying to control and manage capitals and risks.

A corporate venture capital (CVC) is a big, well-established company, which sometimes has its own venture capital arms that invest in startups, aligned with their strategic goals. In other terms, the investment of corporate funds directly in external startup companies. Examples include CV and Intel Capital.

- They can supply very good networking / market knowledge
- They may act as a "captive market" – no competitors
- 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

A grant is a financial award for a business issued by a government, corporate, a non-profit entity or other entities. This is often done by the European Union via specific programs and do not need to be repaid – they focus on specific sectors and projects, so to target goals specifically and with attention.

- 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 (es. Green economy).

Then, there are the 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.

Basically, lots of support/training/services to make startups grow – incubation services (lawyers, programs, assets), management training, office space. Their intervention is in the beginning of the j-curve. For example, UniPD has an accelerator called Start-Cube, doing a program called Start-Cup. In USA you have a powerful plan called Y-Combinator.

- They may or may not ask for equity in return
- The funding vary (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

Written by Gabriel R.

There are the 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

There are specific 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)

In the end, to summarize how much each investor will take in terms of equity:

- Accelerator/incubators in general will get 1-5% up to 10%
- BA (Business Angels) will take between 10 to 20%
- VC (Venture Capitals) will take between 25% to 40%
- FFF depends on the specific context, given deals are highly informal
- Grants take 0%, given by nature they are mostly funding

18 INFO ON THE EXAMS + EXAM SAMPLE QUESTIONS (USEFUL)

(Given he takes it veeeery late, this lesson is added in order to give you context on the exam. It can be even two/three days before the exam – atrocious, yes – with the same set of slides every year, apart from 22/23 which was slightly more detailed compared to the other two/three present in previous years. So, think well if you want to do the first exam or the second one)

On the groups, some past indications:

- Well mostly questions are easy but last part with counting needs some time (not hard but too long) so better prepare your counting skills (and calculator)
- The class itself is really good. I suggested to go to the classes. The exam is a bit tricky, but you can do the oral examination too

On the written exam (duration: 2 hours)

- Theory part is easy and takes some questions + the Lean Canvas (11/12 questions)
- The calculations part, taking most of the exam and never done in the course apart from the last lesson – basically, hours apart from the exam
    - These calculations do not require the usage of a calculator, given they are not hard
- Bad/No answer = 0 points while Good answer = 1 point

On the oral exam (I asked in the group to get some info):

- It's exactly like the first part of the exam. The professor will ask you some questions to be sure you understand the concepts. It's alternative to written exam to increase your score.
- After written exam and getting your score you just need to contact with professor and ask for oral examination

Let's start going into the *real* questions of the exam simulation:

18.1 FIRST PART - THEORY QUESTIONS

1)

We have seen one of the classifications of startups as:

- *Startup to maintain the shareholders quality of life*
- *Big company spin-outs*
- *Family businesses*
- *Social impact companies*
- *Companies planned to scale up fast*
- *Companies planned to be sold quickly*

Where would you classify AirBnB?

- or -

Why do you think Big companies do spin-outs?

Written by Gabriel R.

Answer:

AirBnB is definitely a company which was designed to scale up fast, since it recognized early the market opportunities in the space renting sector and, by networking effects, it became a platform basically of sharing/renting, enabling a cycle of rapid growth and high scalability, accessing to capital funding of investors while scaling rapidly.

2)

What do you think is more important at the initial stage of a startup?

- *Define and validate a problem*
- *Have a brilliant idea*
- *Master a complex technology*

Why?

Answer:

Of course, the right answer is the first one: see if the problem was the real one present in the market and ensuring the value proposition is right according to the market we want to reach and its niches, facilitating the access with market fit. This allows both to develop a product able to actually satisfy the market and using intelligently both time and resources, facilitating fundraising and customer acquisition, diminishing the risk and enabling distinctive capacities avoiding misalignment.

3)

By looking at the Lean Canvas, how would you describe the "Unique Value Proposition" and what does it express?

Answer:

The Unique Value Proposition is what distinguishes the startup at a high level. The UVP articulates the core value or benefit you promise to deliver to your target customers. It's a clear, concise statement that explains:

- What your product/service is
- Who your target customer is
- The key benefit or value your product/service provides
- What makes your offering unique or different from competitors

The UVP expresses the most compelling reason why a customer should buy from you. It's the primary thing that differentiates your offering in the market.

4)

What is the "Vesting" period when we talk about Stock Options?

Answer:

The Vesting defines the period over which an employee earns the right to exercise their options to buy company stock. This process essentially ties the options to a schedule that incentivizes employees to remain with the company and contribute to its long-term success before they can fully own the stock options granted to them.

Written by Gabriel R.

Options typically vest over a period of several years, often four years. The "cliff" is the period at the beginning of the vesting schedule during which no options vest. After the cliff, options usually vest monthly or quarterly over the remaining vesting period.

Vesting can be based on time (as described above), but it can also be based on achieving certain milestones or performance goals. Some companies have provisions that accelerate vesting if certain events happen, such as the company being acquired, or the employee being terminated without cause.

Time you spend in the company before applying for the stocks

5)

Make an example of a traditional pipeline business

- or –

Are there "Platform" business models in real-life (no internet)?

Answer:

Pipeline business models do things linearly, following a step-by-step process. A classic example of a pipeline business is a manufacturing company, such as an automobile manufacturer. Let's consider the process:

- Raw materials are sourced from suppliers
- The raw materials are transported to the factory
- The factory processes the raw materials and components to manufacture automobiles
- Finished vehicles are shipped to dealerships
- Dealerships sell the vehicles to end customers

In this model, value is created in a linear, step-by-step process. The company controls the entire value chain from sourcing to production to distribution. This is a typical pipeline business where value flows from one end to the other.

Coca-Cola is another classic example of a traditional pipeline business model. In this model, Coca-Cola manufactures products, manages inventory, and distributes these products through a series of steps including production, marketing, and sales:

- *Production*: Coca-Cola produces its beverages by mixing raw materials like water, sweeteners, and flavorings.
- *Distribution*: The company then distributes these beverages through a global network of bottling partners and distributors.
- *Retail Sales*: Finally, the products reach consumers through various retail outlets, including grocery stores, restaurants, and vending machines.

This linear process of creating and selling products is characteristic of the pipeline business model, where value is created upstream and consumed downstream.

Often, infact, platforms are considered to be mostly tied to real-life platforms. There are several real-life, non-internet examples:

1. *Shopping malls*: A shopping mall is a physical platform that connects retailers with consumers. The mall owner provides the infrastructure (the building, common areas, parking, etc.), and retailers rent space to sell their products. The mall attracts customers, and the more customers it attracts, the more valuable it is to retailers. This is a classic two-sided platform model.
2. *Farmers' markets*: Farmers' markets are platforms that connect local farmers and food producers directly with consumers. The market organizer provides the space and coordinates the event, and farmers pay a fee or a percentage of sales to participate. The more farmers and the more diverse the offerings, the more attractive the market is to consumers.
3. *Credit card networks*: Visa and Mastercard are platform businesses in the financial sector. They connect merchants who accept card payments with consumers who use those cards. The more merchants in the network, the more valuable it is to cardholders, and vice versa. The credit card network sets the rules and facilitates transactions between these two sides.
4. *Newspapers*: Traditional newspapers are a form of a platform. They connect advertisers with readers. The newspaper provides content to attract readers, and this audience is valuable to advertisers who pay to place their ads. The larger the readership, the more the newspaper can charge for advertising.
5. *Industry trade shows*: Trade shows in various industries are platforms that connect buyers and sellers. The trade show organizer provides the venue and coordinates the event, and companies pay to exhibit their products or services. Attendees come to discover new products and suppliers. The more exhibitors and attendees, the more valuable the trade show becomes for all participants.

6)

What is a “lock-up” condition for a shareholder and why do you think this is important in the life of a startup?

Answer:

A lock-up condition is the time a specific shareholder must stay within the company (or specific rules trigger. It refers to a contractual provision that prohibits shareholders (often founders, employees, and early investors) from selling their shares for a specified period of time, often 90 to 180 days after a significant event like an IPO.

The purpose of the lock-up is to prevent a flood of shares from hitting the market all at once, which could depress the stock price. It's meant to provide stability in the early days of a company's public trading.

7)

Make an example of a good-leaver condition for a shareholder

Answer:

A good-leaver condition for a shareholder refers to provisions that allow a shareholder, usually an employee or founder, to keep or sell their shares if they leave the company under certain favorable circumstances. These circumstances might include retirement, death, disability, or termination without cause.

Suppose Emma is a co-founder and CTO of a startup. She owns 20% of the company's shares, which are subject to a four-year vesting schedule. The shareholders' agreement includes the following good-leaver condition:

If Emma's employment is terminated by the company without cause, or if she resigns for good reason (such as a significant demotion or relocation), she will be considered a "good leaver." In this case:

1. All of her unvested shares will immediately accelerate and vest in full.
2. She will have 90 days to exercise any of her vested stock options.
3. She will be released from any non-compete obligations.
4. The company or other shareholders will have the right to buy back her shares at fair market value, but she will not be obligated to sell.

In this example, the good-leaver condition protects Emma's ownership stake even if she leaves the company under certain circumstances. The accelerated vesting rewards her for her contributions and the circumstances of her departure. The extended exercise window and release from non-compete obligations give her flexibility in her next steps. And while the company has the right to buy back her shares, she is not forced to sell at an unfavorable price.

On the other hand, if Emma were to leave the company voluntarily without good reason, or if she were terminated for cause (such as misconduct or breach of fiduciary duty), she would likely be considered a "bad leaver" under the agreement. In this case, she might forfeit any unvested shares, have a much shorter window to exercise vested options, and potentially be required to sell her shares back at a discount.

18.2 Second Part - Simulated Story of a Startup

8)

Suppose that Eric, working at his master's degree thesis, under the direction of his professor, develops a demo of a very interesting AI-based algorithm which could be used to predict traffic in some cities. What would you suggest him as the next step in his startup career:

- *Look for substantial funding.*
- *Run to a consultant to help him found a startup*
- *Spend the next year in a lab trying to develop the algorithm into a mature, stable software*
- *Interview people looking for details in traffic management and finding potential similar software already facing this*

Answer:

Fourth answer of course, since the whole course is why are we doing this. In order: (4) – (3) – (1) – (2)

9)

Joe, Anna and Mike are three friends and colleagues deciding to found a startup. Joe and Anna will work full time, Joe as the CEO and as the one "on the market", Anna as the CFO and as the initial human resource recruiter. Mike will work 40% part time as the CTO – but will additionally put 5.000€ to start the company up (while Joe and Anna have no initial cash to invest).

They decide to share the stocks in 45%, 35% and 20% amounts. How would you assign the stocks and why?

Answer:

The maximum goes to the CEO, since he's the most invested in the company (45% is good, since he works full time) given the market role and the legal representation of the company. Mike is the CTO (bigger standing on the CFO) but he works two days a week, instead Anna works more (five days a week) and takes the 35%; in the end, Mike takes 20% is a part-time. So, in the end to summarize:

- Joe = 45%
- Anna = 35%
- Mike = 20%

10)

A Business Angel meets the founders of Zomaz, a novel startup dealing with smart e-maps. He decides to help the founders by giving them € 50.000 for the 10% of the society.

What is the pre-money evaluation of the company?

Answer:

How much is the company worth?

After the investment (after the round or post-money evaluation → $500.000€$ (so, $50.000 * 10$)

Basically, the computation is $Post\_money = \frac{Investment\ for\ equity}{Percentage\ equity} = \frac{50.000}{0.10} = 500.000€$

Written by Gabriel R.

Before the investment (before the round or pre-money evaluation → $500.000 - 50.000 = 450.000€$

Basically, the computation is $Pre\_money\ evaluation = (Post\_money\ evaluation - Investment)$

(Or conversely = $Post\_money\ evaluation = (Pre\_money\ valuation + Investment)$)

11)

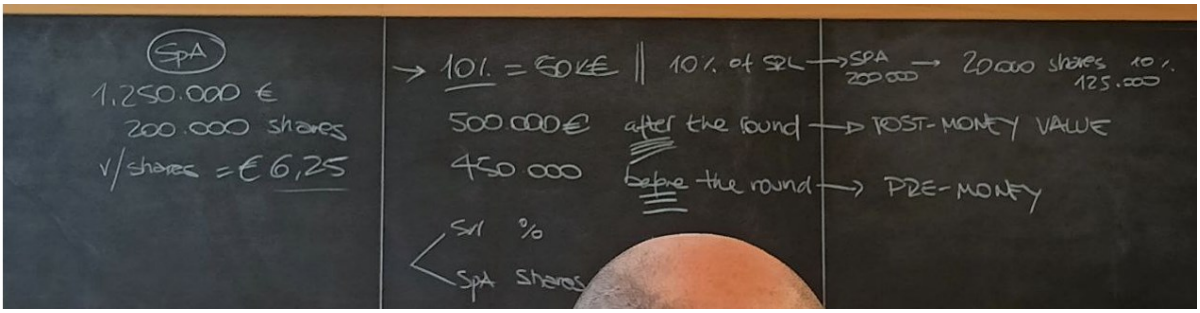
After some years Zomaz becomes an "SpA" with 200.000 shares and with an overall value of € 1.250.000 – what is the value of a single Zomaz share?

