# Deep Tech Startup Guide

# Tips, tricks and pitfalls Rolph Segers

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Tips, tricks and pitfalls

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As you can see, every chapter has been written in collaboration with someone. The same should apply for your startup company: even though you are the 'writer' (founder), you should always take external advice on board when you journey into new waters.

As for my collaborators, advisors, friends and colleagues: thank you all for your contributions. This book would not have happened without your support!

**Rolph Segers** 

# Introduction

# Welcome to the "Deep Tech Startup Guide"

This book is created to support you through the initial phase of starting a High or Deep Tech business. Building and growing a business in these fields is a multifaceted challenge. From market segmentation and stakeholder mapping to funding strategies and supply chain management. This can be an overwhelming number of tasks for even the most ambitious of founders. This book aims to help you avoid the common pitfalls by equipping you with the tools and knowledge to transform your vision into a thriving enterprise. This book serves as a companion to our earlier publication from TNO Ventures: How to Become Investor Ready (2022). That book focuses on creating your first business plan—specifically, your first slide deck. You can access it online by visiting the following URL: https://ventures.tno.nl/knowledge-centre In contrast, this new book adopts a broader perspective, addressing the practical challenges and questions that founders frequently have to address. It offers simple, actionable tools and guidelines to help you get started.

# Why focus on Deep Tech?

Most startup resources are either generic or focused on software companies. This book, however, is designed for Deep Tech startups, which face distinct challenges. Unlike software ventures that prioritize rapid scaling, Deep Tech startups tackle fundamental scientific and engineering problems in fields like AI, biotechnology, quantum computing, and robotics.

Their journey involves:

- Longer development cycles
- Higher capital needs
- Complex risks, including technological feasibility, regulation, and market
  adoption

While Deep Tech is the focus, the insights here are valuable for other high-tech businesses. This book fills a critical gap, offering guidance where few tailored resources exist.

# From video to book

The foundation for this book comes from a series of e-learning videos, which have been transcribed and adapted for this purpose. If you prefer reading to watching, this book is for you. For those who prefer video content, you can access the video versions of most chapters on the TNO Ventures Knowledge Center website at: https://ventures.tno.nl/knowledge-centre

# **Content description**

The book begins by describing the fundamentals of market segmentation, guiding you through the process of identifying potential markets, segmenting them effectively, and mapping out a strategy that focuses on both immediate and long-term opportunities. Understanding your market is crucial, as addressing the wrong market is one of the primary reasons high-tech startups fail.

Next, it delves into the importance of stakeholder mapping, a critical step in understanding who can affect or be affected by your business operations. Identifying and engaging with stakeholders early on will ensure smoother execution and alignment with your business objectives.

Funding strategy is another pivotal area covered in this book. It explains the different stages of funding, the types of investors you might encounter, and the terminology used in investment discussions. This section aims provide you with a clear roadmap for securing the necessary funds to fuel your growth.

Convertible loan agreements and term sheets are also thoroughly explored. These financial instruments can be complex and intimidating, but they are essential for many startups. A detailed breakdown of their terms and implications will help you navigate these agreements with confidence.

The book also provides you with some tools on how to interpret term sheets and gives you an approach to the negotiations over a term sheet.

The part on the Employee Incentive Plan gives you some tools and methods to attract and, more importantly, retain key personnel.

The part on supply chain management emphasizes the importance of finding the right suppliers, managing relationships, and mitigating risks. A robust supply chain is the backbone of any scalable business, and the insights in this book will help you build and maintain a resilient one.

The part on 'value inflection points' explains the significance of these in order to support but also create your investment strategy. You should have them clearly defined before approaching investors.

The final chapter is on cap tables. Specifically, the cap table I created together with Hessel for Capital Waters. It explains the terminology and logic behind it.

Throughout this book, you will find practical examples, case studies, and actionable advice tailored to the unique challenges faced by startups. The book aims to provide a blend of theoretical knowledge and practical application, ensuring you can implement these strategies in your business journey today.

# What we do not cover in this book

Save the topic on supply chain management, this book does not cover the issues you will face when you start to scale your company. We intend to release additional guides and tools in the future that deal with that phase. Typical topics to cover are:

- Human resources: how to grow beyond 25 employees without losing your company culture; and the necessity of a job classification system.
- Intellectual Property Management and Innovation Management
- Market Expansion
- Quality Control and Quality Assessment
- Risk Management and Strategic Planning
- · Governing structure (installing a supervisory board)

# 1. Market segmentation

So, you are starting a new business. Or perhaps you want to innovate. And with 'innovate' we mean: you have a technology with which you wish to make an impact on society. You therefore go through the motion:

- 1) you look for someone with a problem that your innovation is the solution to;
- 2) you draft a value proposition canvas, and
- 3) you start validating your assumptions in your target market.
- But how *do* you pick that target market? How *do* you define it and why is:

"well, this technology can be applied to numerous different markets and problems, so we go for that"

a terrible idea?

This chapter will answer those question and give you some tools to address the issue. The main goal of this chapter however is to make you aware of the different aspects that are crucial when mapping out your market. First-off though: did you know that the main reason high-tech startups fail, is that they are addressing the wrong market? *CB Insights* created a nice overview of reasons why startups fail. It is a long list, but here is the top part:



#### Figure 1. CBInsights - Why startups fail

As you can see, the lack of market need is the no. 1. It is therefore crucial that you do proper homework *before* you start developing the solution. A high-level overview of that homework is listed below:

- First step: figure out what or who the market is.
- Second step: get to know that market.
- **Third step:** figure out what their problem actually looks like, what form it takes and whether it is a <u>priority issue</u> for them, just <u>an annoyance</u> or even <u>no problem</u> at all.

After you have gone through these three steps, only then should you start thinking about the shape your solution should take. With that concept in mind, you start interviewing stakeholders in your potential market *again* to validate that *specific* solution.

This chapter only addresses the first step. It will help you map the different market segments, so you can identify your beachhead and long-term markets.

Segmenting the market is vital, as it will have an impact on the further development of your technology. Additionally, you should thoroughly understand your customer: who are they, what are they willing to pay (depending on the problem you address) and how do you address that customer. You should also know which parts of your perceived market to ignore, simply because the need for your product in that market is too low or requires too much development before your solution fits that market.

As your market is inextricably linked to your solution, you should identify your market segment as early as possible, which is during your feasibility study. Later, when you have a better understanding of the market and your value proposition, you can reiterate this process.

To formulate your market segment, you need to do four things:

- 1. identify potential markets;
- 2. segment these markets;
- 3. map these segments and
- 4. generate a strategy by defining your Beachhead and long-term market segment.

# **Identify potential markets**

Identifying your markets starts with a simple brainstorm session. Anything goes, so sit together with your team, ideally with someone familiar with the market type you wish to address and start writing down all the market opportunities you can think of. The only rule is, there are no rules so: *no idea is too crazy*, and selection is postponed to a later stage.

After your brainstorm is done, you can start with the initial 'pruning'. Remove markets that do not fit your company values, for example. Depending on those values, you may feel uncomfortable in markets that deal with, or contribute to weapons, pornography or pollution, for instance.

# Segmenting the markets

After the 'pruning' is done, you are left with a number of potential markets that look promising. But are they proper market segments? Perhaps you need to group, split up or restructure certain opportunities.

Ok, but what constitutes a proper market segment?

A proper market segment is a *socially coherent group*. This can be:

- A demographic, such as "middle aged men between 40 and 50", "Female students in the Netherlands", "elderly in care homes" or "everyone who lives in Twente".
- A type of company, such as semicon, construction or even startups.
- A behaviour-driven parameter, such as "anyone with a debt", "anyone who shops online" or "anyone who travels a lot".

Point is that there must be social coherence within the group and everyone in that group shares a common vexation to which your product is a solution. Geographics often play some role in the segmentation, as well.

In principle, you should be able to check three boxes once you have identified a socially coherent group:

- they all are active in similar value or supply chains;
- they all have similar sales cycles;
- they know, or at least are aware of, each other.

The first box is pretty straightforward. Being in similar businesses with similar supply chains, these groups most likely buy similar products and have similar needs and challenges.

The second box is important. Similar sales cycles mean you do not have to reinvent the wheel for every sales cycle you encounter, which saves time. The third box is essential: if these groups are aware of each other, it will facilitate word-of-mouth and referrals, which is invaluable for your business growth. In short: defining, and later selecting the right segment, matters. By targeting groups with shared buying habits and decision times, you are streamlining your efforts and naturally boosting growth through their networks. This enhances the potential for organic growth through mutual connections within the segment and makes it easier to capture adjacent segments later.

Researching your selected segments is also vital. Google them or read market reports. You can even interview a few representatives of your perceived segments. Do what you can to find out if what you think of them actually aligns with reality!

# Map market segments – identifying market types

Once you have segmented the markets that show potential and have developed some feeling for the segments by doing research, you create a strategy on how to capture those market segments. However, you cannot capture all segments at once, so you start mapping them with the use of this market type matrix:



#### Figure 2. Market segments types

The two market types you should be targeting are:

- the High pain niche market, this could become your Beachhead market;
- the **Blue ocean markets**, large markets with big issues and little to no competition.

The **Red ocean** refers to a (big) market with issues, but also with lots of competition, sharks swimming around that will eat you alive. Hence the *current* pain in that market is much less as there are already solutions available.

The term **Beachhead** is borrowed from the military, where it is used to describe a strategic invasion by a military force, such as the invasion of the beaches of Normandy in 1944. So, your Beachhead market is a very small and strategically selected market that you are going to "invade" first.

The advantage of a high pain niche market is that it is an ideal test market: customers most likely do not mind it too much if your product does not immediately work perfectly *and* it keeps the potential sharks at bay. Once you have identified the market type for each segment, then you can map these Segment-Market-Type combinations onto another graph: market size versus product roadmap.

The result should look similar to the graph below:



Figure 3. Mapping out market segments

The Y-axis represents the market size, ranging from small to large. The X-axis features product development within your market segment, ranging from minimal viable up to full-fledged products.

Using this graph, you can create a rudimentary strategy for your product and market development. Which segments are you going to address? Which segments are currently unclear or uncertain? And which segments will you ignore?



#### Figure 4. Strategizing on product roadmap

By determining what to ignore and what is certain, the graph effectively highlights your Beachhead market, which is the green dot close to the origin of the graph. This market segment is most ideal for your *minimal viable product* (MVP) as it is a high-pain niche market with low competition levels.

Now why don't you simply and immediately go for the blue dot in the upper right-hand corner?

Because of the time and effort it takes to capture a market!

# **Rogers' innovation diffusion model**

To properly understand this 'time to capture a market', we need to go back to 1962 when Everett Rogers published his *Diffusion of Innovation*. In the decades that followed, the book was updated several times, but the essence remained the same, which is this:



Figure 5. Penetration of target market

In case you are wondering: yes, this is the origin of the famous hockey stick growth prediction often ascribed to startups. Please note: that hockey stick has an ending!

This s-curved graph is better known by its non-cumulative sister, also created by Rogers in the third edition of his book in 1983, which looks like this:



Figure 6. Diffusion of innovation - Rogers' 83

For those unfamiliar with these curves, let me give a short introduction. A new technology has to go through several social groups in order to be adapted. So, when you bring a new technology onto the market, whether it be medication, software or hardware; *all successful* innovations follow this path.

A simple example: if there have recently been quite a few break-ins in your neighbourhood (the pain), and both of your neighbours installed a new type of lock on their front doors on the same day in response, you are probably inclined to at least have a look at it, and you might install one yourself.

# Innovation diffusion – the salesforce example

Let's take a closer look at this graph and each social group involved by using a real-life example: Salesforce.

You are probably familiar with the term *SaaS*: Software as a Service. However, there was a time when *SaaS* did not exist. The startup Salesforce was the first to coin that term and introduce it to the market. Salesforce created the first online software tool for <u>C</u>ustomer <u>R</u>elation <u>M</u>anagement, or CRM.



#### Innovators

When Salesforce launched in 1999, introducing business applications through a website, they targeted the 'Innovators' - a social group that roughly covered 2.5% of the market segment and was keen on adopting this revolutionary Software as a Service (SaaS) model. These 'Innovators', were primarily techsavvy businesses and startups in need of a scalable *CRM* solution without the traditional on-premises overhead which was too expensive for most. Hence, they were willing to embrace the risks associated with this unproven innovation. And even though 'Innovators' are often more socially isolated and rely on close-knit networks, back in 1999 they set the stage for Salesforce's pioneering Software as a Service approach.





#### **Early adopters**

After the 'Innovators' validated Salesforce's revolutionary Software as a Service (SaaS) model, the 'Early Adopters'—the second social group consisting of visionary leaders within their industries—began to recognize its potential. These 'Early Adopters' are by nature more integrated into the local social system than the Innovators and are known for their discerning adoption choices and opinion leadership. Often serving as role models, these companies, frustrated with the limitations and costs of traditional *CRM* software, were drawn to Salesforce for its rapid deployment, customization, and the promise of a scalable *CRM* solution. Their role as industry trendsetters further set the stage for Salesforce's expansion.



Figure 8. Early adopters

# **Early majority**

Capturing most of the 'Early Adopters' not only validates the innovation but also paves the way to engaging the next group, the 'Early Majority'. This social group represents approximately 34% of the market. It requires evidence of success and often succumbs to peer pressure or a desire to match their peers before adopting new technologies, adopting innovations just before the average market member. As Salesforce's SaaS model gained credibility, it attracted more pragmatic companies, especially larger ones needing proof of benefits, stability, and *scalability*.