Answer:

Simply divide the overall value for the shares: $\frac{1.250.000}{200.000} = 6.25€$.

Consider Srl are made with percentages, while SpA reason by shares.

This scenario in which the Srl becomes SpA: 10% of Srl → SpA with 200.000 → 20000 shares = 10 % = 125.000 (see here as reference for passing from Srl to SpA)



12)

After some years, a Venture Capital firm invests in Zomaz and gets the 20% of the company, with a liquidation preference of 2x of the initial investment (2.2M€) with full participation. Zomaz is then sold completely for 9M€.

- *(1) How much will the Venture Capital firm receive for its shares covering the 20% of the overall company?*
- *(2) How much will be left for the rest of the shareholders?*
- *(3) Will the Venture Capital firm get also a part of this second level value?*
- *(4) Compare the ending results for the Venture Capital firm and for the CEO who also owns the 20% of the company at selling time*
- *(5) What if Zomaz is sold completely for 4M€? How much will the rest of the shareholders get?*

Answer:

(1)

Post-money: $2.2M * 5 = 11M$
Pre-money: $11 - 2.2 = 8.8M$ = Post money – investment
Full Zomaz sold for 9 millions → things went very bad

The VC has a 2x liquidation preference on their investment of 2.2 million euros. Thus, they are entitled to 4.4 million euros off the top when Zomaz is sold.

Written by Gabriel R.

After satisfying the VC's liquidation preference, the remainder is 9 million euros - 4.4 million euros = 4.6 million euros.

The VC still participates in sharing the remaining proceeds due to their full participation rights. They get an additional 20% of the remaining 4.6 million euros, which is 920,000 euros

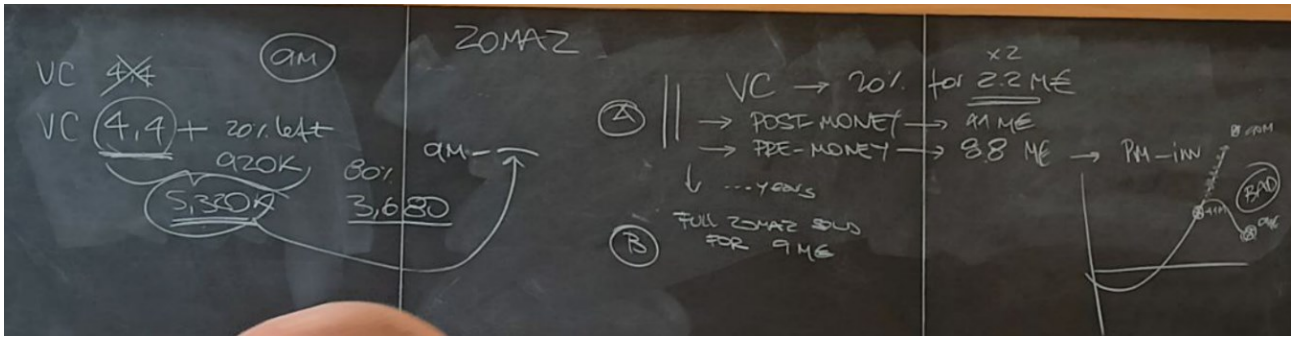
$VC = 4.4M + 20\%\ left\ from\ liquid.preference = 4.4 + 920K = 5{,}320M$

Liquidation preference = first give back the money they gave you

(2)

After the VC's total receipt of 5.32 million euros, the remaining funds to be distributed among other shareholders are 9 million euros - 5.32 million euros = 3.68 million euros.

Investors get → $9M - 5{,}320M = 3{,}680M$



(3)

Yes, the VC will get $5.320\ M$.

The VC firm has full participation rights, meaning after receiving their liquidation preference, they still participate in the distribution of the remaining sale proceeds. After the liquidation preference, there's 4.6M€ left, of which the VC firm would claim an additional 20% (due to their equity stake). This is 20% of 4.6M€ = 0.92M€. So, in total, the VC firm receives 4.4M€ + 0.92M€ = 5.32M€.

(4)

Venture Capital Firm:

- The VC firm's investment terms include a 2x liquidation preference on their initial investment of 2.2 million euros, totaling 4.4 million euros.
- After receiving this preference, the remainder of the sale proceeds is 9 million euros minus 4.4 million euros = 4.6 million euros.
- Additionally, the VC has full participation rights, allowing them to claim 20% of the remaining 4.6 million euros. This amounts to 920,000 euros.
- Therefore, the total amount received by the VC firm is 4.4 million euros (liquidation preference) plus 920,000 euros (participation in the remainder), totaling 5.32 million euros.

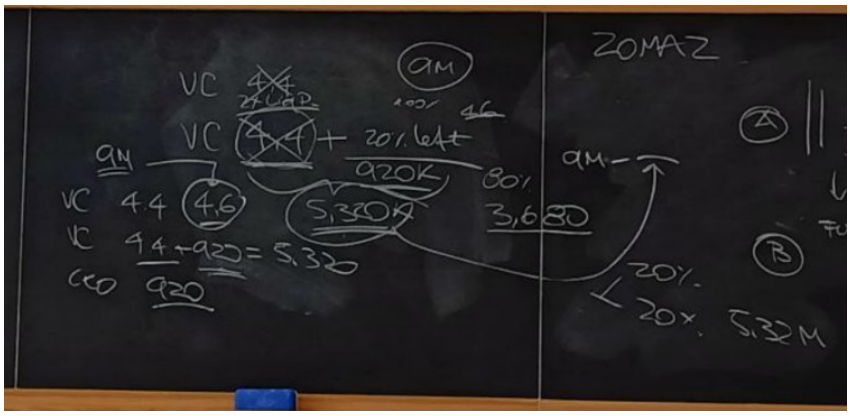
CEO:

- The CEO, owning 20% of the company but without any special liquidation preference or participation rights, would normally expect to receive 20% of the total sale proceeds.
- However, the liquidation preference paid to the VC first reduces the available proceeds to 4.6 million euros.
- The CEO then receives 20% of this remaining 4.6 million euros, which is 920,000 euros.

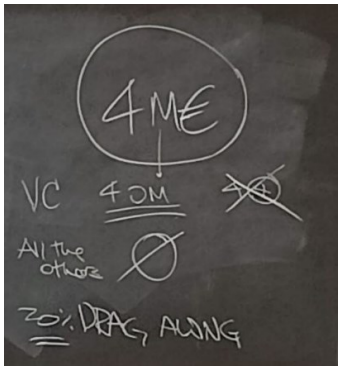
So, the VC will get $5.320\ M$ while the CEO takes the 20% of the total $(9M)$ without the liquidation preference (4.4), which allows to get $4.6 \rightarrow 9 - 4.4 = 4.6M$.

Then, there is the 20% cut over 4.6, which is 920. This is correct, since this quote is added to the 4.4 of the VC, which allows us to get back the $5.32 \rightarrow 4.4 + 920 = 5.320$. Such is shown below.

(5)



Suppose the company sells for 4 million, how much the stakeholders get?



- First, the VC would receive their liquidation preference, which is 2x2.2M€ = 4.4M€. However, since the total sale is only 4M€, the VC can only receive the full sale amount
- As the sale amount is less than the VC's liquidation preference, there is nothing left for other shareholders. The VC absorbs the entire sale amount of 4M€ due to their liquidation preference, and the rest of the shareholders receive nothing

Why the CEO allowed the VC to do all of this while he gets 0?

There is a specific clause, which is the drag along on his 20% → recall the definition

Specific shareholder *can trigger* the call option of other shareholder when selling his/her participation

Right to sell the company and you accept my offering, you get 4 millions and get back the 400000, so to get at full 4.4.

In the scenario where Zomaz is sold for a lower amount (e.g., 4 million euros), despite the initial high expectations and investments, the drag-along clause becomes crucial. It allows the VC, holding significant influence and investment preference, to enforce the sale of the company to recoup their investment as much as possible, even if it means that the CEO and other minority shareholders may receive little to no return on their shares.

Written by Gabriel R.

At the time of the VC's investment, the CEO agreed to the drag-along clause possibly under the assumption that it would be unlikely to be used under such detrimental conditions, or because the investment terms were necessary to secure the needed capital for growth.

The CEO might have had to compromise on certain terms, including the drag-along clause, to attract significant capital from the VC, especially if the company was in urgent need of funding.

13)

What do we mean by FFF?

Answer:

FFF stands for "Friends, Family, and Fools." It refers to the initial sources of funding that many startups rely on in their very early stages, before they are ready for professional investors. Entrepreneurs often turn to their personal networks - friends, family members, and others ("fools") who believe in them and their idea - for initial seed capital.

While this capital can help get a startup off the ground, it's usually not sufficient for significant growth and comes with the risk of straining personal relationships if things don't go well.

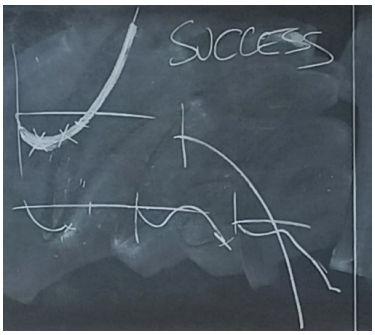
So → no relationships, no contracts

14)

Why, in a typical J-Curve, there is always a first period of cash-loss (valley of death) and what are the key-facts that affect the trend of the curve?

Answer:

The J-Curve is a graphical representation of the typical path that a startup's cash flow follows over time. The curve gets its name from its shape: it starts with a downward slope (representing negative cash flow), reaches a low point, and then gradually trends upward (representing positive cash flow).

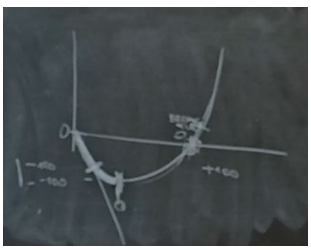


The period of cash loss is defined as the “valley of death”, common and expected phase for most startups since there are upfront investments, limited revenue and customer acquisition costs which can limit the initial non-existent revenue of said startup.

So → the j-curve represents the typical successful startup curve

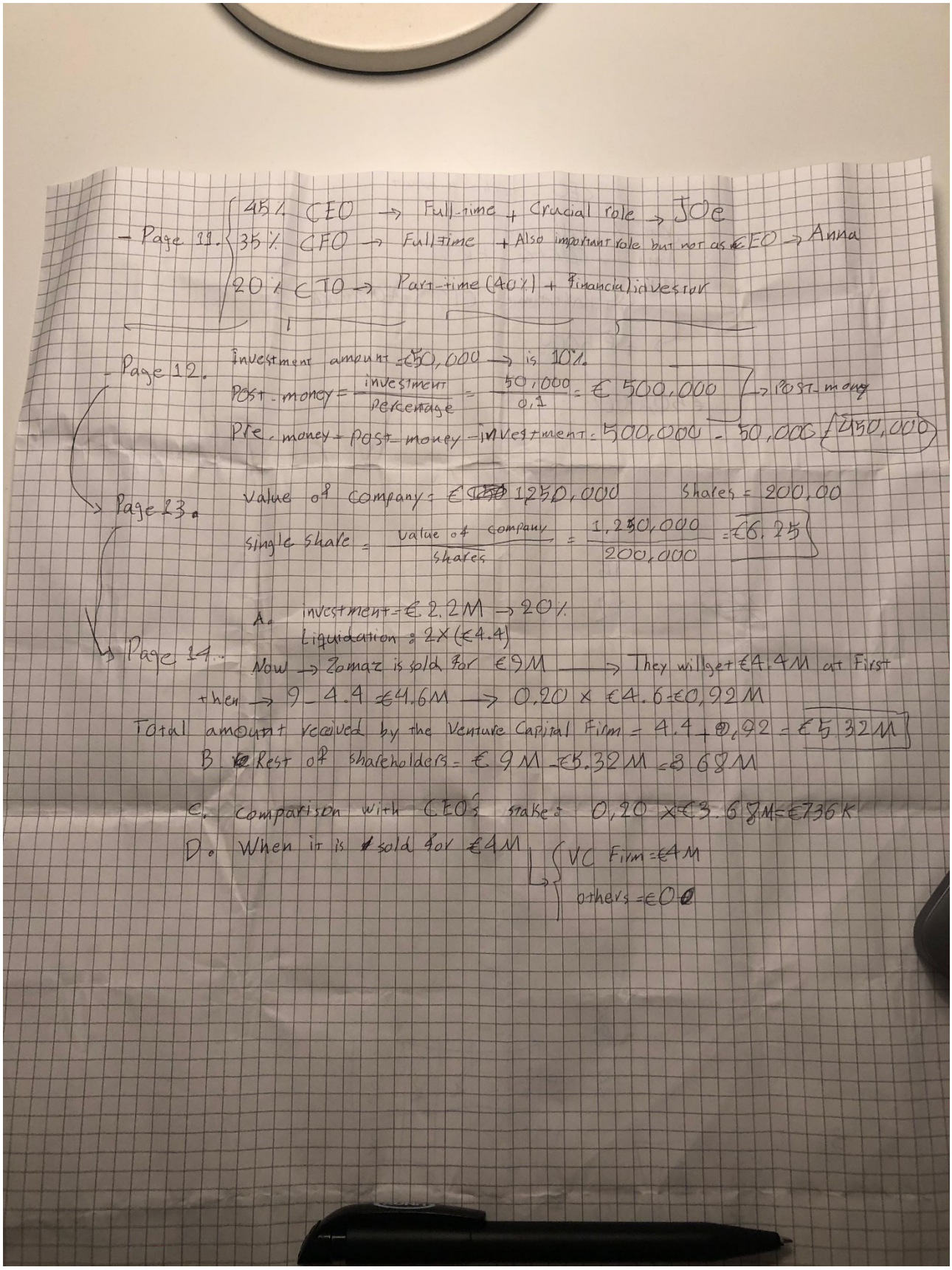
The phases are as follows:

- Slopes going down (remember here we are making money anyway)
    - start having customers
    - loss equal to the profits
        - specifically → accumulated losses = accumulated profits
- Breakeven point → slope starts going up again



Written by Gabriel R.

From this year group, a collective solution.

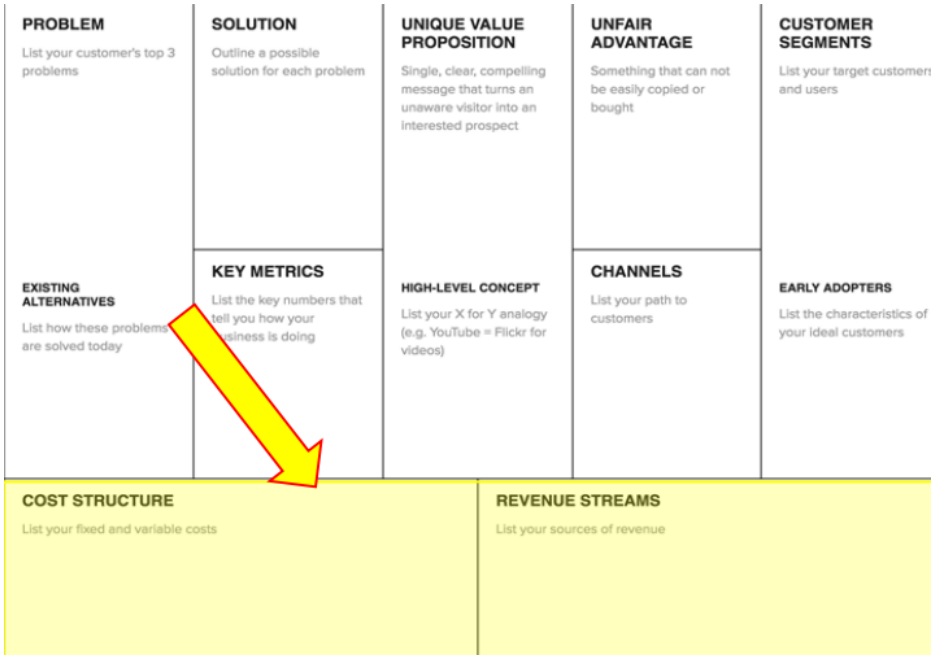


Written by Gabriel R.

19 LESSON 15 – BUDGETING

(We will cover this topic very briefly, since it's made in half an hour in the last lesson to complete the whole theory – yeah, even more outraging given this is the last lesson given two days before the first exam. For this reason, such concepts will not be asked in the exam)

Now, we're looking for "gems": where the money comes from. Consider we're at the bottom of LC, specifically on this part:



What is a budget?

- An *estimation* of revenue and expenses over a specified future period of time and is usually compiled and re-evaluated on a periodic basis. Budgets can be made for a person, a group of people, a business, a government, or just about anything else that makes and spends money."

Everybody does some kind of budgets in some ways, in his everyday life. Consider this stupid example:

- *Revenues*
  - Salary: € 1.000
  - Book Sale: € 15
- *Expenses*
  - Rent: € 500
  - Videogames: € 10
  - Food: € 500

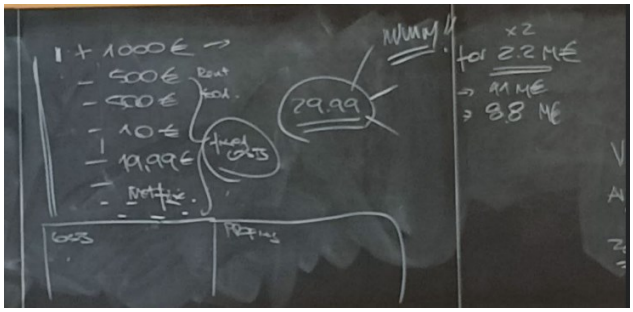
This is not far from reality: initial startup budgets do not look very different from this.

Written by Gabriel R.

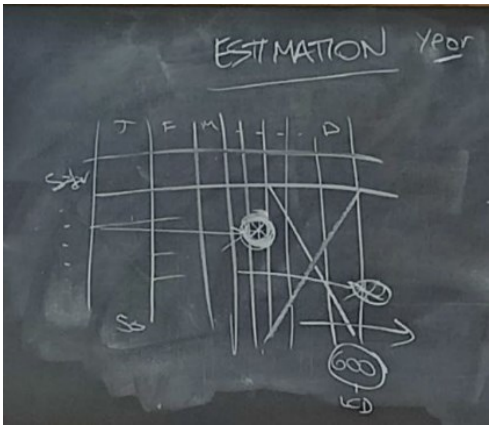
These are called fixed costs (comprehending also fixed revenues) → the essence is that you get some money from the market, and you also know you have some costs.

Consider there are moments in time in which costs are greater than profits (or the contrary).

See the j-curve, when there are costs, we are in the valley of death of the j-curve.



The most important document is the estimation document for the year; consider the budget is an estimation of revenues and costs which allow you to manage the life of startups and alike. Infact, "Failing to plan is planning to fail". Investors know this; with no plan, bad events can happen at any time, if you have a plan you have countermeasures.



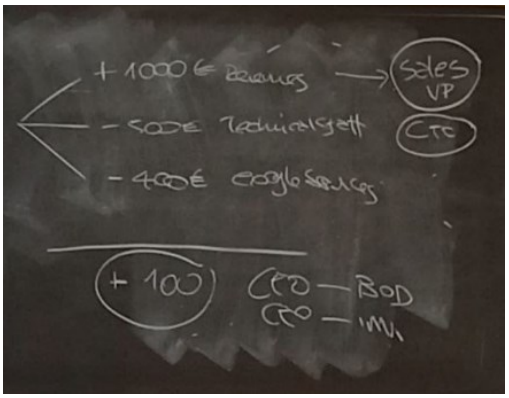
In confidential terms, there can be the "fuckup plans" (recovery plans) and related recovery funds – e.g., bad events, employees becoming sick/becoming pregnant, etc.

Continuing with the *definition* of the budget:

- A budget is an invaluable tool to run a business efficiently and effectively. It describes, in monetary terms, a plan over a period of time (normally one year) and it contains specific targets to be assigned to a specific responsibility
- It is used to express a strategic plan in measurable terms

The board of directors shows data concretely and allows to demonstrate the company facts, where the budgets is shown an relative estimates so to accurately inform stakeholders over the company's operations.

Each one has a different budget, so whenever an event happens, responsibilities need to change accordingly (e.g. if CTO raises the salary, everyone needs to rearrange himself in order to accommodate for these expenses)



Written by Gabriel R.

Each stakeholder has some capital and some role; if everyone works aligned, the plan does too, and the company goes strong. Managing the market is important, but managing the operations is even more important. If one fails, the whole company goes down, being shredded in pieces.

The budget has some key uses:

- 1. A budget can be subdivided in very specific and detailed budgets at any level, entirely keeping its planning, objective & control features
- 2. Budgets can be used to evaluate and readapt a specific operational performance (flexible, variable period budgets), to evaluate the budget construction process (fixed yearly budget)
- 3. Budgets make targets/objectives extremely clear (KPI) and are normally used to determine i.e. bonuses or stock options, etc.
- 4. It is a *dialogue tool* with your investors

How do you do that?

- You can improvise (not recommended – "a braccio")
- You p resent yourself with data, carefully redefined and precise

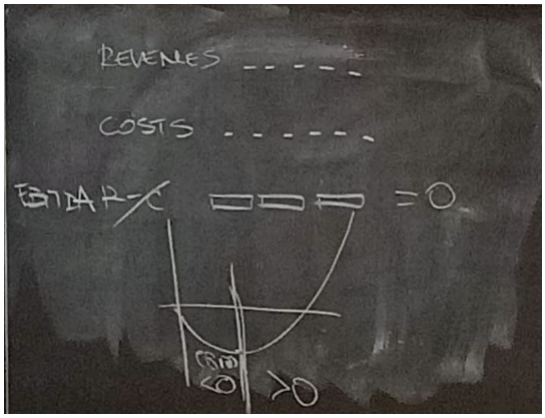
Remember: every meeting starts with the discussion of the budget, raising to the number written in the budget estimation (*forecast*) by the end of the year – otherwise failing.

Some *terms* here (just quoted):

- Revenues vs profits
  - Revenues are the total income generated by sales of goods or services. Profit is the surplus left after costs have been deducted
- Fixed budget
  - Done at the beginning of a period (normally a year), it expresses the management strategy, main objectives and targets and it is not modified. Revenues, Costs, Profits
- Flexible budget
  - In-itinere variation of the budget which accounts for events happened during the year and obtained achievements, adjusting some of the results in a flexible way
- Forecast vs budget
  - A forecast is a simple forecast of a result, without the expression of any responsibility, target or strategy. It is normally used to give a short-term view of what is going to happen vs what should have happened
- Actual
  - "What has happened" → Brings to the Financial Statement – (Bilancio di Esercizio)

What we actually care about is the EBITDA - Earnings Before Interests, Taxes, Depreciation, and Amortization (profits less the costs basically). More completely, is a *measure* of a company's overall financial performance and is used as an *alternative* to simple earnings or net income in some circumstances.

- EBITDA is a widely used metric of corporate profitability
- EBITDA can be used to compare companies against each other and industry averages
- Also, EBITDA is a good measure of core profit trends because it eliminates some extraneous factors and allows a more "apples-to-apples" comparisons
- EBITDA can be used as a shortcut to estimate the cash flow available to pay the debt of long-term assets



The EBITDA before the j-curve is negative.

- If company has EBITDA of 10% → it's good
- if company has less → it's bad

Financial statements (bilanci d'esercizio), in business economics, are the set of accounting documents that an enterprise must prepare periodically, in accordance with the law, in order to pursue the principle of truth and ascertain clearly, truthfully and fairly its financial position, at the end of the relevant administrative period, as well as the economic result for the financial year itself.

It is governed by the Civil Code-the documents that must be prepared are:

- *Income Statement (Conto Economico)*
  - Shows the economic result during the reporting period (profit or loss for the year)
- *Balance Sheet (Stato Patrimoniale)*
  - Divided into assets and liabilities, with related macroclasses
- *Notes to the Financial Statements supplement the Income Statement and Balance Sheet*
  - Comes with a number of indications and information not found in the two financial statement documents above
- *Cash Flow Statement* (as of August 15, 2015) (Rendiconto Finanziario)
  - It summarizes the cash flows for a given period. Main indicator for understanding the liquidity of a company and its ability, e.g., to pay its suppliers

Some common criteria in Italy (left) and reclassification of income statement (right):

RICAVI DELLE VENDITE	**7.200.542**	**100%**
Rimanenze iniziali	750.454	
Acquisti	4.012.924	
Rimanenze finali	793.583	
CONSUMO MATERIE PRIME	**3.969.795**	
Costi variabili di produzione	364.524	
Costi variabili commerciali	865.111	
Costi variabili	**1.229.635**	
Margine di contribuzione	**2.001.112**	**28%**
Costi di struttura	645.981	
Salari e stipendi	356.509	
Accantonamento TFR	20.184	
Costi fissi	**1.022.674**	
EBITDA	**978.438**	**14%**
Ammortamento imm.materiali	116.918	
EBIT - REDDITO OPERATIVO	**861.520**	**12%**
Interessi passivi	75.692	
Reddito ante imposte	**785.828**	
Imposte di esercizio	**316.606**	
Risultato di esercizio	**469.222**	**7%**

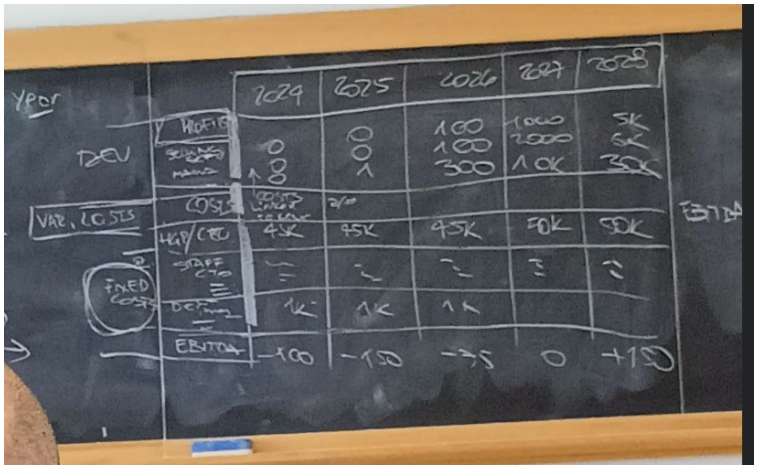
Even in the project, it's important to give forecasts of first year's revenues and costs of a startup.