This is to be the most challenging phase for any startup because during this phase they need to do two things: 1) *Scale up*, which is a vast challenge in itself and 2) *start* with the introduction of your *next product* or start entering *new market segments*.

# Late majority

Once Salesforce had effectively engaged the 'Early Majority', demonstrating the value and stability of its SaaS model, it naturally progressed to address the 'Late Majority'—representing another ~34% of the market. This social group, characterized by its scepticism towards innovations, only adopts new technologies after seeing widespread acceptance. Their motivation often stems from social pressure and the economic benefits of more affordable solutions. The broader acceptance of SaaS and cloud computing encouraged even the most conservative companies, previously wary of cloud security and burdened by lengthy procurement processes, to adopt Salesforce. By this stage, Salesforce had solidified its position as a *CRM* leader, significantly reducing the perceived risk of adoption for the 'Late Majority', who now found the proposition increasingly compelling due to social conformity and improved cost-effectiveness.



Figure 10. Late majority

# Laggards

Finally, Salesforce addressed the 'Laggards', the final ~16% of the market. 'Laggards', known for their aversion to change and adherence to tradition or kept back by financial constraints, only embrace innovations when they become necessary or achieve conventional standard status. In the case of Salesforce you can think of government agencies and business sectors with stringent compliance demands, that are traditionally slow to adopt new technologies. They transitioned to Salesforce's cloud-based *CRM* only when it emerged as the industry standard or when their existing systems became obsolete.



Figure 11. Laggards

# Why do market introductions fail?

As stated earlier, all markets you address will follow this path *if* you manage to *successfully* execute your market introduction. However, about 42% of startups fail on this account because their market penetration curve does not look like the *Innovation Diffusion* model, but more like the graph indicated with the red arrow:



Figure 12. Too slow market adoption

This is most likely due to poor market research. The key issue is that most technology-based startups take too long to get to *this* point:



Figure 13. The 17% mark

That point represents roughly 17% of the total market share. Failing to reach that point 'in time' will lead to the 'no market need' reason of failure of the startup.

#### What defines this 17%?

Let's go back to the example of the innovative lock both your neighbours installed. Imagine two scenarios:

- 1. Your left-door neighbour installs a new innovative lock. For the **next three years** nothing happens and then someone across the street three doors to the right also installs that same lock.
- 2. Your left-door neighbour installs a new innovative lock and **one week later** your right-door neighbour does the same.

Do you feel the difference? When introducing innovations to the market, momentum is crucial! In short: if it takes too long for your product to 'penetrate' the market, you will not generate enough awareness for the market to catch on. This means that you need to hit that "17% mark" as soon as possible! Fail to do that and your market introduction subsequently fails.

Assuming your high-tech startup has limited resources, then you will not have the capacity, time and money required to penetrate a large market fast enough. Therefore, you are doomed to fail if you try.

This is the reason why you start in a 'high pain *niche* market'. A *smaller* market segment with a *huge* appetite for your innovation will make it a *lot* easier to make your startup grow, as it allows you to build up the experience required to enter that larger market and at the same time prove to the rest of the world (i.e. investors) that you can deliver.

# Additional reading material

One book I can definitely recommend more in general is 'Disciplined Entrepreneurship' by Bill Aulet. There's also a chapter (the 1<sup>st</sup>) on market segmentation.

# 2. Mapping stakeholders

To successfully bring a new innovative concept to the market, it is essential to understand who your stakeholders are and how they will react to it. The stakeholder positioning map is an excellent tool for this.

# The basics of mapping stakeholders

The term *stakeholder* refers to any individual, group, or organization that can affect or is affected by the actions, decisions, or policies of a business or organization. Many groups can be stakeholders: suppliers, customers, partners, and financial and regulatory organizations, just to name a few. Identifying and understanding your stakeholders is crucial to the successful commercialization of any innovation. It involves knowing their needs, expectations, influence, power, interest, values, communication preferences, and legal requirements. By gathering and analysing this information, a stakeholder engagement strategy can be construed, ensuring effective communication, collaboration, and alignment with stakeholder needs and expectations.

#### Stakeholder positioning map

One tool to analyse your stakeholders is a stakeholder positioning map. Using this tool provides a quick overview of which stakeholders fit where and who is connected to whom. Most importantly, stakeholder positioning maps allow you to identify three essential aspects of your future business:

Value capture - who is going to pay you?

**Value add** - who is going to use it? In other words: who has that problem that your product solves?

**Technology gap** - where is the supply chain gap that prevents the product from being in the market?

These three aspects are often mixed up because we often have business-toconsumer (B2C) situations in mind. There, the value capture, value add, and technology gap are usually all in the same spot—the customer. For example, you sell coffee machines to individuals. In that case, the customer is paying for it, using it, and does not have the technology yet.

But also in B2C there are exceptions: children's toys, for example. In that case, parents *pay*, whereas children *use* the toy. In business-to-business cases these relations can become less obvious. Especially then, a stakeholder positioning map can give you the right overview.

The first step in creating a stakeholder's map is to identify and map out the supply chain. You can start with your suppliers on the left and your buyers on the right. Note that the buyers are not necessarily the users; they might be further down the line. In the second step, you add regulatory bodies that you must deal with and connect them. And finally, in the third step you check if the business essentials of your company are properly anchored in the map.

Let's have a look at the children's toy example. The supply chain could, for example, look like this:



Figure 14. An example supply chain - children's toys

The plastic suppliers and the parts are on the left, you are in the middle, and the distributor, retail, and parents are on the right. After identifying and adding the primary suppliers, you can subsequently include secondary suppliers that you depend on, like suppliers of nuts, bolts, glue, paint, and other materials. When that is done, you identify and add regulatory bodies such as the CE certification and the Netherlands Food and Environmental Authority (NVWA). You then check who on your map has to deal with those bodies and you connect them. Finally, you add the last arrows and label the stakeholders with the value adds, capture, and tech-gap labels, which might lead to the discovery that you forgot the end users: the kids.



NVWA Value Capture (who is paying)

Value Add (who is gaining) Innovation Gap (what is needed)

Figure 15. An example supply chain - more detailed

Keep in mind that it does not have to be perfect. You will evaluate your assumptions at a later stage and update the map accordingly.

# **Example case - reflex**

It is actually doubtful whether a toy stakeholder map would be this straightforward. However, more realistic examples are quite hard to find as they contain strategic and sensitive information. Fortunately, we can share a map created at TNO using the Reflex technology developed in-house.

Reflex is a complex software tool for the energy market. The tool comprises an optimization algorithm that can be used to balance the supply and demand of electricity, avoiding grid congestion and preventing overload of the electricity grid to the point that it could fail. Unfortunately, due to the complex nature of the energy market, it is not in commercial use and is currently only used in TNO research projects.

The reality behind the Reflex tool is very complicated. Therefore, the representation below is a simplified version for educational purposes only.

Let's take a look at this hypothetical case. A family buys an electric vehicle. They soon realize they also need a charging station and acquire that too. The charging station is attached to the electricity grid to recharge the car when necessary.

You are probably aware of the fact that, with the rise in the numbers of electric vehicles, solar panels, heat pumps, and more, the stress on the electricity grid is increasing. In the near future this will lead to grid congestion. Hence, we will need a system to counteract this issue. One solution could lie in an increased demand-side flexibility of the electricity system. This means that when demand is high, electricity prices for charging your car are also high. Conversely, when demand is low, and there is a surplus of electricity, prices are also low or even negative, allowing you to save money by charging your car at that time. However, the trading itself can also lead to congestion, and this is where Reflex really has its strong point: it uses the electrical flexibility of a device's battery to charge it as cheaply as possible while preventing congestion of the electrical grid at the same time. The opposite is also possible: discharging your battery at peak demands can earn your money.



Figure 16. Home owner situation

Putting your car battery on the energy market in order to balance the load on the grid is called 'providing Flex'.

#### **Operational stakeholders**

To make this work, you need some kind of integrator with various settings. The one you are already familiar with is "charge when connected." Two new settings: "only charge when energy is cheap," and "provide Flex," will make sure you can earn some money with your battery by allowing the grid to use your battery to charge in case of an energy surplus or discharge when there is a peak demand for energy.

The integrator has to be connected to a central hub called an aggregator. A company that could provide this service is Jedlix, but it does not have the Reflex technology and therefore relies on TNO for licensing. Jedlix also depends on two other parties: first, a grid operator or distribution system operator (DSO), such as Stedin and Alliander, responsible for the electricity grid, and second, energy suppliers such as Eneco, Nuon or Green Choice.

Adding the energy market completes the supply chain.



Figure 17. Energy market supply chain

#### **Regulatory stakeholders**

The next step in mapping our stakeholders is adding the regulatory authorities. One important regulatory authority is the ACM, the Authority for Consumers and Markets. In turn, ACM is supervised by the Ministry of Economic Affairs.

This last entity is the one that should provide the answer to a very important question: "which of these stakeholders is the one to <u>determine</u> at what moment the homeowner may procure from or supply to the grid?" In other words: when the homeowner decides to push the button to provide Flex to the grid, who decides when and if their battery will *actually* supply or withdraw energy from the grid?

As long as that regulatory question is not resolved, the Reflex tool in this setting has no commercial future, even though it is vital to the future stability of the electricity grid.



Figure 18. Energy market supply chain - ACM supervision

#### **Business essentials**

The final step in stakeholder mapping consists of so-called business essentials.

In our example, TNO is the knowledge provider and Jedlix the party capable of introducing this technology to the market. TNO would license out the Reflex technology to Jedlix. Note that if Jedlix (or any other party) would not be willing to license and commercialize this, you would have a literal gap in the supply chain. This would mean that a new entity is required, usually a startup, that is willing (and capable) to introduce the Reflex technology to the market.

However, if there is already a willing and capable party on the market, it might be unwise to introduce this new technology through a new entity, as the risks associated with a new entity are high. An established party usually has a much bigger chance to successfully market the Reflex technology, due to its experience, network and financial backing.

The final piece of the puzzle in this map is the benefitting party. Who would gain from this technology, where is the added value? The first beneficiary is the homeowner, who would be allowed to trade on the electricity market, or at least charge when it's cheap.

Second, Jedlix would profit. The grid operator will also benefit, as the workload on the grid would be better balanced, requiring fewer investments in grid upgrades. With the grid operator, the State of the Netherlands as funder of these upgrades will profit as well. Finally, and a bit less obvious, the energy suppliers. They, too, profit from this, because it is not easy to quickly limit the output when the demand suddenly decreases. By better balancing the grid, it is easier and thus cheaper for them to deliver energy to the market. ReFlex - stakeholder map TNO CO ReFlex Home owner Energy supplier JEDLIX Charging station Energy market Aggregator Integrator Charge Less investments equired on the ne Charge cheap Grid operator Provide flex STREET: autiander

Value Capture (who is paying)
 Value Add (who is gaining)
 Innovation Gap (what is needed)

#### Figure 19. Reflex - stakeholder map

And with that, we have the picture complete. The complete map immediately provides some important insights. First of all, the aggregator takes centre stage in the supply chain. Second, there are several parties that stand to gain from the Reflex software; it might be possible to capture that value as well, but it's indirect and therefore less straightforward. And finally, it shows that you have to deal with the regulatory authorities, as they can seriously impact your ability to pivot in this market and therefore add to the risk of market entry.

# Additional reading material

It's difficult to find really in-depth material on this subject, but you have this: Actor Analysis - CIO Wiki: https://cio-wiki.org/wiki/Actor Analysis

And as with the last chapter, I can highly recommend 'Disciplined Entrepreneurship' by Bill Aulet, in this case chapter 12: Determine DMU (decision making unit).



# 3. Funding strategy

In this chapter, you will learn what a funding strategy can look like and the common terminology around startup funding. In my previous book, I already addressed this topic, so those familiar with that will recognize a lot in this chapter. As this always forms a major part of my work when mentoring startups, I chose to repeat it here and to also add a chapter on Value Inflection Points which ties into this chapter.

The chapter is divided into two parts:

#### Understanding funding stages and investment types.

We start with the stages of company development. From pre-seed to Series A, we will explore how funding needs to evolve with your company's growth. Understanding these stages is crucial for planning your funding strategy.

#### Valuation methods.

Next, we look at different methods to value your startup, including the Berkus Method and Venture Capital Method. These methods will help you in setting realistic expectations for your company's worth during funding rounds.

By the end of this chapter, you should have a comprehensive understanding of funding strategies for high-tech startups. Remember, the key is not only to secure funding but to strategically enhance your company's value with each investment round.

YEAR	<0	YEAR 1	L YE	AR 2 )	'EAR 3	YEAR	4 YEA	AR 5	YEAR 6	
STAGE	R&D	demo		pilot(s)	sel	l 1st 100		scale		
FUNDING STAGE	SMO/	pre revenu pre con pre-se	ue / np./ eed	post revenue / "scale-up competitive / growth phas seed series A"		post revenue / competitive / seed		ıp / iase / A"		
FUNDING TYPE	CR	"subsid informo convert notes	"subsidies / informals / convertible notes"		"subsidies (eu) informals / ROM's / early stage venture"				"ROM's / formal VC/CVC InvestNL"	
TIMING	YEARS	M 1-12	13-18	M 1-12	13-18	M 1-12	13-18	M 1-12	13-18	
FTE	A LOT	1 - 5	FTE	5 - 10 FTE		10 - 30 FTE		30 - 50+ FTE		
FUNDING		500K	- 1M	1M - 2M		4M -	- 8M	10M - 20M		
VALUATION	-	11	М	4M - 8M		8M 16M - 3		2M 40M - 80M		
SHARE	0%	80	%	60	1%	45	%	34%		

# Understanding funding stages and investment types

Figure 20. Funding strategy overview

This schematic overview shows an example of the timeline and different stages a company goes through. The top shows years where year one is the founding year of your company.