Some advice for your plan:

- 1. *Setup a 3- or 5-year plan with a very clean budget* structured in revenues, costs (variable/fixed), profits and with Investments. Break it down (but not too much, see next point).
- 2. *KISS (Keep it Simple Stupid)* – a too complex financial plan, at this stage, is difficult to setup – prefer a simpler approach: main costs and profits expressed clearly and cleanly.
- 3. *Remember the J-Curve* – plans that diverge from this well-known paradigm may exist but should be carefully explained and motivated
    - Check how your numbers turn into a graph
- 4. *"Read between the lines"* – Numbers are not numbers. They describe your trajectory, so if they are well thought, they are organic and cross-related in a coherent way.
    - Check the YoY% (Year-over-Year) shift of numbers describing similar phenomena

But, most importantly, it's the 5-year budget estimation (which is in the Moodle and past years' versions always there). The investor only considers the curve, and nobody will ever listen you.

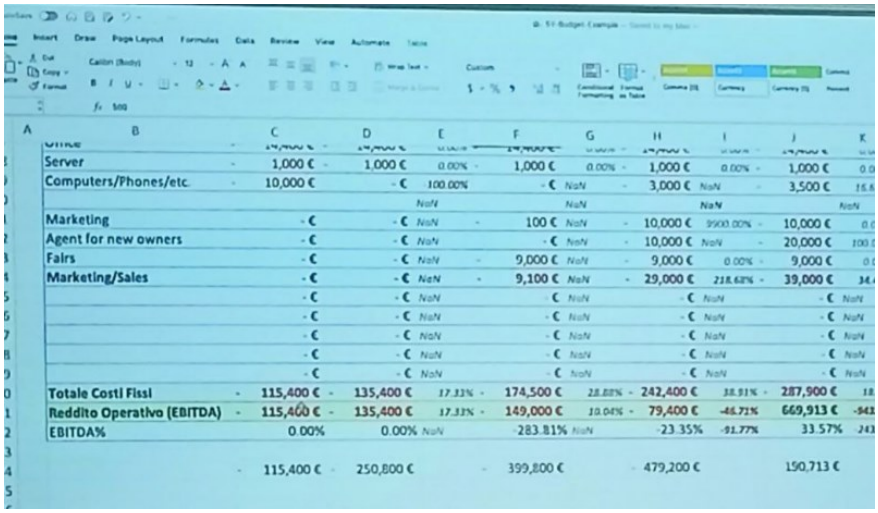
They are written in a standard language (so to have roles and stats written clearly and simply). An example is the following:



Written by Gabriel R.

Fixed costs are the ones they are always there – nevertheless of what happens. Variable costs, instead, depend on how much the business does (specifically, they depend on the revenue).

Here, to conclude the theory, an excerpt of said Moodle example.



	C	D	E	F	G	H	I	J
Server	1,000 €	1,000 €	0.00%	1,000 €	0.00%	1,000 €	0.00%	1,000 €
Computers/Phones/etc.	10,000 €	- €	100.00%	- €	NaN	3,000 €	NaN	3,500 €
			NaN		NaN		NaN	
Marketing	- €	- €	NaN	100 €	NaN	10,000 €	9900.00%	10,000 €
Agent for new owners	- €	- €	NaN	- €	NaN	10,000 €	NaN	20,000 €
Fairs	- €	- €	NaN	9,000 €	NaN	9,000 €	0.00%	9,000 €
Marketing/Sales	- €	- €	NaN	9,100 €	NaN	29,000 €	218.68%	39,000 €
	- €	- €	NaN	- €	NaN	- €	NaN	- €
	- €	- €	NaN	- €	NaN	- €	NaN	- €
	- €	- €	NaN	- €	NaN	- €	NaN	- €
	- €	- €	NaN	- €	NaN	- €	NaN	- €
	- €	- €	NaN	- €	NaN	- €	NaN	- €
Totale Costi Fissi	115,400 €	135,400 €	17.33%	174,500 €	28.88%	242,400 €	38.91%	287,900 €
Reddito Operativo (EBITDA)	115,400 €	135,400 €	17.33%	149,000 €	10.04%	79,400 €	-46.71%	669,913 €
EBITDA%	0.00%	0.00%	NaN	-283.81%	NaN	-23.35%	-91.77%	33.57%
	115,400 €	250,800 €		399,800 €		479,200 €		150,713 €

Written by Gabriel R.

20 INFO ON THE PROJECT & FINAL PROJECT PRESENTATION

The final project composes basically a good part of the exam; you decide, together with your group and the professor, when to do it. When is it held? The professor when asked will tell the following:

- A few days after the theory exams. The dates of the theory exams have been already published, while the presentations will be agreed between us in the following days.

Honest advice on this:

- It strictly depends on the nature of your problem what to do; start with interviews or anything to validate the problem and gather data
- Be sure to be organized but also to question yourself and pivot; maybe your problem is not working, so do not persist in something for the sake of it
    - In case, ask the professor and do not be afraid to ask him help of talk to him; he can give you advice and contacts to help you

The presentation are held in two sessions in line with the written exams and if one has the chance to organize differently can also go to his company or arrange things a different way in order to make it - one can organize with him directly, he's not strict, as we please.

More details on *how to do* the actual presentation:

- He gives you 20 minutes in total, so 15 to talk and 5 for questions

Some advice on how to *structure* the actual presentation:

- Just follow some logic structure in creating it (also the structure from project creation is good: find problems — state problems — ideas on solution — final idea) = this is what I was told in the groups
-

21 OLD EXAMS

(This section was painstakingly made with the collaboration of different people and to ensure good/complete preparation for the actual exam, given the theory is easy, but the rest is not)

21.1 2023-07-05

(This was made by four people in order to help you the most)

Q1. When we talk about "the third Mission of the University", what are we referring to?
1. Persuade researchers and professors to provide consultancies also outside the university.
2. Improving post-lauream education with technology-oriented Innovation courses.
3. Bring the outcome of research into the market and the real society.

Answer:

Answer: (3)

Q2. During the course we have considered Steve Blank six categories of startups. Would you please list them and say where you think a small shoe repair shop belongs to?
Answer:

Answer: Taken from my notes

A startup is always inside the valley for death, dying and growing for finding a repeatable business model. More in general, they can be grouped into 6 categories:

- *Designed to be scalable* (and to do it *quickly*)
    - Scalable startups tend to group together in innovation clusters
        i. 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, they attract all the risk capital (and press), with goal of expanding
    - Examples: Facebook / Tesla / TikTok / Amazon AWS/ Airbnb / Uber / Netflix
        - made from the start to always improve and grow
        - tend to group together in innovation clusters

- *Family business* (Small business)
    - They work as hard as any other entrepreneur and 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"
    - Examples: home based food services, plumbing, restaurant, small niche markets
    - Other example discussed: UNOX – build professional ovens
        i. goal of maintaining the family

- *Lifestyle business* (also called Lifestyle venture)
    - A business run by its founders primarily with the aim of sustaining a particular level of income and no more
        i. 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*

Written by Gabriel R.

    i. It's meant to be a business which adjusts to the lifestyle - so that the founder can live their life as they like – also, try to survive is a goal
    ii. Typically with limited scalability
- e.g., Moderna – the ones with the vaccines, working in lab with very little money
    i. typical entrepreneur, with goal to make the most money
    ii. the first to sell it as fast as possible and expands among existing businesses
    iii. it requires time and infrastructure to do that on the market

- *Startups designed to be sold quickly*
    - Their goal is not to build a billion dollar business, but to be sold to a larger company
    - The goal of the management is different than that of building a profitable business
    - Examples: pharma, hi-tech, entertainment-related companies, software/game devs

- *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 wealth for the founders
    - Expanding and offering things to the market receiving donations, sponsorships, etc.
    - Saving people, dealing with diseases, handicaps, third/unindustrialized countries
    - Profits are thanks to charities or donations

- *Spin-off from existing companies* (Startup from large companies)
    - Company generated from a very big one, shaping as a small company
    - There is a proposal to go away from big company, abandoning the wage and getting help from the main company
    - The company could easily buy back the idea if the idea succeeds
    - Changes in customer tastes, new technologies, legislation, new competitors, etc., can create pressure for more disruptive innovation
        i. requiring large companies to create entirely new products sold to new customers in new markets
    - They are “transformational innovation projects” of large companies
    - Some reasons
        i. failure → there is always the risk to do that
        ii. branding → spoil the main brand with a product to not detach reputation
        iii. speed and flexibility
    - Main reasons
        i. *speed* → not dependant to the times of big companies for time and resources
            1. things are always done to not freeze practices
            2. works with processes and shares themselves
        ii. *motivation* → you either die or succeed
            1. because of less resources and salaries

Q3. In Ash Maurya Lean Canvas, can you describe what the “Key Metrics” square describes?
Answer:

Key Metrics allow you to track and evaluate the success of a specific business process. A Key Metric could be daily visitors to your site, the number of company emails opened by consumers per hour or the monthly sales of a specific feature.

Q4. What does Steve Blank's "Get out of the building!" sentence refer to?
1. Don't look for answers in the computer, go talk to people!
2. Don't spend too much time in front of the computer of your will get exhausted, get out and enjoy.
3. Don't spend too much time in the university but find a job as soon as possible.

Answer:

Answer: (1)

Q5. What is the key element that comes into play when passing from the Problem/Solution Fit phase to the Product/Market Fit one?
Answer:

Answer: Money (not MVP – it's in both phases and this is the main goal)

Q6. What does the Lean Startup Methodology deal with?
1. It deals with implementing Toyota Lean Production methods into a startup.
2. It deals with implementing rapid, iterative market checks to validate a product idea.
3. It deals exclusively with Agile software development.

Answer:

Answer: (2)

Q7. Considering three different types of investors, please put them in the order you expect them to interact with a startup going from its first days to its scale-up phase:
1. Venture Capital
2. Business Angels
3. FFF

Sequence:

Answer: (3) – (2) – (1)

Q8. What is a key success factor of platform business models?
1. The Web Effect.
2. Being more "actual" (while traditional pipeline models are "old").
3. The Network Effect.
4. The higher speed of the Internet.

Answer:

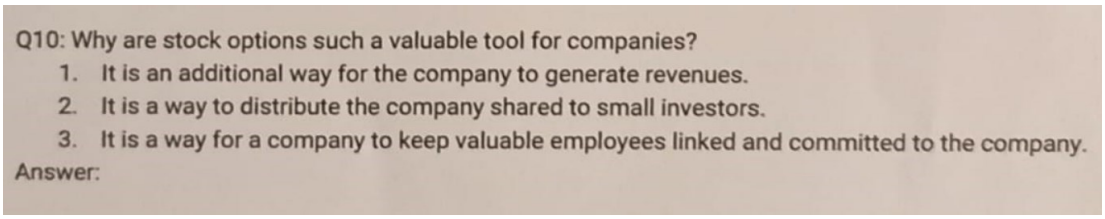
Answer: (3)

Q9: How would you describe a specific "Budget", in a startup?
1. It's the cumulated revenue and expenses of the previous year.
2. It's an estimation of revenue and expenses in a future period of time.
3. It's the cumulated revenue and expenses of the previous months of the current year.

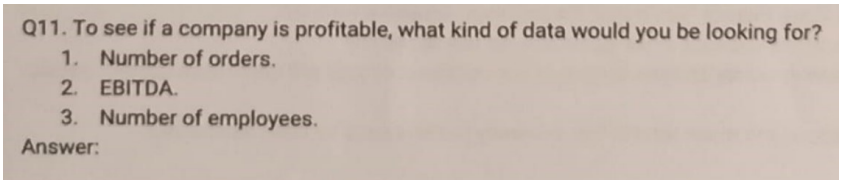
Answer:

Answer: (2)

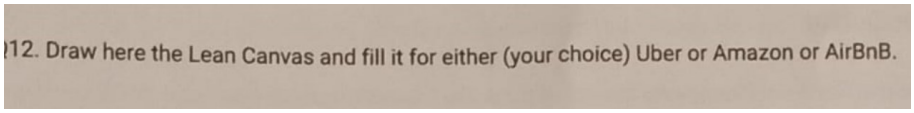
Written by Gabriel R.


Q10: Why are stock options such a valuable tool for companies?
1. It is an additional way for the company to generate revenues.
2. It is a way to distribute the company shared to small investors.
3. It is a way for a company to keep valuable employees linked and committed to the company.
Answer:

Answer: (3)


Q11. To see if a company is profitable, what kind of data would you be looking for?
1. Number of orders.
2. EBITDA.
3. Number of employees.
Answer:

Answer: (2) – EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization


12. Draw here the Lean Canvas and fill it for either (your choice) Uber or Amazon or AirBnB.

For the sake of simplicity, I'll adopt a text-like layout (using some good'ole GPT as support) doing the LC of Uber first.

- *1. Problem*

Limited taxi availability: Prior to Uber, securing a taxi was often problematic in many cities.

Inconsistent pricing and experience: Customers frequently faced issues such as fare discrepancies and varied quality of service.