YEAR	<0	YEAR 1	YEAR 2	YEA	AR 3	YEAR 4	YEAR 5	YEAR 6
STAGE	R&D	demo	pilot(s)		sell 1st 100		SC	ale
	1							
	TNO				STAI	RTUP		

Figure 21. Funding strategy - product stage

Important to note is that these stages should reflect value increase moments. For example, before having a working demo, there is a clear technical risk in your company. Once you successfully demonstrate your technology, that risk is gone, and your company has increased in value.

Each stage should cover a period of 12 to 24 months, for reasons we'll get back to later. Once you've identified the different stages that your company needs to go through, you can determine the type of funding required for each stage.

YEAR	<0	YEAR 1	YEAR 2	YEA	R 3	YEAR 4	YEAR 5	YEAR 6
STAGE	R&D	demo	pilot(s)		sell 1st 100		scale	
FUNDING STAGE	SMO/ CR	pre revenue / pre comp. pre-seed	/	post r comp s	evenu oetitiv eed	ie / e /	"scal growth serie	e-up / phase / es A"

#### Figure 22. Funding strategy - funding stage

It's also important to keep in mind that each stage may require a different type of investor. In the early years of your company, there are typically three stages: pre-seed, seed, and series-A. The pre-seed stage is when your company has no income. The seed stage is when your company has some income. The series-A stage is when your product generates the first revenue, and you need to scale up. And please bear in mind that the terms A, B, C, etc., are used for various stages, and especially Deep Tech companies may reach series D before they start to sell something.

YEAR	<0	YEAR 1	YEAR 2	YEA	R 3	YEAR 4	YEAR 5	YEAR 6				
STAGE	R&D	demo	pilot(s	pilot(s)		pilot(s)		pilot(s)		l 1st 100	sc	ale
FUNDING STAGE	SMO/	pre revenue / pre comp. pre-seed	/	post revenue / competitive / seed			scal" growth serie	e-up / phase / es A"				
FUNDING TYPE	CR	"subsidies informals convertible notes"	/ . / e ear	"subsi info RC ly sta	idies ( rmals )M's / ge ver	"RO formal Inve	M's / VC/CVC stNL"					

Figure 23. Funding strategy - funding type

The different types of investors you can look for in these stages are:

- Friends, family and fools can also provide funding but be cautious as formal investors may not want them at the table. There are ways to deal with that, for example by structuring the deal such that these investors are part of a special purpose vehicle (SPV). This is holding company that holds all the direct shares in your company and the above-mentioned investors are shareholder of that SPV.
- Angel investors often invest for personal reasons and typically come in before formal investors. Angels typically invest in your company at a stage that formal investors are not yet willing to step in. Ideally you attract Angel investors with a strong affinity for the business in which you are active. They can open up their network for you as well as advise you in the business from personal experience.
- Regional development agencies or ROMs (regionale ontwikkelings maatschappijen) are semi-government regional investment funds that typically invest in the pre-seed and seed stage. They usually co-invest with formal investors, and they expect you to be active in their geographic regions. 'Active' in this case means that you have an office (preferably main office) situated in their province. In some cases, it is also ok if you have operations in one province and research in another. An example is LeydenJar, a company that has both IQ Capital and BOM as investors, because it has its research in Leiden (Zuid-Holland) and production in Eindhoven (Brabant). At the time that I write this, the following ROMs are active in the Netherlands:

- *Noordelijke Ontwikkelingsmaatschappij* (NOM) active in Groningen, Friesland and Drenthe;
- Oost NL in Gelderland and Overijssel;
- Brabantse Ontwikkelings Maatschappij (BOM) in Noord-Brabant;
- Limburgs Instituut voor Ontwikkelings Financiering (LIOF);
- ROM InWest in Noord Holland;
- Ontwikkelingsmaatschappij Horizon in Flevoland;
- Impuls Zeeland;
- ROM Utrecht;
- InnovationQuarter in Zuid-Holland.
- A special case is InvestNL and its subsidiary DeepTechNL, which are also semi-governmental investment agencies. They also usually only co-invest and are typically (but not exclusively) active at a later stage, usually series A+.
- Formal investors or venture capital firms are professional organizations with only one job: investing money to make money. Because of the high risks involved, they usually specialize in a focus area like enterprise software, semiconductor software, apps, sustainable innovations, etc. There are quite a few of these investors active in the Netherlands, and some are also internationally orientated.
- The last type of funding available are family offices. They usually are more interested in later-stage, longer-term investments, although they occasionally do early-stage investments.

For all categories mentioned, these are the typical stages in which investors invest, but there may be exceptions. It's worth knowing that all investors invest to create an impact, make money, or both.

This concept is crucial to your funding strategy, as investors will only pull out their wallet if their money leads to significant progress. Progress comes in the shape of so-called value inflection points, major steps in your company development process that typically take 9 to 12 months and increase your company's value. Examples of value inflection points are proof of principle, working demonstration and first sales. After reaching one or more value inflection points, you have decreased the risk of failing and have increased the value of your company. In chapter 9 these Value Inflection Points will be described in more detail. After reaching such a pivotal point, it is then typically time for the next investment round, which takes around three to nine months to realize. Adding this up, a complete cycle takes at least 12 months and ideally no more than 24 months.



Figure 24. Typical investment cycle

Hence most investment cycles cover a 12-month value-increase period in which you work on the next milestone and a six-month fundraising period for the next round.

To complete the picture, we have to add the average number of FTEs typical for each stage.

In the graph below, you can see what investors typically expect per phase or investment round, which is not necessarily right for your company. Deviating a bit from this standard is common, but a large deviation requires a lot of explaining and can lead to a lot of rejection. Which does not mean that you should completely change your strategy. Try to keep the strategy that you and your team believe in intact as much as possible. With that strategy in mind, try to create a narrative that fits the graph below as much as possible without a complete overhaul. Investors will test this narrative and they both expect you to be willing to change it and to push back on their suggestions. They want to know where you think the possibility for changes are and whether you (and your team) strongly believe in your strategy.

YEAR	<0	YEAR 1	YEA	AR 2	YEA	R 3	YEAR 4	YEA	NR 5	YEAR 6	
STAGE	R&D	demo	I	pilot(s)		sell 1st 100			scale		
FUNDING STAGE	SMO/	pre revenue pre com pre-see	e / p./ ed	post revenue / competitive / seed			ie / e /	gı	"scale-up / growth phase / series A"		
FUNDING TYPE	CR	"subsidies / informals / convertible notes"		"subsidies (eu) informals / ROM's / early stage venture"			fc	"ROM's / formal VC/CVC InvestNL"			
TIMING	YEARS	M 1-12	13-18	M 1-12	2 13	3-18	M 1-12	13-18	M 1-12	13-18	
FTE	ALOT	1 - 5 FTE		5 - 10 FTE		10 - 3	0 FTE	30 - 5	0+ FTE		
FUNDING	A 101	500K -	1M	1M - 2M		4M - 8M		10M - 20M			

Figure 25. Funding strategy full overview

# Pre-money and company value

Pre-money valuation refers to the company value before investment, while post-money valuation is the pre-money valuation plus the investment amount.

For example, if a company has a pre-money valuation of  $\notin$  3M and raises  $\notin$  1M, its post-money valuation is  $\notin$  4M. This is relevant because these values determine the share percentage of the shareholders. In this example, we assume a typical 80% and 20% division between the founders and TNO before the investment. After the  $\notin$  1M investment, the investors take 25%, as they contribute  $\notin$  1M out of  $\notin$  4M. The other shareholders dilute their shares by this 25%, ending up with 60% and 15% of the shares, respectively.

An overview of this example:

•	Current value of company	= Pre-money valuation	=€3M
•	Investment		=€1M
•	Post-money valuation	= € 3M + € 1M	=€4M

Dilution:

	Pre-investment	Post investment
Investor	0%	25% (€ 1M inv. of € 4M tot. value)
TNO	20%	15% (75% of 20%)
Founders	80%	60% (75% of 80%)

# Valuation methods

So how IS the pre-money value of your company determined?

If your company has a stable and predictable revenue stream, calculating the value is relatively straightforward. However, if you are a startup company, there is no established method to fall back on. Nonetheless, you need to determine a price. Here are four well-known methods to consider. We will conclude with a sanity check that I have learned/developed over the years.

## **Berkus method**

First, there is the Berkus method. The idea is simple: the value is calculated based on five topics:

- idea
- technology
- team
- partners
- revenue.

Each topic is separately valued between  $\leq 0$  and  $\leq 500$ K, whereby non-existent is zero, completely ready is  $\leq 500$ K. This leads to a maximum worth of  $\leq 2.5$ M. Not ideal, but it gives you a basis for the value discussion.

# Venture capital multiple

Our next example is a bit of an odd one but good to be aware of: The Venture Capital multiple. It is odd because you will likely not discuss this method with a potential investor. This method is a rough calculation that investors might do to check if your numbers add up. With this method, you check the exit values of companies similar to yours and the exit goal of the investor. With a few assumptions, you can estimate the value you can set for your company. For example, let's assume the investor invests € 1M and wants 10 times their investment back after a potential exit period of eight years, which is usual for pre-seed rounds. We will also assume that three more investment rounds are needed after this one, with a dilution of 25% per round. Finally, we assume, after doing some homework to back this up, that the exit value of similar companies is about € 100M. This results in the following:

Potential exit value:	€ 100M
Investment:	€1M
Potential exit period:	8 years
Multiple:	10x return on investment (ROI)
Perceived additional rounds before exit:	3
Perceived dilution per round:	25%

Let's go through the calculation:  $\notin$  100M exit, divided by the return on investment of 10x makes  $\notin$  10M. That diluted by 25% for three investment rounds makes  $\notin$  4.2M post-money. Finally, deduct the investment of  $\notin$  1M and you end up with a  $\notin$  3.2M pre-money value.

If you set a much higher pre-money value, the investor may conclude that they will never reach their return-on-investment goal, and it does not fit their strategy.

# **Milestone method**

The Milestone Method is similar to the former method, only this time we look at it from your company's perspective instead of that of the investor.

This method is based on two questions:

- 1. how much money do you need to get to the next, preferably big, value inflection point or milestone;
- 2. how big a share of your company are you willing to give up for it?

This is again in line with how investors think: invest money, let the company do the work to increase its value (reach Value Inflection Point), and continue to the next investment round. As an example, say you need 12 months to reach the next milestone and six months to raise the next round. Let's assume this would require € 1M. A typical round will likely lead to between 15% and 30% dilution, depending on your negotiation skills and the interest from investors. Let's assume 20%. This means that

Pre-money + € 1M = Post-money

€ 1M represents 20% of total value

→ Pre-money = € 4M

20% of your company equals the investment of the  $\in$  1M that you need, so the post-money value is  $\in$  5M, which makes the pre-money value  $\in$  4M. You can use this to play a bit with the impact of different percentages on your money values, giving you an idea of how low you want to go.

### **Benchmark method**

Saving the best for last: the Benchmark Method. How well did your sister company do under similar circumstances? This method is, in our opinion, one of the best value strategies you can employ as you can refer to real numbers under more or less the same circumstances. The steps are simple, though the work less so.

- 1. Step one is to calculate the range of your goal pre-money
- 2. In step two you visit websites like TechlyPoint, AngelList, Crunchbase, and other similar websites and look for comparable companies in your value range
- 3. In step three you list all the arguments why a certain company is relevant to compare yourself to it—think of the same tech type, the same market, the same country, same stage, same tech provider, etc. In the end, you have to convince the investor why this company is relevant

4. In the final step, you average the numbers, and you have your value. This gives you a strong position, as the investor will now need to explain why they would deviate from the market if they intend to do so.

With this final step, we have completed the picture. We have a funding strategy for the next six years. We have set a series of milestones during that period, identified the accompanying funding stages, and the corresponding investors. We have identified the investment cycles, generated some ideas on FTEs, required funding, valuation of the company at those stages, and we have some idea of what happens with your share in the company.

### Sanity check and some rules of thumb

When you have done this work for many years, you start to develop a feeling for what makes sense and what does not. Based on that experience and insight, I have developed two guidelines These guidelines are rough sanity checks to see whether your proposal makes any sense. You should NOT use these to value your company or bring them to the table when negotiating with an investor. Just be aware that an investor will also have these (or similar) guidelines in mind. And of course, as always, there will be exceptions. Both guidelines are quite simple:

#### FTE x € 1M

If you have 10 FTEs in service (including founding team) then your valuation ballpark figure should be south of  $\in$  10M. The reason for this rule is linked to your burn rate. If you have 2 FTEs in your company it is a huge challenge to burn  $\in$  10M in one year. Also, the risk for the investor is too high, because if one founder falls ill the available staff is effectively halved. But if there are 10 FTEs in the company, even if one founder falls ill there is still 90% capacity available to move the company forward.

The other way round, if you have 100 FTEs then  $\leq$  10M will not get you very far. It would only make sense as a short-term bridge loan, not as an equity round.

I have come across an example of this recently. One company (using fake numbers here) had raised  $\in$  5M of funds and had 17 FTEs. The valuation at the time was around  $\in$  10M. This combination resulted in very much difficulty raising VC money because their burn rate was too high for the stage (funding round) they were in.



This hopefully makes it clear that you cannot use this the other way round: if you have 17 FTEs then your company is not automatically worth  $\notin$  17M! If you only can reach a valuation of  $\notin$  10M then you should seriously consider lowering your burn rate.

#### Funds raised x 2

Another method to perform a sanity check on your valuation is to review the total amount of funding you've raised. This includes equity, subsidies, and loans, although loans, particularly Convertible Loan Agreements (CLAs), can be a bit tricky. We will delve into that in another chapter. For example, if you raised  $\in$  5M in investments, received  $\notin$  2M in subsidies, and have  $\notin$  1M in loans, then your ballpark valuation should be around  $2x(5+2+1) = \notin$  16M. This rule assumes that you should be able to at least double the amount of capital injection in terms of company value.

#### Wrapping up

One very important takeaway: when you are doing these exercises, please focus on the value and not on the percentages. If you need to dilute a lot but your company's value increases exponentially, it might be worth doing so. In the end, you are better off owning a little part of a lot than a big part of nearly nothing.

And that's my point: there is a certain balance in things. Hanging on to the percentages too much will slow down the growth of your company. Letting them go too much will increase growth but might impact your involvement. So, when doing this exercise, think about where you want to end up, both for yourself and for your team. What will make you happy and keep you motivated? Make sure that your strategy fits that goal.

# Additional reading material

Startup funding – Sjoerd Mol and Thomas Mensink

# 4. Convertible loans

When you start a company, you will need funding to start your operations. Regular loans are difficult to find because banks perceive your startup as too risky. On the other hand, equity investments require a company valuation which may be hard or even impossible in the early phases. Luckily there is a solution somewhere in between: this is the Convertible Loan Agreement or in short: CLA.

There are however some caveats for both the CLA providers as well as the current shareholders, which will be clarified in this chapter.

### What is a convertible loan?

CLA stands for 'convertible loan agreement'. It is also often referred to as a 'convertible note'. Effectively a CLA is a loan provided to the company that at a later moment in time can either be paid back or be converted into equity. This chapter consists of two parts. In the first part, we will discuss a typical CLA term sheet. In the second part, we will provide some examples to see what happens when an investor steps in and the CLA converts into equity, and how this can impact the cap table.

A small sidenote: occasionally we also encounter a SAFE construction, (Simple Agreement for Future Equity), or an ASAP (Agreement of Subscription for Advance Payment). With the risk of oversimplifying: these two are basically the same as a convertible note, but without the interest rate.

A second note: there are several terms for the two parties involved, like creditor and debtor, loan provider and taker, CLA holder and taker. For the sake of clarity, we will refer to the party that provides the loan as 'lender'. The party that receives the loan will be referred to as 'borrower'. The borrower pays back the lender, either in money or in shares.

#### Why a convertible loan?

Usually, a CLA serves the purpose of a 'deferred valuation'. That is, providing financial support to a startup company at an early stage, when the value of the company is still difficult to determine. Not that it will be any easier to evaluate the company in later stages, so it is a point of dispute.

A better reason is that the risk of failure is still so high that the perceived value of the company is low, which would result in such a big dilution of the founders' shares that investors do not want to invest in the following rounds. After all, the share percentage that the founders hold is already low, and it will decrease even further in the next round, with a long road ahead. Investors will argue that there is not enough incentive left for the founders to take it all the way to the end.

As a rule (not taking into account loads of exceptions!) ideally the *active* founders (in total) hold around 40-60% of the shares by the time the company reaches a 'series A' event. Note that with 'series A' event we don't mean a finance round that happens to give out series A shares, but a specific stage the company is in. See the chapter on 'value inflection points' for more info on this. Note that for this same reason it's generally unwise to have more than € 1M of CLAs in the company if you have not yet reached that 'series A' event. This because the total amount of loans will be deducted from your pre-money valuation. But more on this later.

So, deferring the valuation to a later stage, when the future of the company is clearer and the valuation higher, will leave the founders with a higher stake, but stacking too many CLAs before conversion will be detrimental to that effect.

When this conversion takes place the CLAs convert into equity, repaying the initial loan and effectively retiring the debt.

A final argument for CLAs is that it gives the lenders a bit more protection than a direct equity investment. Even if the loan is subordinated, it still has priority over the shareholders, who are the last to receive anything during the liquidation of the company. Subordinated, by the way, means that in case of default (that is when the company comes to an unfortunate end due to financial reasons) other creditors get their money first before the loan is paid back.

# **CLA term sheet terminology**

In this part we will describe the terminology of the CLA. Below are some of the typical terms used in a CLA agreement. We have used the Capital Waters template as an example (*www.capitalwaters.nl*).

#### **Principle amount**

# 2. THE LOAN

- 2.1 The Lender hereby agrees with the Borrower to grant the Borrower a loan in the amount specified in **Schedule 1** ("**Loan**").
- 2.2 The Lender shall make the Loan available to the Borrower ultimately 7 days after the signing of this Agreement by payment into the Borrower's bank account as specified by the Borrower to Lender.

The Principal Amount is the initial amount of the loan. It's called 'principal' because the actual amount to be converted into equity may be higher due to the compounded interest over time, or lower due to repayments.

#### The interest rate

#### 3. INTEREST

- 3.1 Interest shall be due on the outstanding sum of the principal amount and interest accrued thereon (compound interest) at a rate of [ \_ ]% per annum.
- 3.2 The interest shall accrue on a daily basis as per the date of receipt of the Loan by the Borrower and shall be calculated on the basis of the actual number of days elapsed and a year of 365 days. In the event of conversion, the interest shall cease to accrue on the last day of the month prior to the date of the event that triggered conversion.

The interest rate is usually based on Euribor. Euribor is the daily average interest rate at which European banks lend money to each other. The interest rate itself is usually compounded. To clarify: interest rates are either paid directly, accrued, or compounded.

What does that mean?

Paid directly means each day you pay your interest. This does not apply to CLAs.

If you do not pay it directly, but periodically, let's say, each month, then that's called accrued interest over a month. This applies to some CLAs.

If you don't pay interest directly, or only pay it partially, then the unpaid interest is added to the principal amount, and this is called compounded interest. This is most common in CLAs.

#### Discount

Discount:

[\_\_]%

When the equity investment is in place, a price per share is set, for example:  $\notin$  10. Because the CLA lenders stepped in at an earlier point in time and thus took more risk, it's only fair that they receive a discount on the current share price. Typically, this discount is 20%, but this can be as low as 10% or as high as 30%, which, in our example, means that CLA lender gets shares for respectively  $\notin$  8,  $\notin$  9 or  $\notin$  7 per share.

# **Maturity date**

Maturity date:the date [ \_ ] months following the date of<br/>signing of the first of the Permitted Convertibles,<br/>or such later date if an extension by the Lender<br/>Majority is given pursuant to Article 6;

The lender obviously wants to have an idea when the loan will ultimately be converted or paid back by the borrower. This ultimate date is the *maturity date*. If no conversion has taken place before then, the lender can force conversion at a (pre-determined) low share price. This will be stipulated in the loan agreement.

# **Qualified financing**

Qualified financing:	issue of Shares in the Borrower, against payment of an amount of at least € [ ], in one or more instalments (excluding the aggregate amount of any Permitted Convertibles converted in connection with such share issue);

During a following equity round (an investment round in which shares are issued), a price per share will be negotiated between the new investor and the existing shareholders.

Because of this, the lender is completely dependent on the share price, which is set by someone else. Hence, the lender wants some safeguards. *Qualified financing* is one of them. This term indicates the *minimal* amount that needs to be invested to *trigger* the conversion of the CLA into equity. This is to prevent exploitation of the deal. So, how would that exploitation work?

Imagine the lender provided the company with a  $\in$  1M CLA. At a later stage, the father of one of the founders, "invests" in the company. He does this by investing  $\in$  1 at a pre-money valuation of  $\in$  1B (billion!). Without the safeguard, the lender is now forced to convert their million euros, at a one billion pre-money, effectively giving them 0.1% share. That is why this clause blocks such an undesired conversion.

By setting the qualified financing to, for example,  $\notin 2M$ , it would mean that the *forced conversion* can only take place when the father or any other investor invests *at least*  $\notin 2M$ . It is quite unlikely that this will happen at a pre-money valuation of  $\notin 1B$ . Rather, the investor will set a realistic valuation, and the conversion can proceed.

#### **Trigger events**

As you might have noticed, we talked about 'triggering the conversion'. The conversion can automatically take place *if* certain *trigger events* take place. So, a trigger is an event that causes the CLA to convert into equity. This can be a qualified financing round, the maturity date, or another specified event. How the conversion takes place is stipulated along with the triggers.

# Valuation cap

And this brings us to the last term, which is not so typical, but is still used by some investors and it's good to be aware of the implications: the valuation cap.

A valuation cap is the maximum pre-money valuation at which the CLA converts into equity. This ensures that early investors are sufficiently rewarded for their early risk, even if the company's valuation significantly increases by the time of conversion. This is basically another safeguard, similar to the example of the one billion euros pre-money valuation. As this cap does not particularly provides the founders with the incentive to push the value of the company, a cap is fairly uncommon, also because a valuation cap can introduce additional complexity when the conversion takes place.

If an investor still insists on a cap, then at least make certain that the cap is not set too low, as it will be used as a reference point in the next valuation round. You should also do some calculations to see the effect of the discount when an equity event takes place. When doing this calculation, keep in mind that the discount does *not* apply to the valuation cap. This means that if the valuation cap is reached, the investor can *either* convert the CLA at the current share price, with the discount, *or* convert the CLA at a share price based on the valuation cap! To better understand this, here's an example.

We start with a company where the founders together hold 100,000 shares.

After founding, an investor steps in with a CLA of  $\in$  1M with a 20% discount and the valuation cap is set at  $\in$  4M.

INVESTIV	IENT	Share Price = Pre-Money / #Ordinary Share
ounder Shares	100,000	Share Price = € 4.5M / 100,000 shares
		Share Price =€45
CLA		
Principal amount	€ 1,000,000	
Discount	20%	
Сар	€ 4,000,000	
INVESTMENT		
Agreed Pre-money	€ 4,500,000	
Investment	€ 2,000,000	
Shareprice	45	

Figure 26. The effect of a valuation cap

One year later, a new investor steps in and agrees on a pre-money valuation of  $\notin$  4.5M. The share price is the pre-money sum divided by the ordinary shares, so  $\notin$  4.5M divided by 100,000 shares, this results in  $\notin$  45 per share.

CONVERS	SION		
Founder Shares	1	.00,000	
CLA			
Principal amount	€ 1,0	00,000	
Discount		20%	
Сар	€ 4,0	00,000	
INVESTMENT			
Agreed Pre-money	€ 4,5	00,000	
Investment	€ 2,0	00,000	
Shareprice	€	45	⇒ 4.5M/100K
Disc. shareprice	€	36	⇒ 80% x 45
Capped shareprice	€	40	⇒ 4M/100K

Figure 27. The effect of a valuation cap

Now the conversion can take place at *either* the discounted share price, which is 80% of  $\in$  45, so:  $\in$  36, *or* the conversion takes place at the cap of  $\in$  4M, which is  $\in$  4M divided by 100K, so:  $\in$  40.

In this scenario, it is obvious that the CLA lender opts for the discount and *not* the cap. As can be inferred, there is a threshold at which this choice shifts.

	со	MPARIS	ON			
Founder Shares	1	00,000				
CLA						
Principal amount	€ 1,0	00,000				
Discount		20%				
Сар	€ 4,0	00,000				
INVESTMENT						
Agreed Pre-money	€ 4,5	00,000	€	5,000,000	€	6,000,000
Investment	€ 2,0	00,000	€	2,000,000	€	2,000,000
Shareprice	€	45	€	50	€	60
Disc. shareprice	€	36	€	40	€	60
Capped shareprice	€	40	€	40	€	40

#### Figure 28. The effect of a valuation cap

In the examples above, you can see that this threshold lies at an agreed pre-money of  $\in$  5M, in which case both the discounted and the cap share price amount to  $\in$  40. Any higher pre-money will automatically result in the CLA lender choosing for the capped conversion.

# **CLA conversion methods**

In the case of an equity investment, the CLA lenders have the option to convert their CLAs. There are several conversion methods for this. Although 'conversion method' is a bit misleading, because the CLA lender can only choose to convert the loan at either a discounted or a capped share price (*if* a cap was agreed upon).

What we're actually talking about here is the method to decide on the *effective* pre-money valuation to be used for the conversion.

In all, there are three commonly used methods to decide on this *effective* pre-money:

- pre-money method: this method is the most founder friendly;
- **percentage-ownership** or **fully-diluted basis method**: this method is the most investor friendly and the most commonly used in the Netherlands;
- **euros-invested method**: this is the most balanced version where both the founders and the investors take a bit of the conversion pain.

And to be clear: the chosen method is decided by the founders and the *new* investor as this is part of the negotiations on the effective pre-money. The CLA lenders have no say in this (except to choose to not convert the loan).