Payment inconvenience: Traditional taxis typically required cash or card payments at the end of the ride, which could be cumbersome.

- *2. Customer Segments*

Urban commuters: People residing in urban areas who require quick and reliable transportation.

Travelers: Those in need of convenient transport options from airports and hotels.

Tech-savvy individuals: Customers comfortable with using smartphones and apps for service access.

- *3. Unique Value Proposition*

"Your personal driver": Uber positioned itself as a luxury yet affordable service that offers a personal driving experience.

Convenience and reliability: The app enables users to book rides anytime and track their rides in real-time.

- *4. Solution*

Mobile app: A user-friendly app that connects drivers with passengers based on location.

Driver rating system: Ensures quality and safety by allowing users to rate their experience.

Written by Gabriel R.

Dynamic pricing model: Prices increase with demand to ensure availability.

- *5. Channels*

Mobile application: The primary channel through which customers interact with the service.

Social media and online marketing: For promotion and user engagement.

Word of mouth: Strong user experiences that lead to personal recommendations.

- *6. Revenue Streams*

Percentage of fare: Uber takes a percentage of each fare from the drivers.

Surge pricing: Higher charges during peak demand times increase revenue.

Partnerships and business travel accounts: Collaborations with businesses to manage corporate travel.

- *7. Cost Structure*

Technology development: Continuous investment in app development and new features.

Marketing and promotions: Costs to acquire new users and retain existing ones.

Operational costs: Expenses related to staff, legal compliance, and office maintenance.

- *8. Key Metrics*

Active riders and trips: Measures growth through the number of users and frequency of use.

Driver retention rate: Critical for maintaining a reliable service.

Customer satisfaction: Measured by ratings and feedback.

- *9. Unfair Advantage*

Brand recognition: Uber became synonymous with ride-sharing, creating a strong brand.

First-mover advantage: As one of the first to market, Uber established a large user base and significant data to optimize its operations.

We do the same for Amazon, looking at its early days as a bookstore:

- *1. Problem*

Limited access to physical bookstores: Many people had limited access to bookstores with broad selections, especially in smaller towns or internationally.

Inconvenience of buying books offline: Traditional shopping required commuting, browsing, and sometimes returning empty-handed if the desired book wasn't in stock.

High overhead costs of physical bookstores: These often led to higher prices due to the costs associated with maintaining a storefront and inventory.

- *2. Customer Segments*

Book readers: Individuals looking for convenient access to a wide variety of books.

Written by Gabriel R.

Students and researchers: Those in need of textbooks or specialized literature that might not be available locally.

Collectors and niche audiences: People searching for rare, out-of-print, or specialized books.

- *3. Unique Value Proposition*

“Earth’s biggest bookstore”: Amazon positioned itself as a one-stop-shop offering a greater selection than any physical bookstore could provide.

Convenience: Users could search for, find, and order books from the comfort of their homes.

Competitive pricing: Reduced overhead costs allowed Amazon to offer competitive pricing, including discounts on best-sellers and other popular titles.

- *4. Solution*

Online marketplace: An easy-to-navigate website that allowed users to browse an extensive catalog of books, view recommendations, and place orders online.

Customer reviews: Amazon introduced customer reviews early on, helping other buyers make informed decisions based on peer insights.

Efficient logistics and distribution: Leveraging strong logistics to deliver books quickly and efficiently across vast geographical areas.

- *5. Channels*

Website (Amazon.com): The primary channel through which customers interact with the service.

SEO and online marketing: Utilizing search engine optimization and online ads to attract traffic.

Partnerships: Early on, Amazon established relationships with publishers and authors to ensure a wide catalog and promotional deals.

- *6. Revenue Streams*

Sales of books: Revenue generated directly from book sales.

Shipping fees: Initially, Amazon charged for shipping, which was later transformed into a revenue stream via the Amazon Prime subscription.

Third-party sellers: Amazon later expanded to allow third-party sellers on its platform, taking a cut of their sales.

- *7. Cost Structure*

Warehousing and logistics: Significant investments in inventory and logistics infrastructure.

Technology development: Continuous investment in developing and maintaining the e-commerce platform.

Marketing and customer acquisition costs: Significant spending on advertising and promotions to attract and retain customers.

- *8. Key Metrics*

Written by Gabriel R.

Customer acquisition and retention rates: Critical for growth and long-term viability.

Sales volume and turnover: Tracking the number of units sold and the speed of inventory turnover.

Customer satisfaction and feedback: Measured through reviews and customer service interactions.

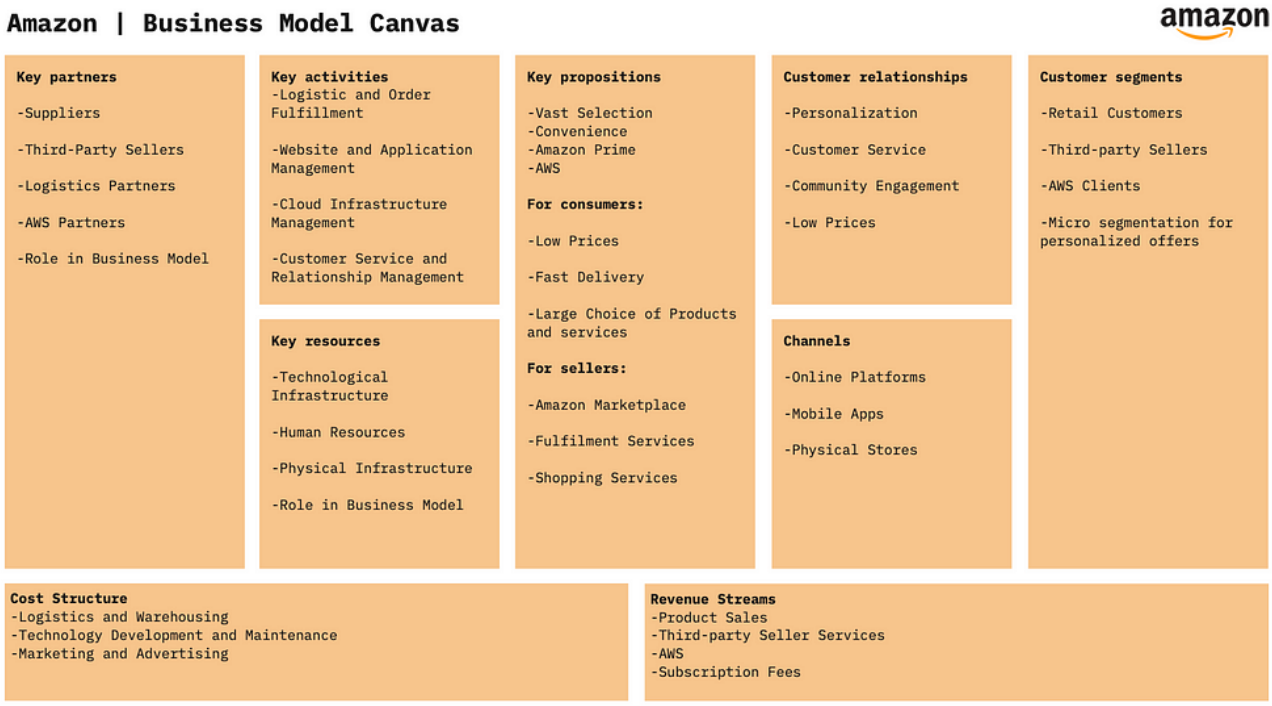
- *9. Unfair Advantage*

Scale and data: Amazon's ability to scale quickly and use data to optimize operations and customer experience became a competitive moat.

Brand recognition and trust: As Amazon grew, its brand became synonymous with online shopping, engendering trust and customer loyalty.

First-mover advantage in online book sales: Amazon was one of the first to market in a massive way, allowing it to set standards in online retail and collect valuable customer data.

Another example from here:



RoboCutter

Sheila and David are friends who studied at the same Engineering department and worked on a novel way to optimize wood cutting by applying a Vision-based AI algorithm to minimize wood cutting process wastes and performing high quality cuts maximizing the value of wood natural features. Their algorithm works well in a laboratory environment, simulated by Matlab. Now they are thinking to leave the university and launch a startup offering this technology to wood cutting machinery manufacturers.

Q13. If you suggested them to start looking for a first limited investment, how would you use such an investment?

1. Look for money! You have to run and industrialize the product as soon as possible!
2. Do an Advertising Campaign to have orders as soon as possible!
3. Go and perform some interviews to validate your product ideas as soon as possible!

Answer:

Answer: (3)

At a fair, Sheila and David meet Mark, an old friend working as a sale agent for a big company distributing wood cutting machinery. Very useful link! They talk to Mark about their idea and Mark gives them big insights on the industry, confirming their ideas: nobody is currently offering that feature yet!! Sheila and David decide to propose to Mark to join them and build a startup. Mark accepts. Since he is already working, he will dedicate to the company just a day every week. Sheila and David, instead, will work full time – Sheila will take the role as the CEO and will follow sales and market development, while David, who has always been the "software wizard", will act as the CTO and develop the algorithm. As far as the initial investment which they need, Mark accepts also to help putting in the company € 15.000, which is the only money they have! They three meet and decide to split the equity in 55%, 30% and 15%.

Q14: How would you assign the stocks and why?
Answer:

Given the impact Sheila has on the company, she will definitely have a 55%. While Mark put 15.000 in cash in the company, he has lesser commitment in terms of time compared David, which works full time. So, it makes sense to give David the other 30% and then to Mark the other 15% remaining.

RoboCutter is born. Sheila, David and Mark quickly consume the initial € 15.000 but the more they go on with their plan, the more it becomes evident they have "something". At a startup competition they present the idea and they meet Eric, a guy with good personal wealth and a personal passion for startups. Eric approaches them and offers them to buy the 20% of RoboCutter for € 44.000, but asking the three friends to subscribe to an acceleration program (the acceleration program asks € 4.000 in cash plus 5% of the startup company).

Q15: by looking at Eric profile and investment amount would you classify him as:

- A Business Angel
- A Venture Capital
- FFF

Answer:

Answer: (1)

Written by Gabriel R.

Q16: what is the pre-money evaluation of the startup given by Eric
Answer:

Q17: what is the post-money evaluation of the startup given by Eric
Answer:

$$Post\_money\ evaluation = \frac{Investment\ for\ equity}{Percentage\ for\ equity} = \frac{44.000}{0.20} = 220.000€$$

$$Pre\_money\ evaluation = Post\_money - Investment = \ 220.000 - 44.000 = 176.000€$$

Including the acceleration program (given it's in pre, including 5%)_

$$Post\_money\ evaluation = \frac{Investment\ for\ equity}{Percentage\ for\ equity} = \frac{44.000}{0.25} = 176.000€$$

Q18: what is the value in € of the acceleration program?
Answer:

We first need to calculate the equity value here using the post-money evaluation:

$$Equity\ Value = Post\_money\ evaluation\ * Equity\ percentage\ = 220.000\ * 0.05 = 11.000€$$

Total value of the acceleration program is as follows:

$$Total\ Value\ of\ Acceleration\ Program = Cash\ Value + Equity\ Value = 4.000 + 11.000 = 15.000€$$

Q19: Write RoboCutter Cap Table after Eric entry and the participation to the Accelerator program:

Shareholder	*Quota %*
Sheila	
David	
Mark	
Eric	20%
Accelerator	5%
Total	**100%**

In a few months the cash runs low but RoboCutter idea looks more and more promising. Sheila already presented a demo at a wood cutting equipment fair. Eric introduces the three friends to a Business Angel network, where they obtain an investment plan by RCI (part of the Business Angel Network), in two steps: a first step of € 100.000 for the 10% of the company, and a second step of € 100.000 for a further 10%, provided that RoboCutter (a) completes the product and obtains the certifications and (b) the first commercial contract is signed. RCI also requests, at the end of step 2, to convert RoboCutter in a SpA with 200.000 shares, reserving the 10.000 shares for stock options.

About the table, we have 75% of stocks remaining after the split. So, we should do a percentage of a percentage; so, for instance, taking the previous assignment of 55%, 30%, 15% of 75%. This is done multiplying the percentages together:

- Sheila → $0.75 * 0.55 = 0.4125 = 41.25\%$
- David → $0.75 * 0.30 = 0.2250 = 22.50\%$
- Mark → $0.75 * 0.15 = 0.1125 = 11.25\%$

Written by Gabriel R.

Q20: Write RoboCutter Cap Table after step 1.

Shareholder	*Quota %*
Sheila	
David	
Mark	
Eric	
Accelerator	
RCI	10%
Total	**100%**

Basically, this RCI acquires a 10% stake in the company and so we need to readjust the proportions correctly. Simply subtracting 10% from remaining shares would not work because it disproportionately reduces each shareholder's stake by an absolute 10%, rather than scaling down each stake relative to the new total.