Below are examples for each of the three methods.

### **Pre-money method**

Let's start with the easiest, the pre-money method, which is also the most founder friendly.

Deep Tech startup *Xmple B.V.* is founded with 100,000 shares. After a few months, Xmple makes a deal with investor OldCap Invest:  $a \in 1M$ CLA with 8% compounded interest and a 20% discount.

One year later, investor NewCap-Invest steps in with a  $\leq 2M$  investment at a pre-money of  $\leq 5M$ . The share price is calculated as pre-money divided by the total outstanding shares, or  $\leq 5M$  divided by 100K shares, which makes  $\leq 50$  per share.

Investment Round	#shares	%	
Founder	100,000	100%	
Total	100,000	100%	
Investment		€ 2,000,000	Shareprice
Agreed Pre-money		€ 5,000,000	= Agreed Pre-Money
			#outstanding shares
			= <u>5,000,000</u> 50 100,000

Figure 29. Pre-money method

If we forget the CLA of OldCap Invest for now, the cap table change would look like this:

Investment Round	#shares		%
Founder	100,000		71%
NewCap Invest	40,000		29%
Total	140,000		100%
Investment		€	2,000,000
Agreed Pre-money		€	5,000,000

#### Figure 30. Pre-money method

Here you see that the aim of NewCap-Invest is to have 29% equity in the company, in return for their  $\notin$  2M investment.

Taking into account the CLA, which, after a year, converts the  $\leq$  1M plus 8% interest. The share price for this is the  $\leq$  50 minus the 20% discount, which makes  $\leq$  40 at which the CLA converts.

#### CLA

Principal amount	€ 1,000,000
Interest	8%
Discount	20%
Conversion amount @ 1 year	€ 1,080,000
Discounted share price	€ 40

Adding this to the cap table, results in:

Investment Round#shares%Founder100,00060%OldCap (CLA)27,00016%NewCap Invest40,00024%Total167,000100%Investment $€$ 2,000,000Agreed Pre-money $€$ 5,000,000Shareprice $€$ 50.00			
Founder      100,000      60%        OldCap (CLA)      27,000      16%        NewCap Invest      40,000      24%        Total      167,000      100%        Investment      € 2,000,000      24%        Agreed Pre-money      € 5,000,000      5hareprice	Investment Round	#shares	%
OldCap (CLA)      27,000      16%        NewCap Invest      40,000      24%        Total      167,000      100%        Investment      €      2,000,000        Agreed Pre-money      €      5,000,000        Shareprice      €      50.00	Founder	100,000	60%
NewCap Invest      40,000      24%        Total      167,000      100%        Investment      €      2,000,000        Agreed Pre-money      €      5,000,000        Shareprice      €      50.00	OldCap (CLA)	27,000	16%
Total      167,000      100%        Investment      €      2,000,000        Agreed Pre-money      €      5,000,000        Shareprice      €      50.00	NewCap Invest	40,000	24%
Investment      €      2,000,000        Agreed Pre-money      €      5,000,000        Shareprice      €      50.00	Total	167,000	100%
Agreed Pre-money      €      5,000,000        Shareprice      €      50.00	Investment		€ 2,000,000
Shareprice € 50.00	Agreed Pre-money		€ 5,000,000

Figure 31. Pre-money method

And here things immediately get interesting. The conversion is done as was initially agreed: at the pre-money price, with a 20% discount. However, as you can see, this has a serious impact on the equity stake of NewCap-Invest, which goes down from their expected 29% to 24%. You can expect that NewCap-Invest will not agree to this.

	WITHOUT CLA			WITH CLA	
Investment Round	#shares	%	Investment Round	#shares	%
Founder	100,000	71%	Founder	100,000	60%
			OldCap (CLA)	27,000	16%
NewCap Invest	40,000	29%	NewCap Invest	40,000	24%
Total	140,000	100%	Total	167,000	100%
Investment	€	2,000,000	Investment		€ 2,000,000
Agreed Pre-money	€	5,000,000	Agreed Pre-money		€ 5,000,000
Shareprice	€	50.00	Shareprice		€ 50.00

#### Figure 32. Pre-money method

This pre-money method is the most founder-friendly approach for converting a CLA. However, as mentioned, most investors will not agree to use this methodology, which brings us to the next example.

#### Percentage owned or fully diluted method

It's probable that in our example, the investor "NewCap-Invest" would address this, by stating that the pre-money valuation is set on a *fully diluted basis*.



Figure 33. Effect of 'investment on fully diluted basis'

This means, that the CLA conversion takes place first (1), then the pre-money is set to the agreed price of  $\in$  5M (2), followed by the  $\in$  2M equity investment (3). But when the conversion takes place, the pre-money automatically increases to  $\in$  6.08M. After all, a conversion is effectively an equity investment, and the pre- and post-money *cannot* be the same when an equity investment takes place.



#### Figure 34. Effect of 'investment on fully diluted basis'

So, in order to end up with a post-money valuation equal to the price agreed upon with NewCap-Invest, the conversion has to take place at a lower premoney.

However, the CLA explicitly mentions that the conversion will be based on the *same* pre-money as the new equity investment. These two premises don not inherently align. So, how does this conversion, and subsequent investment, actually transpire?

This brings us to the fully diluted calculation method, more formally called the 'percentage ownership method'. In this case, the share percentage NewCap-Invest wants to end up with, is fixed and amounts to 29% in our example. So, what the investors tells you is: "the investment takes place at the agreed pre-money, but on a *fully diluted basis*".

What the investor is *actually* saying is that the investment does *not* take place against the agreed-upon pre-money, but against an *effective pre-money*. The effective pre-money takes into account the fully diluted basis on which the investor wants to invest, which is obviously lower than the agreed-upon pre-money.

To keep things clear we will from here on refer to:

**Agreed pre-money** (APM) which is the valuation of your company before investment *and* conversion

**Effective pre-money** (EPM) which is the pre-money price used to calculate the share price, at which *both* the CLA converts, and the investment takes place.

# **Effective pre-money**

So what is the effective pre-money? You know that NewCap Invest wants to end up with  $\leq 2M/7M = 29\%$ . So two factors are fixed: the investment amount ( $\leq 2M$ ) and the POST-money ( $\leq 7M$ ). Hence, if any additional investments are made (like the conversion of the CLA) then this done at the cost of the PREmoney. In other words if you can calculate the value of the CLA then you can deduct that value from the agreed pre-money. This new pre-money value is called "Effective Pre-Money" or EPM in short. However, the CLA gets 20% discount on the share price, so how do you derive a 'value' of the CLA from that?

This is simple: you can either deduct 20% of the share price OR you can divide the CLA amount by 80%, which is just another way of getting to the same result. With that knowledge we arrive at the following formula:

 $EPM = Agreed pre money - \frac{CLA^*}{1 - Discount \%}$ 

\*CLA = Principal amount + Compounded interest

In comparison, the EPM of the *pre-money* method looks like this:

*EPM* = *Agreed pre money* 

And with this 'Percentage owned' equation to calculate the effective premoney, we can calculate the actual share price at which the investment *and* conversion take place, which looks like this:

Share price = Effective pre money # Ordinary shares

If we put in the numbers we get:

$$EPM = 5M - \frac{1.08M}{1 - 20\%} = 5M - \frac{1.08}{80\%} = 3.7M$$

Share price = 
$$\frac{3.7M}{100,000}$$
 = 37M

So the effective pre-money is  $\in$  3.7M with which we end up with an share price of  $\in$  37.

Applying this to our example cap table, we end up with this:

rany bin	ated method		
Investment Round	#shares		%
Founder	100,000		52%
OldCap (CLA)	36,986		19%
NewCap Invest	54,795		29%
Total	191,781		100%
Investment		€	2,000,000
Agreed Pre-money		€	5,000,000
Effective Pre-money			3,650,000
Shareprice			37
CLA			
Principal amount		€	1,000,000
Interest			8%
Discount			20%
Conversion Amount @ 1	year	€	1,080,000
Discounted shareprice		€	29.20

Figure 35. Cap table as result of 'Fully Diluted' conversion

Here you can see that the *effective* pre-money is about  $\leq$  1.4M lower than the *agreed* pre-money, lowering the share price at which the investment takes place from  $\leq$  50 to  $\leq$  37.

As you see, all boxes are checked using this method:

- ✓ NewCap-Invest was aiming for 29%, in return for their € 2M investment.
- $\checkmark$  The conversion takes place at the discounted share price.

As you might have noticed, the founders' shares take the full brunt of this latter conversion method They would have taken 60% with the pre-money method, but end up with 52% due to the percentage-ownership method used.

# **Generic use of effective pre-money**

The concept of the effective pre-money (EPM) is that the new investors want to get on board on a 'fully diluted basis'. Another way of putting this is that the post-money valuation is fixed, you can derive that from the earlier example. Next to the CLA, any SAFE, EPOS, ASAP, SARs, Options or Warrants in the mix will have the same effect on the post-money valuation.

Another way of looking at it is that all these constructions influence the number of shares issued during that round. Any shares that are issued increase the post-money valuation, well, in theory at least. If an investor values a company for a new investment round, typically they agree with you what percentage they get for their investment.

So, if in investor is willing to invest  $\notin 2M$  at a pre-money of  $\notin 4M$ , then they expect to end up at a post-money value of  $\notin 6M$ . Therefore, 'whatever happens', the VALUE of the company after the investment has to be  $\notin 6M$ . This means that ALL shares that are issued during that round need to be valued such that if you add them to the existing shares, the total ends up at a value of  $\notin 6M$ .

Let's take a more complicated example to illustrate this. I'm using some abbreviations:

- *PreM = Pre-money valuation;*
- *PostM* = *P*ost-money valuation;
- CLA<sub>value</sub> = the conversion value of the CLA.

 $PreM + CLA_{value} + SARs_{value} + Investment = \notin 6M$ 

From this you can easily conclude that the original pre-money is NOT  $\leq$  4M (when the investment value is  $\leq$  2M). And this is where the EPM comes into play. On a more abstract level:

EPM = PostM - Investment - Issued shares value

In case of our example:

EPM = PostM - Investment - CLA<sub>value</sub> - SARs<sub>value</sub>

We know the investment value ( $\leq 2M$ ). We can calculate the CLA conversion value, which is:

$$CLA_{value} = \frac{(CLA + Interest)}{(1 - Discount)}$$

#### Effective pre-money due to CLA CAP

I've explained how to derive an effective pre-money with a discounted CLA conversion. Sometimes however, you have a CLA with a CAP, for example  $\in$  1M. So how do you derive the value of that CLA (in case the Cap event is triggered). You'll need excel to calculate this for you but the formula is simple:

$$CLA_{value} = \frac{(CLA + Interest)}{\left(\frac{EPM}{CAP}\right)} = \frac{CAP}{EPM} * (CLA + Interest)$$

For example, if the Cap is  $\leq$  1M and the EPM is  $\leq$  2M, the CLA converts at half the valuation ( $\leq$  1M instead of  $\leq$  2M), effectively doubling the number of shares received compared to other investors. Another way to view this is that you could double the CLA amount and convert it at the EPM valuation, aligning it with standard investor terms. The other thing I explained is that 'investment on a fully diluted basis' basically means that you need to adjust your pre-money in order to get to the same (fixed) post-money. So if there are any other events for which shares are issued, e.g. creating an option pool or allocating more SARs, this too will be at the cost of the pre-money. The trick then is to calculate the VALUE of that event, and deduct that amount from the pre-money. This can obviously be tricky because e.g. to calculate the value of 100 extra SARs means that you need the share price and that share price is EPM/outstanding shares. The outstanding shares you know, these are simply all shares issued up to now. The EPM...yes that depends on the value of those 100 extra SARs, this is obviously an iterative calculation and you can use excel to do that for you.

#### **Euros invested method**

With one method strongly in favour by the founders, and another by the investors, a third method was invented in which all parties take a bit of the pain. This is the *euros-invested* method.

The method is roughly the same as the fully diluted method, with one difference: Effective Pre-Money is calculated with the percentage ownership method but *without* the discount. When compared, it looks like this:

# Percentage owned (fully diluted)

 $EPM = Agreed Pre Money - \frac{CLA^*}{1 - Discount \%}$ 

#### **Euros invested**

EPM = Agreed Pre Money - CLA

Filling in the numbers will end up with a share price of  $\in$  39.

Below we give an overview showing the three methods, highlighting the differences:

Pre-money I	Method	
Investment Round	#shares	
OldCap (CLA)	27,000	16
NewCan Invest	40 000	24
Total	167,000	100
Investment		£ 2,000,00
Agreed Pre-money		€ 2,000,00 € 5,000,00
Effective Pre-money		€ 5.000.00
Shareprice		€ 50.0
CLA		
Principal amount		€ 1,000,00
Interest		8
Discount		20
Conversion Amount @ 1 year		€ 1,080,00
Discounted snareprice	Mothod	€ 40.0
Investment Round	#shares	9
Founder	100,000	52%
OldCap (CLA)	36,986	19%
NewCap Invest	54,795	29%
Total	191,781	100%
Investment		€ 2,000,000
Agreed Pre-money		€ 5,000,000
Effective Pre-money		3,650,000
Shareprice		37
CLA		
Principal amount		€ 1,000,000
Interest		89
Discount		209
Conversion Amount @ 1 year		€ 1,080,000
Discounted shareprice	Method	€ 29.20
Investment Round	#shares	9
Founder	100,000	54%
OldCap (CLA)	34,439	19%
NewCap Invest	51,020	28%
Total	185,459	100%
Investment		€ 2,000,000
Agreed Pre-money		€ 5,000,000
Effective Pre-money		3,920,000
Shareprice		39
CLA		
Principal amount		€ 1,000,000
Interest		8%
Discount		20%
Conversion Amount @ 1 year		€ 1,080,000
Discounted shareprice		€ 31.36

Figure 36. Cap table comparison between different conversion methods
#### **Observations**

So, the question remains: which method to use and when? Here are my observations:

The *pre-money* method, which favours the founders the most, makes sense if you truly set a pre-money valuation given the current condition of the company *including* the loans or CLAs. It can also be used if negotiations on the pre-money get stuck and you're looking for alternative methods to move forward. Overall though, it's not an unfair perspective from investors to say: when a CLA converts into equity, that money is virtually withdrawn from the company *before* investment (so it can be added later as part of the *total* investment). And if you *withdraw* money from the company then the premoney value should be *lowered* accordingly.

The *fully-diluted* or *percentage-ownership* method favours the new investor the most. It is a method we, unsurprisingly, nearly always see in term sheets drafted by investors. And although investors *do* have a point concerning the withdrawal of the loan from the company before investment, you can have your doubts whether that *also* applies to the discount.

Which brings us back to the third method, the *euros-invested*. This is overall seen as the fairest method to calculate the effective pre-money. And the narrative makes sense: *real* money *is* withdrawn from the company and thus the effective pre-money *should* be adjusted accordingly. *However*, the fact that money lenders are willing to convert their loan into equity, inherently increases the value of the company:

- First: the debt the company previously had is gone
- Second: the interest rate on the CLA is gone
- Third: if the company defaults, the creditors no longer have precedence over the shareholders.

And this value increase should have a positive effect on the pre-money.

Also, keep in mind that the alternative would be that the lenders do *not* convert and then that same discount would *not* affect the founders as it would *not* be applied.

Hence, it's fair to argue that *because* the CLAs convert, the company's value inherently increases, and therefore the discount should be left out of the effective pre-money calculation. This relatively small change does not affect the new investor too much, but it *does* convey the right message: the founders did well, and we see value in the conversion.

And that concludes this chapter on convertible notes. For reference below you can find a schematic overview of all three methods:

METHOD	FAVOURS	EFFECTIVE PRE-MONEY	WHEN
Pre-Money	Founder	= APM*	<ul> <li>Stuck on Pre-money negotiations</li> <li>Pre-money value has taken CLA's into account</li> </ul>
Percentage Owned	Investor	$= APM - \frac{CLA}{1 - Discount\%}$	- Goto version of Dutch investors
Euros Invested	Balanced	= APM - CLA	- Recognition by investor that conversion generates value
			- Company debt is gone - Interest rate is gone - No creditor prevalance

Figure 37. Schematic overview of the three conversion methods

\* APM = Agreed Pre-Money

## Additional reading material

On convertible loans

https://www.re-cap.com/financing-instruments/convertible-loan

on SAFE notes

https://www.angellist.com/learn/safe-note

## 5. Term sheet terms

When running a High Tech start-up, securing investments is crucial. As investments are often paired with term sheets, it is important to know what they are and how they work.

#### What is a term sheet

Term sheets are important legal documents that outline the main investment terms covering aspects such as pre-money valuation and decision-making control. They serve to formalize agreements and establish clarity between parties.

Although term sheets are not legally binding, signing them signifies mutual understanding of the investment terms.

Term sheets usually follow a fairly strict and typical structure. In this chapter we will go through an example term sheet and cover its various aspects. The example is again from Capital Waters:

Capital Waters www.capitalwaters.nl

Negotiations on the term sheet will focus primarily on the share price and the amount to invest.

After the involved parties reach agreement on a term sheet, a due diligence will take place through which the investors check your company. Sometimes, things arise that they don't like and the terms of the term sheet have to be renegotiated. After a satisfactory due diligence, the terms that you agreed upon are converted into contracts and signed by all parties involved. Before we dive in, it's essential to emphasize the importance of trust in contractual agreements. Contracts like these serve two purposes:

- making implicit understandings explicit (avoid assumptions) and
- providing guidance when things go wrong.

As circumstances change for all parties involved, unexpected challenges can arise. By addressing potential issues in advance, these contracts offer clarity and fairness in difficult situations.

## Term sheet terminology

There is quite some terminology used in a term sheet., We will cover the topics below.

- General clauses
- Securities and risk mitigation for the investors
- Control of shares
- Control of the company
- Liquidation preferences
- Anti-dilution protection

## **General clauses**

## **Conditions precedent**

Conditions precedent	<ol> <li>Satisfactory outcome of due diligence investigation;</li> <li>Investors having obtained written approval of [ ]:</li> </ol>
	3. Signing of final Documentation.
	Conditions precedent

These are the conditions that *have* to be met before the deal is closed. Usually these are:

- 1. Satisfactory outcome of due diligence investigation,
- 2. Investors having obtained written approval of their investment committee and
- 3. The final documentation is signed.

## Why?

This gives the investor a way out of the deal before closing.

## **Binding conditions**

Binding conditions	<ol> <li>Parties to this Term Sheet are bound to negotiating on an exclusive basis until the intended date of Signing. Until this date, the Company and the Original Shareholders agree not to solicit offers from other parties for any financing of the Company:</li> </ol>
	<ol> <li>Parties to the Term Sheet will keep secret the contents of the Term Sheet as well as all exchanged business and company information. Earlier signed confidentiality agreements will remain in force;</li> </ol>
	<ol> <li>This Term Sheet is governed by Dutch law. The competent court for any dispute is the court of Amsterdam.</li> </ol>

The stuff you're contractually bound to when you sign the term sheet. Usually this is valid during the agreed upon period of the term sheet and covers:

- 1. Exclusivity, in other words you are not allowed to deal with any other investor during a certain time, for example 3 months.
- 2. Confidentiality: you are not allowed to disclose anything with third parties concerning the ongoing deal

## Securities and risk mitigation for the investors

## Restrictive covenants a.k.a. non-compete

Restrictive	The employment agreement or management
covenunts	managers of the Company will include customary
	IP transfer clauses and non-competition and non-solicitation provisions, in a form reasonably accontable to the Investors
	acceptable to the investors.

This is a typical clause that demands that founders state that when they leave the start-up they may not work at another company (or start one themselves) that is active in the same competitive field as the current start-up. This is usually combined with a non-disclosure clause stating that the intellectual property and know-how generated at the start-up may not be disclosed by you.

#### Why?

This should be fairly obvious, should one of the founders leave, and start working for another company, it would be rather devastating for the start-up if that other company suddenly has a very knowledgeable employee!

#### Warranties

Warranties	The Company and each of the Founders will provide customary warranties. The maximum liability for the Company under the warranties will be limited to the Investment Amount. The maximum liability for each of the Founders under the warranties will be limited to 50% of the annual gross remuneration of the respective Founder as per the Closing (in each case except in the event of fraud or deception).
------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Warranties are a series of statements about the start-up that the investor relies one when investing. If a statement turns out untrue *and* this has a negative impact on the company, then the investors can demand compensation.

The compensation amount is usually limited to the invested amount and will be paid via additional shares to be issued to the investors. Our general advice is to have a good look at each and every of the warranties as they each can make you liable for something.

#### Why?

Well, let's say you have painted a much brighter picture of the current state of your company than reality dictates, and you manage to keep the truth hidden from the investor during the due diligence. If the company grows much slower because of this, the investor can demand compensation.

## Founder vesting or reversed vesting

Founder
(reserve)
vesting

[\_\_]% of the Founders' shares shall be subject to a [\_\_] year vesting schedule (linear monthly vesting). Customary good leaver and bad leaver provisions will apply.

The investor wants some assurance that the founders will not leave the company just after the investment has taken place. One way of establishing that, is to reverse-vest the founders' shares. This means that a founder, on paper, temporarily loses their right to a certain amount of shares they are holding. The founder will regain the right to those shares spread over a period of time, let's say, four years. This arrangement does not change the voting rights with regard to the shares of the founder. The arrangement is only relevant in the event the founder leaves the company.

Note that vesting is linked to good, bad and sometimes neutral or early leaver clauses, which we will describe below.

#### **Good leaver**

If a founder leaves the company under good leaver circumstances (for example: long term illness or in full agreement of the shareholders), the founder gets to keep his or her vested shares. These are however usually moved to the STAK (check entrepreneurial incentive plan chapter on that one).

#### **Bad leaver**

If a founder leaves the company under bad leaver circumstances (for example in case of fraud) then the founder has to return *all* his of her shares (so also the already vested shares).

## Neutral or early leaver

This is less common in a shareholder agreement, but usually wise to add because it prevents polarization amongst the shareholders (and lengthy procedures).

If a founder leaves the company under pressure of the shareholders or the board (for example because the person is not a good fit in the team or the person doesn't do a proper job) then the neutral leaver clause can be enacted. The shareholder then has to return a pre-defined part of its vested shares back to the company. It is up to negotiation to what extent the founder may keep his or her vested shares.

#### Why a vesting and a leaver clause?

Many founders struggle with the above vesting and leaver clauses and don't understand why these are in place. Let's go back to the reason why we draft contracts: to reach an explicit understanding and mitigate any adverse effects 'when things go wrong'. Leaver clauses fit nicely in both categories. Below are a couple of questions to ask yourself when contemplating these clauses:

- 1. I (founder) want to leave the company at a certain moment because of X, what happens with my shares?
- 2. They (the other founder or founders) have 40% of the shares and six months after founding the company, they decide to leave the team. Is it fair that they keep their 40% of the shares?
- 3. A founder commits fraud, logically you decide to kick that founder out, but what happens with that founder's shares? Can he or she keep them?

These questions clearly show that leaver and vesting clauses are essential, not only for investors, but also for you as founders.

#### Lock-up

Lock-up	During the first [five] years after closing, no
	transfers of Shares held by the Founders may be
	made without the approval of the Investors.

Usually up to five years after closing the investment, the founders may not transfer (for example: sell) any shares without investor majority approval.

#### Why?

Mainly for two reasons:

- Although this is mostly covered with vesting, this gives the investor some extra insurance that the founder will not prematurely leave the company.
- A more important reason is that selling of shares by *any* of the shareholders at an early stage can give off a negative signal. After all, why would someone want to sell shares of a company that is on the rise? This lock-up prevents that.

And that's it on securities and risk mitigation terms. We will continue with who has what to say over dealing with shares and at what point in time.

## **Control of shares**

In this part we will focus on the terms that describe what shareholders can and cannot do with their shares.

#### **Right of first refusal**

Right of first refusal	All Shareholders will have a priority right of first refusal on transfers of any Shares. Investors will be		
	free to transfer Shares (and associated rights) to other entities within their group.		

In case any shareholder decides to sell his or her shares and has an offer from a third party that wants to buy those shares, then the other shareholders have the right to buy those shares on equal terms. Only if all shareholders decide to refrain from it, can those shares be sold to a third party. In case multiple shareholders are interested in buying them, the amount they can buy is based on their current relative share in the company.

#### Why?

When a shareholder is free to sell his or her shares and this happens at a time the company valuation is still relatively low, it could be an interesting deal for a third party to step in. However that third party did not carry any of the previous risk that all the current shareholders did carry. Hence it's only fair that the current shareholders have the opportunity to buy those shares at the price set by that third party.

## Drag along

Drag along	All Shareholders may be required to sell their
	Shares at any time if the holders of more than 50%
	of the issued Shares in the Company, including the
	Investor Majority, agree. As from five years after the
	Closing Date, the drag along right can be exercised
	by the Investor Majority also if not supported by a
	majority of votes in the General Meeting.

After a period of five years, if a third party expresses interest in purchasing the start-up (i.e., acquiring all shares) and the representatives of a certain percentage (usually between 50% and 75%) of the issued shares in the start-up decide to sell, then all shareholders are required to sell their shares.

#### Why?

Investors aim for a potential exit usually after a period of five to ten years. When this event takes place it's possible that the buyer wants to merge the start-up with his or her own company. In order to do that, they need all shares. This means that even a small shareholder with only 5% of the shares can block the entire deal, by not offering their shares for this deal. This clause prevents that from happening.

## Tag along

Tag along	If any Shareholder has an opportunity to sell its Shares, the other Shareholders must be given the opportunity to sell a pro rata proportion of the number of Shares being sold on the same terms and at the same price.
	and at the same price.

This is the other way round: if any shareholder (after the lockup period) finds an opportunity to sell his or her shares and the shareholders do not use their right of first refusal, then all shareholders must be given the opportunity to sell their shares pro rata on equal terms.

For example, the total number of shares is 1 million shares and there are 3 shareholders. One shareholder holds 10% (100,000) of the shares, another holds 40% (400,000 shares) and the last one holds 50% (500,000 shares).

START	#shares	%	SALES	#shares	%	END	#shares	%
Shareholder 1	100,000	10%	Shareholder 1	-10,000	-1%	Shareholder 1	90,000	9%
Shareholder 2	400,000	40%	Shareholder 2	-40,000	-4%	Shareholder 2	360,000	36%
Shareholder 3	500,000	50%	Shareholder 3	-50,000 ↓	-5%	Shareholder 3	450,000	45%
			Buyer A	100,000	-10%	Buyer A	100,000	10%
Total	1,000,000	100%				Total	1,000,000	100%

#### Figure 38. Tag along

If a third party wants to buy 10% and has made an offer to one of the shareholders, then all three parties have the right to respectively sell 10, 40 and 50 thousand shares of their share total. Of course, if one party decides not to sell at all, the other two can sell more, but again: pro rata.