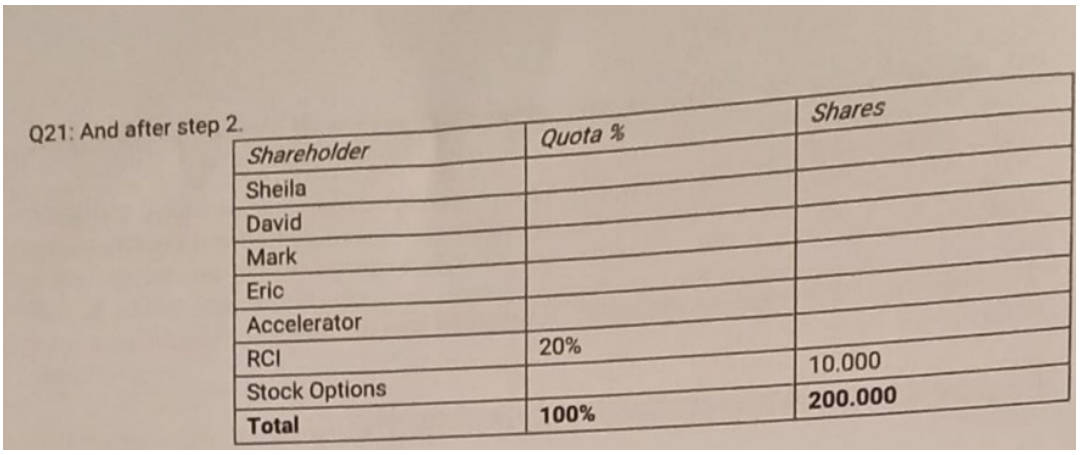
The correct method involves reducing each shareholder's stake by a factor that reflects the addition of the new shareholder's stake to the total. The formula is the following one:

$$New\ Share\ \% = Old\ Share\ \% * (1 - RCI\ Share\ \%)$$

So, again, it's a percentage of a percentage, using the previously found ones.

- Sheila → $41.25\% = 0.4125 * 0.90 = 37.125\%$
- David → $22.5\% * 0.90 = 20.25\%$
- Mark → $11.25 * 0.90 = 10.125\%$
- Eric → $20 * 0.90 = 18\%$
- Accelerator → $5 * 0.90 = 4.5\%$
- RCI → 10%

Shareholder	*Quota%*
Sheila	37,125 %
David	20,25 %
Mark	10,125 %
Eric	18 %
Accelerator	4,5 %
RCI	10%
Total	**100%**



Q21: And after step 2.

Shareholder	*Quota %*	*Shares*
Sheila		
David		
Mark		
Eric		
Accelerator		
RCI	20%	
Stock Options		10.000
Total	**100%**	**200.000**

To calculate the *quotas*: we take as reference step 19, where Eric and Accelerator take comprehensively 25% (20+5). So, we multiply said 75% per the quota of the reference step 19, so to have the original values between stakeholders.

- Sheila → $41.25\% * 75\% = 0.4125 * 0.75 = 30.9375\%$
- David → $22.50\% * 0.75 = 16.875\%$
- Mark → $11.25\% * 0.75 = 8.4375\%$
- Eric → $20\% * 0.75 = 15\%$
- Accelerator → $5\% * 0.75 = 3.75\%$
- RCI → Takes another 10%, so 20%
- Stock options → 5%

But there are also the *shares*: here use the percentage of quotas on 200.000 shares (sum is correct):

- Sheila → $30.9375\% * 200.000 = 0.334125 = 61.875$
- David → $16.875\% * 200.000 = 33.750$
- Mark → $8.4375\% * 200.000 = 16.875$
- Eric → $15\% * 200.000 = 30.000$
- Accelerator → $3.75\% * 200.000 = 7.500$
- Stock options → $5\% * 200.000 = 10.000$
- RCI → $20\% * 200.000 = 40.000$

Shareholder	*Quota%*	*Shares*
Sheila	30,9375%	61.875
David	16,875%	33.750
Mark	8,4375	16.875
Eric	15%	30.000
Accelerator	3,75%	7.500
RCI	20%	40.000
Stock Options	5%	10.000
Total	**100%**	**200.000**

Written by Gabriel R.

Q22: What is RoboCutter value after step 2?
Answer:

I suggest using the formula of post-money evaluation, considering both of the investments, for a total value of 200.000€, so to have:

$$Post\_money = \frac{Total\ investment}{Percentage\ of\ company\ acquired} = \frac{200.000}{0.20} = 1.000.000€$$

Q23: What is the value of a single RoboCutter share?
Answer:

To get the value of the shares, we simply divide the post-money by the total number of shares; 1000000 shares of stock options are already considered within the previous 200000, so:

$$\frac{1.000.000}{200.000} = 5€\ per\ share$$

RoboCutter does really well and closes very important contracts on the market. RCI and Eric, thanks to their network, approach a Venture Capital firm which is open to give RoboCutter the important funding needed to scale. Sheila needs to setup a very important pitch to convince the Venture Capital firm to join.

Q24: What kind of pitch would you suggest to setup?

1. The same pitch that RoboCutter used to convinced Eric to join! After all, if it worked with Eric at the beginning of RoboCutter history, why should it fail now?
2. A very numeric pitch dealing with the economic results of the last years and projecting the results of the following 3-5 years, with a very clear forecast of the increase of the number of customers, sales, revenues, EBITDA, a milestone plan and so forth.
3. A very technology-oriented pitch talking about how superior RoboCutter technology is, how it compares to similar products on the market, surpassing all of them.

Answer:

Answer: (2)

The Venture Capital firm invests! They buy the 20% of RoboCutter on new stocks for 1.5M€, asking the liquidation preference with full participation.

Q25: Write the new Cap Table (shares only):

Shareholder	*Quota %*	*Shares*
Sheila		
David		
Mark		
Eric		
Accelerator		
RCI		
Stock Options		
Venture Capital firm		50.000
Total	**100%**	**250.000**

To calculate *shares*, we multiply the quotas of previous step by the shares not used by VC:

- Sheila → $30.9375\% * 200.000 = 0.309375 * 200.000 = 61.875$
- David → $13.5\% * 200.000 = 33.750$
- Mark → $8.4375\% * 200.000 = 16.875$
- Eric → $152\% * 200.000 = 30.000$
- Accelerator → $3.75\% * 200.000 = 7.500$
- RCI → $20\% * 200.000 = 40.000$
- Stock options → $5\% * 200.000 = 10.000$

As for the *quotas* (even if not requested, but to exercise, since material is very few), we calculate those as what takes the VC = $20\%\ (0.2)\ =\ 1 - 0.2\ =\ 0.8$ per the previous quota, sp:

- Sheila → $30.9375\% * 0.8 = 24.75\%$

and so on.

Shareholder	*Quota%*	*Shares*
Sheila	24,75%	61.875
David	13,5%	33.750
Mark	6,75%	16.875
Eric	12%	30.000
Accelerator	3%	7.500
RCI	16%	40.000
Stock Options	4%	10.000
Venture Capital Firm	20%	50.000
Total	**100%**	**250.000**

Q26: What is the pre-money value of RoboCutter agreed by the Venture Capital firm?
Answer:

Q27: What is the post-money value of RoboCutter agreed by the Venture Capital firm?
Answer:

The VC invests and the post money evaluation is $\frac{1.500.000}{0.20} = 7.500.000€$ while the pre-money is $7.500.000 - 1.500.000 = 6.000.000€$.

Q28: What is the value of a single RoboCutter share after the investment?
Answer:

We simply divide the previous post-money by the number of shares, so: $\frac{7.500.000}{250.000} = 30€\ per\ share$

Written by Gabriel R.

One of the clauses that the Venture Capital firm requested in the investment contract is a Bad Leaver option to Sheila and David – if the Bad Leaver clause triggers for one of them, he/she will have to sell all of the shares to the other shareholders at a fixed price of 1€/share. Unfortunately, after some months since the entry of the VC firm, Sheila experiences a severe health issue and needs to retire.

Q29: Rewrite the Cap Table after this happening (and considering IF the Bad leaver clause applies):

Shareholder	*Quota %*	*Shares*
Sheila		
David		
Mark		
Eric		
Accelerator		
RCI		
Stock Options		
Venture Capital firm		50.000
Total	**100%**	**250.000**

Given that it cites "if" the Bad Leaver happens, so reasonably it does not apply, again citing delivery does not apply, citing IF capitalized even

Ascertained that it is therefore a Good Leaver instead.

Good leaver	**Bad leaver**
Retirement	Commit gross misconduct
Serious ill health or death	Are convicted of a crime
Being made redundant through no fault of their own, e.g. as a result of a merger, or because the role is no longer necessary.	Break a noncompete clause or violate the terms of a shareholders' agreement
When decision is made to transition away from the business *(only if founder/co-founder)*	Voluntarily resign, or before reaching a certain milestone, e.g. before all their shares have fully vested.

Citing this site, it confirms that it is it. I also find this:

Leaver Treatment

Depending on the triggering event, different rules apply:

- *If a bad leaver event occurs during the vesting period, 100% of the bad leaver's shares are subject to the special purchase right.*
- *If a good leaver event occurs during the vesting period, 100% of the good leaver's shares that have not yet vested at that time are subject to the special purchase right.*

Where Special Right to Purchase indicates:

To purchase a certain number of shares (depending on the leaver event) if a leaver event occurs during the vesting period ("Special Right to Purchase").

Written by Gabriel R.

If Sheila's shares are to be sold under the terms for a Good Leaver, and assuming the fair market value of €30 per share is used:

- *Sale of Shares*: Sheila's 61,875 shares are potentially bought by the remaining shareholders or the company at €30/share, totaling €1,856,250.
- *Redistribution of Shares*: These shares may then be redistributed among the remaining shareholders. The method of redistribution (whether proportional to existing stakes, through a specific buyout arrangement, or another method) would depend on the agreement's terms.

Shareholder	*Quota%*
Sheila	24,75%
David	13,5%
Mark	6,75%
Eric	12%
Accelerator	3%
RCI	16%
Stock Options	4%
Venture Capital Firm	20%
Total	**100%**

(We are not sure on this answer and the following part)

Here we calculate the number of shares of each stakeholder, considering his quota on the total number of shares (250000).

$$David = 250.000 * 17.04\% = 250000 * 0.1704 = 42.600$$

For all the others, we get:

42600 + 25725 + 38850 + 16350 + 48850 + 18850 + 58850 =
250.075

After Sheila's departure RoboCutter management starts to become very unclear and the company stalls. Both RCI and the Venture Capital firm find it difficult to hire a CEO with Sheila's vision and capabilities but by chance the Venture Capital firm finds an industry interested to purchase the company and its whole shares for a final global value of 6.7M€.

Q30: Please write the money going to each Shareholder after the sale of RoboCutter.

Shareholder	*Money*
Sheila? (you decide based on q29)	
David	
Mark	
Eric	
Accelerator	
RCI	
Stock Options	
Venture Capital firm	
Total	**€ 6.700.000**

Written by Gabriel R.

21.2 2020 ITALIAN EXAM – FULL COMMENTARY

(The exam was in Italian only, so I completely translated, and I kept only the useful reasonings for the actual exam. This was the best possible thing to do, in order to be actually prepared upfront. Full commentary and steps will be given to better improve the reasoning here. I also tried to complete the incomplete questions so to offer even better context – using GPT of course, you can also see him.)

1 - Introduction

Carlo's boiler broke down. The boiler display says error E2. Carlo finds the manual on the Internet and finds that E2 is an action that requires technician intervention. He searches for the phone number of the technician finding 5 firms in his city. He calls the one with the best google reviews that gives him an appointment after 2 days. The prospect of being in the cold without hot water until then is not pleasant.

He then calls two other firms, and one gives him an appointment after a few hours. Satisfied he cancels the first appointment. The technician arrives who, seeing the error, tells him that he cannot do anything and that he must call the firm with which he had made the first appointment, now canceled, who is the only one who can work on the board that regulates combustion. He calls back the first firm, which gives him an appointment a week later. Charles remains in the cold and without water hot two weeks. Quite an inconvenience.

Try to briefly describe where you think the problem is that led Charles to spending two weeks in the cold. (No more than one paragraph)

Answer:

Carlo's problem arose because he didn't initially confirm if the other firms could specifically handle the E2 error on his boiler, leading him to cancel the only qualified appointment in favor of a quicker but unqualified one.

1.1 – The need

Irritated, Carlo thinks that it would be really important to find a solution that allows make maintenance work more efficient. What happened to him could be much more serious if it happened to a fragile and alone person.

Carlo wants to make the maintenance intervention more efficient, indicate what you think they are, i main advantages and disadvantages of each of the following solutions. (An advantage and a disadvantage for each).

- Putting the contacts of the assistance centers in a dedicated app
- By connecting the boiler to the internet
- By connecting the boiler via a dedicated app to Carlo's smartphone

Answer:

1. Putting the contacts of the assistance centers in a dedicated app

- Advantage:

Convenience: Centralizing contact information in one dedicated app makes it easier and faster for users to find and contact certified technicians or assistance centers. This reduces the time spent searching for qualified help, potentially speeding up the resolution process.

Disadvantage:

Limited Accessibility: Relying solely on a dedicated app could alienate users who are not tech-savvy or do not have access to smartphones. This might prevent some users, particularly the elderly or those in areas with limited internet connectivity, from accessing necessary maintenance services.

2. Connecting the boiler to the internet

- Advantage:

Real-Time Monitoring and Alerts: An internet-connected boiler can transmit real-time data about its status and performance to service centers or directly to users. This allows for immediate identification of issues and potentially preemptive maintenance, preventing breakdowns before they occur.

- Disadvantage:

Security Risks: Connecting any device to the internet raises concerns about cybersecurity. The boiler could become a target for hackers, leading to potential privacy breaches or even malicious manipulation of the boiler settings, which could be dangerous.

3. Connecting the boiler via a dedicated app to Carlo's smartphone

- Advantage:

Direct Control and Notifications: Carlo can monitor and control his boiler directly from his smartphone. This enables him to receive instant notifications if there’s an issue, adjust settings remotely, and perhaps even perform minor troubleshooting guided by the app.

- Disadvantage:

Dependence on Smart Devices and App Functionality: This solution relies heavily on the continuous proper functioning of Carlo’s smartphone and the app itself. Any issues with the smartphone, such as battery drain, software glitches, or incompatibility with future updates, could disrupt his ability to monitor and control the boiler efficiently.

1.2 – The spark

Over dinner with friends, Carlo shares his frustrating experience with his boiler's maintenance issues. Priscilla, a computer scientist working for a multinational technology company, proposes a potential solution: a low-cost device that could be installed in the boiler. This device would be able to communicate directly with a dedicated app or service center. She suggests that this could enable real-time diagnostics and possibly even remote resolution of some problems without needing immediate technician intervention.

Written by Gabriel R.

What could be the benefits and drawbacks of implementing such a device in terms of improving maintenance efficiency and user experience?

Answer:

Implementing Priscilla's proposed low-cost device into boilers presents several potential benefits and drawbacks:

- Benefits:

Proactive Maintenance and Diagnostics:

The device could continuously monitor the boiler's condition and alert users or service centers about potential issues before they escalate into major problems. This allows for timely interventions, potentially saving costs on extensive repairs and reducing the downtime of the boiler.

Enhanced User Experience:

Users would have better control over their appliance's health and could receive instant updates about their boiler's status. This improves the user's confidence in the appliance's functionality and minimizes surprises related to breakdowns.

- Drawbacks:

Complexity in Implementation:

Introducing modern technology into existing systems always brings challenges. Compatibility with various models and ages of boilers could be problematic, requiring different versions or updates of the device.

Dependence on Technology:

While a tech-based solution can be highly effective, it also increases the user's reliance on technology for basic functionalities. Issues like connectivity problems, software bugs, or hardware failures could impair the device's effectiveness and leave the user without any immediate solution or fallback.

Priscilla's solution aligns with a trend towards "smart" home devices, offering a blend of proactive maintenance and enhanced user convenience, albeit with considerations around technological dependence and implementation hurdles.

Convinced of the opportunity Carlo and Priscilla insist, and quickly develop a demo, an app that frames the boiler display and explains the meaning of the various buttons. Share the data with the nearest service centers by sending a WhatsApp message with screen shots of the display.

Carlo and Priscilla return to Giobatta who enthusiastically tells them that he wants to be part of the team by investing time and all his knowledge in the field. C and P decide to build a demo, *what is the difference between MVP and Minimum Sellable Product?*

Answer:

An MVP, or Minimum Viable Product, is a basic version of a product designed to gather user feedback with the least effort and the fewest features necessary to make it functional. It focuses on core functionalities that demonstrate the product’s concept and tests its viability in the market.

Written by Gabriel R.

A Minimum Sellable Product, on the other hand, is a more developed version of the product that includes enough features and refinements to be considered sellable to the end customer. It not only tests viability but also aims to provide enough value that customers are willing to pay for it, ensuring it has a viable business model from the outset.

2./ - Startup constitution

C, P and G decide to launch the start-up named "I don't understand from the recording" that uses augmented reality to provide more information than what is represented in the display by sharing it on a cloud they develop with stakeholders in the specific machine.

They invest 2,000 euros each and spend every night developing a slightly more sophisticated demo and creating a presentation to convince someone to provide them with the money to get going. Carlo is given a little more equity due to the fact that he was the one who came up with the idea. Carlo then has 40 percent and Priscilla and Giobatta 30 percent each. At the formation of the startup the cap table is formed as follows:

Soci	**Quota**	capitale
Carlo	40	2000
Priscilla	30	2000
Giobatta	30	2000
Totale	**100%**	6000

The start-up is an enterprise existing as a new legal entity, who is it that represents it before the law?

(a) The president

(b) The chief executive officer

(c) The founders

Answer:

In the context of a new startup, the entity that legally represents it before the law can vary based on its structure and the decisions made by its founders. Typically, in many jurisdictions, the Chief Executive Officer (CEO) or an equivalent role (such as a Managing Director in some regions) acts as the legal representative of the company. This individual is responsible for the day-to-day management decisions and represents the company in all legal and business matters.

Therefore, the answer would be:

(b) The chief executive officer

2./ - First commercial attempts

Carlo and Priscilla try to contact different boiler manufacturers asking about who does service, but they are unable to meet with people or when they do, they find no interest. Frustrated they think about abandoning the idea, but Giobatta introduces them to a manufacturer innovation-oriented one who wants to try it out and tells him he is interested in the system as soon as it is ready.

The team has not thought about the business model and how to present the product to possible customers and continues to tell the story as if it were presenting it to possible new members of the team or to investors. This is a common mistake that often leads to losing possible customers who want a solution and not develop it. This is why it is critical to define a business and a business proposal.

Try to hypothesize who the start-up's customers might be and what is the value proposition.

Answer:

For Carlo, Priscilla, and Giobatta's startup, defining a clear business model and a compelling value proposition is essential to attract not just investors but also customers.

Here are some thoughts to be expressed:

Potential Customers:

1. *Boiler Manufacturers***:** To integrate the technology for smarter, self-diagnosing boilers.
2. *Homeowners***:** For a more efficient and proactive home heating system maintenance.
3. *Real Estate Developers and Property Managers***:** To streamline maintenance across multiple units.
4. *HVAC Service Companies***:** To enhance service offerings through continuous monitoring and predictive maintenance.

Value Proposition:

- *To Manufacturers***:** Offers a competitive edge with smart, innovative features in their boilers, attracting tech-savvy buyers.
- *To Homeowners/Property Managers***:** Provides convenience and cost savings by preventing breakdowns and ensuring efficient operation.
- *To HVAC Companies***:** Transforms traditional service models to subscription-based monitoring, increasing engagement and revenue through better customer service and operational efficiency
    - *Minor note*: Heating, Ventilation, and Air Conditioning = HVAC

3 -

C, P and G realize that they are unclear what business proposal to make to the customer and start working on the business model by formulating some "" As they develop it, they realize they have some weaknesses:

(a) Their value proposition is not compelling enough.

(b) They need more money to develop the demo.

Who do you think is appropriate at this time for them to turn to in their search for "can't tell":

a) Business accelerator (20/30 thousand, few)

b) Business angels

c) Venture capital fund (enters when the company has already started)

d) Public entrepreneurship support program

Answer:

Given the challenges C, P, and G are facing in terms of refining their value proposition and needing additional funds to develop their demo, selecting the right source of support and funding is crucial. Here's an evaluation of each option in their context:

a) Business Accelerator:

- Appropriate For: Startups at an early stage that need mentorship, resources, and a small amount of funding to refine their business models and product offerings. Accelerators often provide a structured environment and access to a network of mentors and peers

- Why It's Suitable: C, P, and G are still at a stage where they need to clarify their value proposition and could benefit significantly from the mentorship and structured support an accelerator offers. The funding, although not large, may be sufficient to develop an initial, more polished demo

b) Business Angels:

- Appropriate For: Early-stage companies that need funding and may also benefit from the angels' industry expertise and contacts

- Why It's Suitable: Business angels could provide the necessary capital to develop the demo and potentially offer valuable insights and industry connections. However, their involvement might be more suited for slightly later stages when the value proposition is a bit more defined.

c) Venture Capital Fund:

- Appropriate For: More established startups with proven business models that are looking to scale operations

- Why It Might Not Be Suitable: Typically, VCs come in when the company has a clear value proposition, some market validation, and is ready to scale. C, P, and G's startup may not yet meet these criteria, making it harder to attract VC funding at this stage

d) Public Entrepreneurship Support Program:

- Appropriate For: Startups that require not only funding but also regulatory support, networking, and other resources. These programs are often less competitive and more supportive of local startups

- Why It's Suitable: If available, these programs can offer grants, which do not require giving up equity, along with valuable resources and support. This could be ideal given the team's current stage and needs, especially if they can find a program specifically targeted towards tech or innovation in their sector

Recommendation:

For C, P, and G, the most fitting options at this point would likely be a business accelerator (giving them contact with other business angels eventually) or a public entrepreneurship support program. Both avenues offer the potential for crucial early-stage support and funding without the pressure of immediate large-scale returns, allowing them to refine their product and business model in a supportive environment.

3.1 – The first investors

C, P, and G realize that to develop the MVP that will prove the value proposition they need partners and money. They do not know who to ask for them and contact business accelerators.

Through one of these they find a business angel who invests $60{,}000$ euros.

The business angel takes 10 percent equity, the accelerator 5 percent equity and charges $20{,}000$ euros for the accelerator program. The startup then gives up a total of 15% equity.

What is the pre-money value of the equity and the startup recognized by the investor?

The accelerator charged 5% *equity and cash* $20{,}000$ *euros, what is the total value of the acceleration program?*

Answer:

To calculate the pre-money valuation of the startup and the total value of the acceleration program, we need to consider the given investments and equity stakes.

The business angel invests $€60{,}000$ for a 10% stake, and the accelerator takes 5% equity plus $€20{,}000$ for their program. From these data points, we can calculate the pre-money valuation (the value of the startup before new investments are added).

1. Business angel's investment

- Business angel invests $€60{,}000$ for 10% equity.
- This implies a post-money valuation of $€60{,}000 \,/\, 0.10 = €600{,}000$.

2. Pre-Money valuation:

- To find the pre-money valuation, subtract the investment from the post-money valuation.
- Pre-money valuation $= €600{,}000 - €60{,}000 \; = €540{,}000$.

The accelerator receives 5% equity and €20,000 cash. To find the total value attributed to the accelerator's contribution, we calculate based on the post-money valuation:

- 5% of the post-money valuation $(€600{,}000) \; = \; 0.05 \; * \; €600{,}000 \; = \; €30{,}000$.
- Total value = $Value\ of\ equity$ $(€30{,}000) \; + \; Cash\ charged$ $(€20{,}000) \; = \; €50{,}000$.

About everything else; basically, we have the 15% blocked now. So, we will multiply 85% per the single quotas.

- Carlo → $40 * 0.85 = 34\%$
- Priscilla → $30 * 0.85 = 25.5\%$
- Giobatta → $30 * 0.85 = 25.5\%$

We know the BA invests 60000 euros and we know the 5% of equity here.

To get the individual quotas, simply multiply the percentages by the post money evaluation.

- Carlo → $600.000 * 0.34 = 204.000$
- Priscilla → $600.000 * 0.255 = 153.000$
- Giobatta → $600.000 * 0.255 = 153.000$
- Business Angel → $600.000 * 0.10 = 60.000$
- Accelerator → $600000 * 0.05 = 30.000$

Shareholder	**Quota**	**Capital**
Carlo	34	204.000
Priscilla	25.5	153.000
Giobatta	25.5	153.000
Business angel	10	60.000
Accelerator	5	30.000
Total	100%	600.000

The original table is slightly different:

Soci	Quota	capitale
Carlo	34	210000
Priscilla	25,5	150000
Giobatta	25,5	150000
Business angel	10	60000
acceleratore	5	30000
Totale	100%	600000

3.2 – Acceleration program

G decides not to participate in the accelerator program. C and P instead decide to work full-time during the program and evolve the business model, meet with possible clients to validate possible investors.

a) In your opinion, what are the main goals of an acceleration program?

Answer:

An acceleration program primarily aims to support early-stage startups in rapidly developing their business models, products, and market strategies. Here are the main goals of such programs:

1. *Rapid Development of the Business Model*: Accelerators help startups refine and validate their business models. They provide frameworks and mentoring to ensure that the model is viable and scalable.

Written by Gabriel R.

2. *Access to Funding*: Startups often join accelerators for the opportunity to secure initial or additional funding. This funding helps them build their products and scale operations. At the end of most programs, startups typically present to a group of investors during a demo day, which can lead to further investment.
3. *Mentorship and Expert Guidance*: Accelerators connect entrepreneurs with experienced mentors who can offer valuable insights into industry practices, technical development, and business management. This guidance is crucial for avoiding common pitfalls and accelerating growth.
4. *Networking Opportunities*: Being part of an accelerator program provides access to a network of fellow entrepreneurs, potential partners, customers, and investors. These connections can be instrumental in the startup's growth and continued success.
5. *Market Access and Customer Validation*: Accelerators often help startups gain access to target markets and facilitate early interactions with customers. This direct feedback is crucial for iterating on the product and service offerings to better meet market needs.
6. *Operational Support*: Beyond funding and mentorship, accelerators often provide logistical and administrative support. This can include office space, legal advice, and other resources that are essential for a young company.

3.3 The new investor

At the demo day, the final moment of the acceleration journey, C and P come before the investors with some declarations of interest from some manufacturers (and various people). C and P appear before the investors while G stands in the audience, inevitably this represents a rift in the team. C and P are committed to the team full time, while G takes on more of an advisor role.