#### Why?

In contrast of the drag along, it's also possible that a third party wants to buy *control* over the company, that is: 51% of the shares. This could mean that a few shareholders in the company could sell all their shares, while some minority shareholders can't sell anything. Again, not a fair deal. This clause prevents that from happening. So in case of the 51% example, *every* shareholder has the right to sell 51% of his or her shares.

## **Pre-emptive rights**

Pre-emptive rights

All Shareholders will have pro rata rights to participate in future financings.

When new shares are issued to a new investor during a finance round, all current shareholders dilute. However, usually all shareholders have pre-emptive rights, giving them the right to buy shares at the new share price to partially or completely prevent that dilution.

START	#shares	%	New issued #shares:	PRE-EMPTIVE RIGHT	#shares
Shareholder 1	9,000	10%	10,000	Shareholder 1	1,000
Shareholder 2	31,000	34%		Shareholder 2	3,444
Shareholder 3	50,000	56%	10% of new total	Shareholder 3	5,556
Total	90,000	100%		Issues shares:	10,000

#### Figure 39. Pre-emptive right

For example, if a shareholder has 9,000 of a total stock of 90,000 shares (so 10%) and 10,000 new shares are issued, then the relative share of that shareholder drops from 10% to 9%. In that case that shareholder has the right to buy 1,000 (or fewer) of those issued shares.

#### Why?

Well, it's common knowledge among investors that the high risk (and potentially low return) occurs during the early stages of a company and the low(er) risk (and potentially higher return) occur in the later stages. Hence this clause is added to make certain that the investor at least has the *possibility* to keep his or her share percentage intact, providing a higher chance on bigger returns.

## Control of the company

In this part we will focus on the terminology that describes control of the company, in other words: who has what to say about what?

## **Preference shares**

issued divided between an Initial Issuance of [] Preferred Shares and a Second Issuance of [] Preferred Shares.	Shares to be issued	[ ] preference shares (" <b>Preferred shares</b> ") divided between an Initial Issuance of [ ] Preferred Shares and a Second Issuance of [ ] Preferred Shares.
-----------------------------------------------------------------------------------------------------------------------	------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

When the company is incorporated, a certain number of shares are issued. These shares are usually referred to as 'ordinary shares' or 'founders' shares'. When new shares are issued to an investor, these new shares usually come with some privileges, for example, a preference on the exit proceeds. These share are therefore called 'preference shares'.

#### Why?

In order to answer that question, we first need to explain the three decision levels at which a resolution can be passed or rejected by the shareholders. These decision levels are:

#### Simple majority

Certain activities in the company require approval or a decision from the shareholders.

In case of a simple majority, at least 50% of the represented shares in the company are needed to pass the resolution. For example: you have 5 shareholders, each holding 20% of the shares, then you need at least 3 shareholders to agree on a resolution for it to pass.

#### **Qualified majority**

This usually has the goal to act as a veto. In case of the earlier example of 5 shareholders each holding 20% of the shares, if each shareholder has a veto on certain topics then the qualified majority is set to 81%. This means that a resolution will only pass if *all* shareholders agree.

#### **Investor majority**

This is similar to the above qualified majority, but in this case the veto is limited to the *preference shareholders*. The investors representing a majority of the preference shares need to agree.

#### Two important notes

- 1. Not every decision the management team of a company makes, requires approval from the shareholders. A certain majority is required for only a limited list of decisions.
- 2. The quality and investor majority voting types give the *individual* holders a *blocking* vote, but not the power to unilaterally *pass* a resolution. So the amount of control is limited.

#### The reason behind 'preference' shares and these three types

Next to additional control, preference shares also have an economic benefit, which we will describe in the 'Liquidation Preference' topic. The three majority types provide different types of control over the company.

The *qualified majority* type, which is also called a 'minority protection', protects a single shareholder with a minority share against decisions of the simple majority (51+%) that could financially harm that minority shareholder. For example: excluding their right of first refusal or their pre-emptive rights. The same applies to the *investor majority*, but in this case the protection is limited to only the *preference* shareholders instead of the *minority* shareholders.

And finally there's the simple majority as you also want to list other important decisions that require a shareholder decision, but you don't want to risk a blocking vote of a minority shareholder.

Here you can see an example of which majority is required in which case:



Figure 40. Voting majorities

## **Management board**

Management	Management Board will consist of [ ] in the
board	position of [ $\_$ ] and [ $\_$ ] in the position of [ $\_$ ].

In general, three founders form the management board of any start-up. They become the CEO, CTO and CFO. Note: management members are not necessarily founder or shareholder. It's, however, common to give new management some shares in the company and allow them to buy additional shares.

Keep in mind that changes in management are usually decided by the previously mentioned *investor majority*. This means that, in case of the above example, two investors could demand and enforce a change in the management team, which could result in the stepping down of a managing director and the introduction of a new member. This sounds rather crude but when this happens, this is usually done in good consultation with the team. Usually, the director concerned is already aware that this is a wise move to make. The last thing an investor wants is a bad relation with, or among, the founders and management.

#### Why?

The investors want to know who is responsible for what. So when they, for example, have specific questions concerning finance, they can address the *CFO* directly.

## Supervisory board

Supervisory	The Company will establish – at the Investor
board	Majority's first request – a Supervisory Board
	consisting of three members. One member will
	be nominated by the Investor Majority and one
	member will be nominated by the Founders. The
	third independent member will be nominated by a
	two third majority of votes of the General Meeting
	including the affirmative vote of the Investor
	Majority.

In Dutch this usually is the 'Raad van Commissarissen' and usually consists of at least three members.

The supervisory board oversees the management board and general affairs of the company, providing both requested and unsolicited advice to the management board. It has legal obligations and powers. The Supervisory Board decides in case of conflict within the management board, oversees financial reporting, communicates with the works council, and approves management decisions as specified in the articles of association or shareholders' agreement.



#### Figure 41. Supervisory board

Often, one member is appointed by the founders, one member by the investor and one neutral member chosen by both the investor and the start-up. It is also common that when *several* investors participate in an investment round, each investor appoints one member of the supervisory board. Most commonly, supervisory boards are formed after a series-A investment at the request of the investors.

#### Why?

Two main reasons:

- 1. For certain matters that lie outside the mandate of the management board, you don't want to have to setup a shareholders meeting: less hassle and a smaller group of persons involved.
- 2. It's in the name: supervisory. Shareholders usually have the right to check for example the financial matters, but that is only once a year for approval of the annual accounts and budget. At other times it's only on request. A supervisory board actually has the job to keep track of the company and regularly (usually four times a year) check the status, and if required: give advice.

#### **Reserved matters**

Reserved matters	Certain fundamental corporate measures and business transactions, as will be set out in the Documentation, will be subject to the prior approval of the Supervisory Board, or for as long
	as no Supervisory Board has been installed, by the Investor Majority.

Certain management board decisions have to be approved by either the supervisory board or, in its absence, the investor majority.

This is usually quite a long list of decisions, but to give you an idea:

- Any expenses, loans, commitments, etcetera that are not covered by the approved annual budget, above a certain threshold, for example: € 50K.
- Instalment of an Employee Incentive Plan, like an ESOP or a SAR.
- · Change of management or of management contracts.

#### Why?

A matter of control. The investors want to protect their investment and demand solid control over any important decision that may change the functioning of the company or impact their financial interest in the company.

## Liquidation preference

In this part we dive into a more financial and technical subject, which is very important in case the company is sold: the *liquidation preference* or in short: *liq. pref.* 

Nonparticipating liquidation preference In the event of a Liquidity Event (as will be defined in the Documentation), the Investors will receive an amount equal to the higher of: (i) 1x the subscription amount paid on their Shares; and (ii) the amount that would be distributed to the Investors if all Preferred Shares would have been converted into Common Shares prior to the Liquidity Event.

The liq. pref. is an arrangement that regulates the proceeds division among the shareholders after an exit.

There are quite some variants of the liq. pref. as it usually consists of 4 parts:

- interest rate;
- participating or non-participating;
- multiple;
- convertible or non-convertible.

Let's start with the most common variant: a 'one time convertible non participating liq. pref. with an interest rate of (for example) 5% per year'.

This means that when the company is sold, the investor has the *first* (preference) right to have the total invested amount refunded *once* (multiple) including the *interest rate*. They, however, do *not participate* in the share proceeds. But they have the right to *convert* that right into *participating* shares and with that share pro-rata in the exit proceeds. In that case they lose their (one time) preference and interest, but gain a price per share for their shares. This probably sounds complex so let's delve into some examples.

#### Example 1



Figure 42. Example - participating liquidation preference

An investor has invested 100K one year ago and now the company is sold for 200K. *Regardless* of the percentage that the investor has: he or she will receive 100K plus 5K interest from those proceeds.

*Non-participating* means that the remaining 95K is divided pro rata amongst the *remaining* shareholders. The investor does *not* participate in these proceeds.

Hence *participating* would mean that the investor *does* participate in these proceeds. So if the shareholder had 10% of the shares, then next to the 105K he or she would also receive 9.5K (10% of 95K) of the remaining proceeds. A *participating* liq. pref. however is highly uncommon.

## Example 2

The *multiple* refers to the 'one time' in the line: 'one-time non-participating Liq. Pref' and this is the *multiple* the shareholder gets on their investment on exit.



Figure 43. Example - 2x multiple liquidation preference

Now let's take the same situation as in the former example but now introduce a *multiple of 2* on the liq. pref. This would mean that *all* 200K proceeds go to the preference shareholder and the other common shareholders get nothing. A multiple higher than 1 is however very uncommon.

#### **Example 3**

Finally the term '*convertible* refers to the fact that the shareholder may *convert* their 'non-participating' 'preference shares' at any time into 'participating ordinary shares'.



Figure 44. Example - convertible liquidation preference

Let's take an example with an exit of  $\notin 2M$  in which the shareholder invested a  $\notin 100K$  at 10% of the shares. The investor can then choose to either receive  $\notin 100K + \notin 5k$  interest *or* 10% of the  $\notin 2M$  proceeds which would be  $\notin 200K$ .

For this reason the term *convertible* is only used in combination with *non-participation* as you don't need to convert when the shares are already participating.

As you can derive from the above examples, liq. prefs can have a huge impact on what you get as founder. If it's a successful exit, then most likely the impact is limited. If it's a moderate exit, you might be negatively affected by this clause, but when it's a marginal exit, you most likely end up with nothing. To clarify, one final example:

## Example 4

The day the company is founded, the cap table looks like this:

	#shares	%	€
Founder 1	300,000	40% €	-
Founder 2	300,000	40% €	-
TNO	150,000	20% €	-
Total	750,000	100% €	-

Figure 45. Example - 2x participating liquidation preference

As soon as an investor invests  $\in$  1M at a pre-money valuation of  $\in$  3M, the cap table changes to look like this:

	#shares	%	
Founder 1	300,000	30%	€ 1,200,000
Founder 2	300,000	30%	€ 1,200,000
TNO	150,000	15%	€ 600.000
			,
Investor A	250,000	25%	€ 1,000,000

#### Figure 46. Example - 2x participating liquidation preference

Based on this picture alone, one would presume that if the company is sold for  $\notin$  4M, founder 1 would end up with  $\notin$  1.2M. But investor A has negotiated a *participating* liq. pref. with a multiple of 2. So what does that do with the proceeds for founder 1?



Figure 47. Example - 2x participating liquidation preference

Let's see: the total proceeds are  $\in$  4M. The investor has a liq. pref. of 2, so, first and foremost, he or she gets twice the  $\in$  1M investment back, which leaves  $\in$  2M. Of that  $\in$  2M, founder 1 gets 30% and not 40% because the investor is also participating in the shared proceeds, so the founder ends up with  $\in$  600K and not with  $\in$  1.2M.

To give you an idea of the impact of each type of liq. pref., the overview below shows several exit proceeds and, depending on the liq. pref., what the investor and founder end up with.

		_						_						
		INVESTOR A (25%)						FOUNDER 1 (30%)						
PR	OCEEDS	NC	ON PART.	со	NVERTABLE	PA	RTICIPATING	NO	N PART.	со	NVERTABLE	PA	RTICIPATING	
€	500,000	€	500,000	€	500,000	€	500,000	€	-	€	-	€	-	
€	1,500,000	€	1,000,000	€	1,000,000	€	1,125,000	€	200,000	€	150,000	€	150,000	
€	4,000,000	€	1,000,000	€	1,000,000	€	1,750,000	€	1,200,000	€	1,200,000	€	900,000	
€	9,000,000	€	1,000,000	€	2,250,000	€	3,000,000	€	3,200,000	€	2,700,000	€	2,400,000	
€	100,000,000	€	1,000,000	€	25,000,000	€	25,750,000	€	39,600,000	€	30,000,000	€	29,700,000	
€	500,000		100%		100%		100%		0%		0%		0%	
€	1,500,000		67%		67%		75%		13%		10%		10%	
€	4,000,000		25%		25%		44%		30%		30%		23%	
€	9,000,000		11%		25%		33%		36%		30%		27%	
€	100,000,000		1%		25%		26%		40%		30%		30%	

Figure 48. Example - 2x participating liquidation preference: exit results

Let's go through these numbers. In the left column the proceeds on exit are shown. Top left is  $\in$  500,000, meaning that the company is sold for 500,000 euros. In the columns to the right you can see how much the investor gets and how much a founder gets depending on the chosen liq. pref. In the two boxes below you can see the actual percentage you get from those proceeds. In case of the  $\in$  500K, the investor gets everything and the founder nothing, regardless of the liq. pref.