Perhaps Giobatta was given too large a share. Equity management of a start-up at the time it is formed is critical.

What do you think are the main reasons for assigning more or less equity to a person.

(b) The assumption of senior roles such as president or CEO.

c) The time devoted to the business venture and the know-how

d) The money invested at the time of incorporation

(e) The contributions in terms of the contribution of intellectual property

Answer:

Here are some of the main reasons for assigning more or less equity to a person:

- a) The Assumption of Senior Roles Such as President or CEO:

Equity can be allocated based on the responsibilities associated with senior roles. Leaders who take on high-stakes roles such as CEO or President often receive more equity because they have considerable influence over the company's direction and bear substantial risk.

- b) The Time Devoted to the Business Venture and the Know-How:

The commitment of time and the expertise brought to the venture are also critical factors. Those who work full-time and bring essential skills or industry knowledge that are crucial for the startup's success might receive more equity. This not only compensates them for their contributions but also aligns their interests with the long-term success of the company.

- c) The Money Invested at the Time of Incorporation:

Direct financial investment is a straightforward criterion for equity distribution. Individuals who provide the startup with necessary capital (thus taking on financial risk) are often compensated with a corresponding share of equity. This investment helps to fund the initial operations and, thus, founders who contribute capital typically hold more equity.

- d) The Contributions in Terms of Intellectual Property:

If a founder or team member brings valuable intellectual property (IP) to the startup, this can justify a larger equity share. IP can be a significant asset, offering the startup a competitive advantage or a critical component of the product or service. Recognizing the value of IP through equity ensures that the contributors of the IP are motivated to continue developing and protecting these assets.

In the scenario of C, P, and G, these factors might explain any disparities in equity distribution. For instance, if G contributed significantly in the initial stages through IP or initial funding but later took on an advisory role, his larger initial equity stake could still be justified. However, continuous adjustments might be necessary as roles and contributions evolve to maintain fairness and motivation among all parties involved.

3.3 – The new investor

At the Demo Day they find another Business Angel, Franco, who proposes:

(a) To invest $100{,}000$ euros for 10 percent of the company right away and $200{,}000$ euros to reach a total of 20 percent of the company after the acquisition of the first two business contracts;

b) To join the board of directors.

c) To help them select a person to help with marketing and business development.

Franco also asks to convert the company into an SPA and to divide the capital into 150000 (not 160, as text says, otherwise table would not make sense) making 16000 shares available as founders for stock options that will also motivate senior people to join and collaborate with the company.

Complete the cap table to accommodate the entry of the new investor.

Answer:

10% of the society immediately goes to Franco, so the others would subdivide the society over said 90%. So, we get

- Carlo → $34 * 0.9 = 30.6\%$
- Priscilla → $25.5 * 0.9 = 22.95\%$
- Giobatta → $25.5 * 0.9 = 22.95\%$
- Business angel → $10 * 0.9 = 9\%$
- Accelerator → $5 * 0.9 = 4.5\%$
- Franco → 10

Written by Gabriel R.

The post-money evaluation is given by: $\frac{100.000}{0.1} = 1.000.000$

So, the pre-money is: $1.000.000 - 100.000 = 900.000$

Shareholder	Quota	Capital
Carlo	30.6	204.000
Priscilla	22.95	153.000
Giobatta	22.95	153.000
Business angel	9	60.000
Accelerator	4.5	30.000
Franco, new investor	10	100.000
Total	100%	1.000.000

Now, for the table, we would need to add for sure the stock options and Franco puts $100.000 + 200.000 = 300.000€$ so to have a 20%. Then, there are the stock options and a total of 160.000 shares to be redistributed to the others. 160.000 divides by 16.000 to get 10%.

Franco takes $32.000 \rightarrow 160.000 * 0.20$ shares. The other would have to equally subdivide the quotas not considering Franco's 20% by the other quotas.

I am not able to understand why these numbers appear and also the following exercises

And after achieving initial business results with transition to SPA and compressive issuance of 150000 shares, approximated the number of shares in whole

Soci	Quota	capitale	azioni
Carlo	23,8		38 080
Priscilla	17,85		28 560
Giobatta	17,85		28 560
Business Angel	7		11 200
Acceleratore	3,5		5 600
Stock option	10	150 000	16 000
Nuovo investitore franco	20	300 000	32 000
Totale	**100%**	**1 500 000**	160 000

12)

What is the equity value recognized by the investor after completing the investment of 300,000 euros?

(a) 1,500,000 euros

b) 1,000,000 euros

c) Other

This is the post-money dividing Franco (300.000) total investment by 0.20, so $1.500.000€$.

Answer:

Equity valued by the investor is valued at 1500000.

A stock is worth $\frac{1\,500\,000}{160\,000} = 9.375€$

3.4 – First commercial satisfactions

Written by Gabriel R.

C and P publish the site and organize events thanks in part to the accelerator that followed them and participate in trade shows, managing to close several contracts and thus securing the investment of Franco. They find an important channel that connects them with HVAC service centers.

This is a digital channel like Prontopro or Thumbstack. The business starts, thanks in part to the marketing manager chosen with Franco, and now it needs to grow. More money is needed. Business feedback confirms the business model. The Investment Readiness Level goes up and now it is a matter of growing by applying the now defined business model. Important managerial skills are needed.

From startup to scale-up phase, i.e., growth to conquer market rapidly. Franco proposes that the person selected for marketing take on a more key role. Some tensions arise among the team.

Charles begins to feel that his leadership role as the initial founder and originator is now less important and other skills are needed. Several hires begin to be needed, the organization needs to grow. Franco arranges meetings with the country's top Venture Capitalists and together with Carlo and Priscilla prepares the new pitch.

In your opinion, this pitch should convey what key elements to attract Venture Capitalists interested in a scale-up phase? How should the pitch also address the potential internal team dynamics and leadership shifts to ensure a unified front?

Answer:

1. Emphasize Scalability and Market Potential:

- *Strong Market Traction*: Detail the success of the initial business model, supported by metrics such as customer acquisition rates, retention figures, and the successful closing of several contracts.
- *Scalability of the Business Model*: Highlight how the business can be efficiently scaled, the size of the addressable market, and the digital channels that have been successfully leveraged, like the connection with HVAC service centers.

2. Highlight Managerial and Operational Readiness:

- *Experienced Management Team*: Introduce the key team members, especially the marketing manager whose role is expanding due to their proven effectiveness. Emphasize the experience and skills that align with the company’s current needs.
- *Strategic Vision*: Outline the strategic direction for the next 3-5 years, showing understanding of market dynamics and how the company plans to capitalize on them.

3. Showcase Financial Health and Future Projections:

- *Solid Financials*: Present the current financial health of the company and projected financials post-investment, highlighting how previous investments were utilized to generate growth.
- *Use of Funds:* Specify how the new funding will be used, such as for hiring key personnel, marketing, product development, or expanding into new markets.

4. Address Internal Dynamics and Leadership Transition:

- *Team Unity and Leadership Transition*: Address potential concerns about internal dynamics and leadership roles. Acknowledge the evolving roles within the company, emphasizing the ongoing value of founding members while also displaying how new roles and hires are crucial to the scale-up phase.
- *Leadership Role of Carlo*: Reinforce Carlo's continued importance as a strategic leader and visionary who has guided the company from its inception and will continue to shape its future.

5. Communicate Investment Readiness Level:

- *Increased Investment Readiness*: Explain that the company's improved Investment Readiness Level signifies a lower risk and higher potential for rapid growth and returns, making it an attractive opportunity for VCs.

Is it time to present a quantitative business model or business plan with numbers prospective, but which are based on verified assumptions? Justify the choice.

Answer:

Yes, it is the appropriate time to present a quantitative business model or business plan with prospective numbers based on verified assumptions. This approach is crucial for a few reasons:

1. *Credibility with Investors*: Venture capitalists expect detailed, number-based projections to assess the potential return on investment. Data-driven plans demonstrate professionalism and preparedness.
2. *Market Validation*: Presenting numbers based on verified assumptions shows that the business understands and has tested the market, lending further credibility to the scalability and viability of the business model.
3. *Strategic Planning*: Detailed financial projections help in strategizing for growth, resource allocation, and management, ensuring that the company can meet its targets and adjust its strategies, as necessary.

In essence, quantitative details backed by solid assumptions are fundamental to securing investment and guiding the company's growth during the scale-up phase.

Given we are inside of an advanced stage, now the pitch needs to show the results obtained and show trust in growing. This uses a quantitative pitch with concrete numbers, basically.

Written by Gabriel R.

4. The Venture Capital

Thanks to the accelerator program, the team had entered the radar of venture capitalists to whom they they present themselves by telling about their achievements. One of them decides to invest 2 Mln for 20 percent of the company and asks as conditions:

1) Liquidation preference with participation

2) That the founders and previous investors provide at least 20 thousand shares for stock option plans

3) That one member be appointed to the board of directors and that this member assume the role of vice chairperson of the board with responsibility for investor relations.

A venture capital is impressed with the business plan and decides to invest.

Complete the cap table.

Answer:

Soci	Quota	capitale	azioni
Carlo	16,07		38 080
Priscilla	12,05		28 560
Giobatta	12,05		28 560
Business Angel	4,73		11 200
Acceleratore	2,36		5 600
Stock option	12,5		36 000
Nuovo investitore franco	13,5		32 000
Venture capitalist	**20,00%**	**2 000 000**	36 000
Totale	**100%**	**10 000 000**	225 000

$225\,000 = 160\,000 + 20\,000$ is 80% + the 20% he wants

Share value = 44.44

4.1 – The growth

As the company grows, C and P are a little uneasy because they realize they have sold a major stake to G who has never really committed to the company. So they ask investors to help them take over the shares.

The venture capital agrees, the VC makes a $400{,}000$ euro loan to the company, which uses the money to buy G's shares and make them available for a plan of stock options intended for C and P.

What is the value of 100% of the company's shares acquired by Giobatta being offered 400,000 euros?

Complete the cap table after taking over Giobatta's shares.

Answer:

Soci	Quota	capitale	azioni
Carlo	16,07		38 080
Priscilla	12,05		28 560
Giobatta	12,05		0
Business Angel	4,73		11 200
Acceleratore	2,36		5 600
Stock option	12,5		64 560
Nuovo investitore franco	13,5		32 000
Venture capitalist	**20,00%**	**2 000 000**	36 000
Totale	**100%**	**10 000 000**	225 000

Value of shares purchased: $\frac{400000}{28560} = 14$

4.2 – Growth problems

As the economy grows, so do the financial needs and management problems so Venture Capital proposes to appoint the VP he selected as CEO and C, who until then held the position, becomes chairman of the board. The VC gives leverage on his willingness to invest again and help find new investors to force the decision.

What are the potential implications of the venture capitalist's proposal to appoint their selected VP as CEO, and what should be considered when deciding whether to accept this condition for further investment?

Answer:

The proposal by a venture capitalist to appoint their chosen VP as the CEO of a company, while the current CEO transitions to the role of Chairman, can profoundly influence the company's direction and internal dynamics. Such a move could lead to enhanced control for the VC over business decisions, which might be beneficial if their experience and network are leveraged effectively. However, it could also cause tension if their goals do not align well with those of the company's founders or other stakeholders.

When a VC pushes for such significant changes as a condition for further investment, it is essential to critically evaluate the alignment between the proposed CEO's vision and the company’s long-term goals. The compatibility of the new CEO with the existing team is also crucial, as leadership transitions can significantly impact company morale and culture. The credentials and management style of the VC’s candidate should be scrutinized to ensure they have a track record that inspires confidence.

Moreover, the company must consider the terms of the VC's investment—what are they asking in return, and how might these demands affect the company's autonomy in future decisions? It's also vital to communicate openly with current leadership and key team members to understand the potential impacts of such a transition on the company’s dynamics.

Ultimately, the decision to accept a VC's proposal involves weighing the potential strategic benefits against the risks of increased investor control and possible shifts in company culture. It's about balancing the immediate financial support and the strategic opportunities it might unlock with the long-term vision and independence of the company. Making such a decision requires thoughtful consideration of how these changes would position the company for future growth and whether they uphold the foundational principles upon which the company was built.

4.3 – Purchasing proposal

Fortunately, a company proposes to buy out 100% of the company for 9 million, and due to the current situation, problems and tensions among the team, a negative business cycle, etc., the VCs decide to sell and force the founders to do so as well.

The company is sold for 9mln.

Calculate how much each partner receives by considering that the VC asked for liquidation preference with participation and that he lent 400,000 euros to the company that must be returned to him.

(Liquidation preference with participation means that in the distribution of the proceeds he is first returned what he invested and then what is left is distributed pro rata).

Complete the table by indicating how much each shareholder receives.

Answer:

Soci	azioni	liquidazione
Carlo	38 080	1 117 013
Priscilla	28 560	837 664,8
Giobatta	0	0
Business Angel	11 200	328 496
Acceleratore	5 600	164 248
Stock option	64 560	
Nuovo investitore franco	32 000	938 560
Venture capitalist	36 000	**1 055 880**
Totale		**6 600 000**

VC takes 2400000 immediately so $9000000 - 2400000 = 6600000$

$$\frac{6600000}{225000} = 29{,}3$$