In the case of a  $\leq$  4M exit and a participating liq. pref. you get 23% of the proceeds or  $\leq$  900K. You can also see that if the exit is big enough, the chosen liq. pref. no longer has a noticeable effect on the proceeds.

## **Anti-dilution protection**

Anti-dilution A broad-based weighted average anti-dilution protection will apply to all holders of Preferred Shares in case of a capital increase at a per share price lower than this financing round. General exceptions will apply.
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

In this final part of the chapter we will dive into another financial technical subject: the *anti-dilution protection*. The *anti-dilution right* completely or partially protects the shareholder from a *devaluation* of his or her shares. This typically takes place in case of a *down round*. A *down round* is when the share price is *lower* in a following investment round than the share price at which the shareholder bought his or her shares.

There are three types of anti-dilution protection. The most common is the *broad-based weighted average*, less common is the *narrow-based weighted average* and the least common is *full ratchet*.

## Full ratchet

Full ratchet is easiest to explain by giving an example. Let's say a shareholder bought 100,000 preference shares at a price of  $\in$  1. Hence the value of his or her stock is  $\in$  100K. During the next round the share price has dramatically dropped from  $\in$  1 to  $\in$  0.50. In that case the shareholder has the right to *convert* his or her preference shares into ordinary shares at the same ratio as if they had invested during this new round. So, would they have invested  $\in$  100K in *this* round against 50 cents, they would have received not 100,000 shares but 200,000 shares. Hence, at full ratchet, the investor may convert his or her 100,000 preference shares into 200,000 ordinary shares.



- C

Figure 49. Example – Full ratchet

This effectively means that the founders carry the full weight of the dilution due to the down round.

## Broad-based weighted average

You could however argue that the initial valuation was clearly too high and therefore the dilution should not completely be at the cost of the founders. Which is why the Broad-based weighted average is a more common practice. To determine the conversion ratio from preference to ordinary shares, the following formula is used:

$$CR = \frac{P_1 S_2 + P_1 S_2}{P_1 S_1 + P_2 S_2}$$

An explanation:

- *CR* is the thing we want to find out. That is: conversion ratio of the *preference* shares to *ordinary shares* of investor A.
- P1 is the share price during round one when investor A invested.
- *P2* is the *lower* share price during this *new* round 2.
- *S1* is the total number of outstanding shares after round one was closed. And finally,
- S2 is the number of newly issued shares in round 2.

## Example

Let's assume we start with a founders stock of 900K shares.

Investor A invests  $\in$  200K at  $\in$  2 per share so they get 100K shares, which brings the total number of shares to 1M.

At a later moment in time, investor B invests  $\in$  500K at  $\in$  1 per share, so they get 500K shares.

Given that the price during round 1 was  $\notin$  2 and in round 2 it has dropped to  $\notin$  1 we have a down round and the anti-dilution protection of investor A kicks in.

Investor A can now choose to convert his or her shares to ordinary shares. We use the above formula for the calculation:

- P1 is the share price during round 1, which is € 2;
- P2 is the share price during the 2nd round, which is € 1;
- S1 is the total number of shares at the start of round 2, which is 1 million and
- S2 is the number of shares issued in this second round, which is 500K.

#### Filling in these numbers we get:



Figure 50. Example – Broad-based weighted average

So the conversion ratio at which investor A can convert his or her shares into common share is 1.2, meaning they can convert their 100,000 preference shares into 120,000 ordinary shares.

#### Narrow-based weighted average

We've also mentioned the *narrow*-based method. In this case S1 is determined by the *preference* shares *only* instead of *all* shares. In the above example this would be 100,000 shares (the preferred stock of investor A) instead of the 1 million total shares. In that case the calculation in comparison looks like this:



Figure 51. Example – Narrow-based weighted average

This would mean that the conversion ratio would not be 1.2 but 1.7.

Unfortunately, it does not end there. As soon as you issue extra shares in this round 2 investment to investor A, then effectively the pre-money value goes up as there are more shares issued at the round 2 share price. To this investor 2 will not agree, so to fix this, the share price drops even further...meaning more conversion for investor A, resulting in yet another drop in share price, and so on and so forth.

This might be a bit confusing and requires a proper example.

#### Example

	#shares	%		€
Founder 1	300,000	40%	€	-
Founder 2	300,000	40%	€	-
TNO	150,000	20%	€	-
Tatal	750.000	1000/	c	
Iotal	750,000	100%	ŧ	-
Share price:			€	-

Figure 52. Example - effect of full ratchet anti-dilution protection

Let's assume this initial situation:

The two founders each have 300,000 shares, TNO has 150,000 shares totalling up to 750,000 shares.

The first investment of  ${\bf \in}$  400K by investor A takes place at a pre-money of  ${\bf \in}$  1.2M, which results in this:

	#shares	%		€
Founder 1	300,000	30%	€	480,000
Founder 2	300,000	30%	€	480,000
TNO	150,000	15%	€	240,000
Investor A	250,000	25%	€	400,000

Figure 53. Example - effect of full ratchet anti-dilution protection

Effectively the investor receives 250K shares for their € 400K investment.

Given that the total amount of 1 million outstanding shares and the postmoney valuation is  $\in$  1.6M, you can deduce that the share price is  $\in$  1.60. The investor also negotiates a *full ratchet* anti-dilution protection. Again, this is quite uncommon, but it makes this example much easier to comprehend.

One year later, investor B steps in. However, as you can expect in this example, the company did not do so well. The initial valuation was also too high. Hence investor B also wants to invest  $\in$  400K *but* at a pre-money of  $\in$  800K instead of the  $\in$  1.6M post-money of the last round. This means that the share price in the first round drops from  $\in$  1.60 to 80 cents. In short: the price is halved. Without any anti-dilution protection, the end result would look like this:

	#shares	%		€
Founder 1	300,000	20%	€	240,000
Founder 2	300,000	20%	€	240,000
TNO	150,000	10%	€	120,000
Investor A	250,000	17%	€	200,000
Investor B	500,000	33%	€	400,000
Total	1.500.000	100%	£	1.200.000
Share price:	1,000,000	100/0	€	0.80

Figure 54. Example - effect of full ratchet anti-dilution protection

Basically the same as the former cap table, but 500,000 shares are issued at a price of  $\in$  0.80 per share, so  $\in$  400K in total. Post-money valuation is then  $\notin$  1.2M, and total dilution of all former shareholders is 33%.

*However*, investor A has a *full ratchet anti-dilution protection*. Therefore, investor A is fully compensated and because the share price is halved, their total number of shares therefore doubles, which looks like this:

#shares       %         Founder 1       300,000       17%       €       240,00         Founder 2       300,000       17%       €       240,00         TNO       150,000       9%       €       120,000         Investor A       500,000       29%       €       400,000         Investor B       500,000       29%       €       400,000         Total       1,750,000       100%       €       1,400,000         Share price:        0.8       €       0.8					
Founder 1 $300,000$ $17\%$ € $240,000$ Founder 2 $300,000$ $17\%$ € $240,000$ TNO $150,000$ $9\%$ € $120,000$ Investor A <b>500,000 29%</b> € <b>400,000</b> Investor B $500,000$ $29\%$ € $400,000$ Total $1,750,000$ $100\%$ € $1,400,000$ Share price: $€$ $0.8$		#shares	%		€
Founder 2 $300,000$ $17\%$ € $240,000$ TNO       150,000       9%       €       120,000         Investor A       500,000       29%       €       400,000         Investor B       500,000       29%       €       400,000         Total       1,750,000       100%       €       1,400,000         Share price:       €       0,8	Founder 1	300,000	17%	€	240,000
TNO       150,000       9% €       120,000         Investor A       500,000       29% €       400,000         Investor B       500,000       29% €       400,000         Total       1,750,000       100% €       1,400,000         Share price:       €       0,8	Founder 2	300,000	17%	€	240,000
Investor A         500,000         29%         €         400,00           Investor B         500,000         29%         €         400,00           Total         1,750,000         100%         €         1,400,00           Share price:         €         0.8	TNO	150,000	9%	€	120,000
Investor B         500,000         29%         €         400,00           Total         1,750,000         100%         €         1,400,00           Share price:         €         0.8	Investor A	500,000	29%	€	400,000
Total 1,750,000 100% € 1,400,00 Share price: € 0.8	Investor B	500,000	29%	€	400,000
Share price: € 0.8	Total	1,750,000	100%	€	1,400,000
	Share price:			€	0.80

#### Figure 55. Example - effect of full ratchet anti-dilution protection

Note that the dilution due to this protection has increased from 33% to 43% for the founders.

And because we didn't change the share price, the issuance of an additional 250K shares at 80 cents per share before the investment, increases the pre-money valuation from  $\notin$  800K to  $\notin$  1M.

Investor B however does not agree to this. So we need to keep dropping the share price and keep giving extra shares to investor A until we reach the point that the pre-money is  $\in$  800K *and* investor A is fully compensated. Now because both investor 1 and 2 invest the same amount effectively at the *same* share price, they have to end up with the *same* amount of shares, hence its fairly easy to calculate the end result in this full ratchet example:

	#shares	%		€	
Founder 1	300,000	13%	€	240,000	40% → 17% = 67% dilutio
ounder 2	300,000	13%	€	240,000	
TNO	150,000	7%	€	120,000	
<b>Investor A</b> Investor B	<b>750,000</b> 750,000	<b>33%</b> 33%	€ €	<b>400,000</b> 400,000	← Final conv. ratio: 3
Total Share price:	2,250,000	100%	€ €	1,200,000 0.53	

Figure 56. Example - effect of full ratchet anti-dilution protection

Investor 1 gets 500,000 extra shares and investor 2 gets 750,000 shares both at a share price of 53 cents.

What is surprising, is that the final conversion ratio is 3. In other words, investor A converted their 250K preference shares into 750K ordinary shares. This has a devastating effect on the founders share percentage, which is more than halved.

This outcome is so bad that most likely investor B will refrain from investing because the founders are left with a only a tiny share in the company. Which again shows why full ratchet is not the wisest of choices.

## Comparison broad- and narrow-based weighted average

So what would the final conversion ratios be in case of a *narrow-* and *broad-*based weighted average?

Narrow-based would look like this:

	#shares	%		€
Founder 1	300,000	17%	€	199,258
Founder 2	300,000	17%	€	199,258
TNO	150,000	8%	€	99,629
Investor A	454 469	25%	£	201 955
		<b>Z J /</b> U	т.	201.022
Investor B	602,234	33%	€	400,000

Figure 57. Effect of narrow-based weighted average

Here the founders dilute 43% of their shares to 17%, which still might not be an acceptable outcome.

And finally, *broad*-based looks like this:

	#shares	%		€
Founder 1	300,000	19%	€	227,909
Founder 2	300,000	19%	€	227,909
TNO	150,000	9%	€	113,954
Investor A	303,054	19%	€	230,228
Investor B	526,527	33%	€	400,000
Total	1,579,581	100%	€	1,200,000
Share price:			€	0.76

Figure 58. Effect of broad-based weighted average

Here the founders dilute 37%, which still hurts, but is an acceptable outcome given the circumstances.

One final remark. Because these conversions can be complex to get properly covered in a contract, often new investors say that they invest *after* all conversions have taken place. Similar to the explanation in the chapter on convertible loans, the investor invests on a *fully diluted basis*. The investment actually takes place in two steps:

- *First*, all conversions take place (so also, for example convertible loans);
- *second*, the investment takes place at the agreed upon pre-money price.

Enough with the numbers. The next chapter covers some negotiating strategies you can follow when a term sheet is issued.

## Additional reading material

Venture Capital Deal Terms – Harm de Vries et al.



# 6. First steps in negotiating a term sheet

So you have sent your slide deck, had numerous talks with myriad investors and finally you've landed and investor willing to invest. You are expecting a term sheet.. Now what?

In this chapter, we will guide you through the essential steps of dealing with an investor and handling your initial term sheet. We will not delve into advanced negotiation tactics; there are loads of books that cover that topic. Instead, we will focus on the key actions you need to take once you have secured an investor.

But how do you prepare for those actions?.

Before you even set out to search for investor, decide *what* it is that you and your team find important. Is that, for example, a high pre-money? Or do you want matters concerning control or governance arranged? Be very clear about your own expectations.

If you received a term sheet: *celebrate* (albeit moderately). Receiving your first term sheet is a *big* thing and even though it does not guarantee an investment, it *is* an important milestone to reach. Before receiving a term sheet you simply do not know whether there is any *real* interest from investors (yes they all say it's interesting, which means little). *After* receiving your term sheet, you have solid *proof* that at least one investor is seriously considering to put money in your venture. It also allows you to employ the 'fear of missing out' factor towards other investors. So be sure to pop some bubbles once you have your first term sheet in hand.

We would like to remind you that you need to keep the person and the process separated. Negotiations are processes that involve people. You will never negotiate with 'a company' or 'an investor' or 'the government', you will negotiate with John, Mary or Tim. And in case of term sheets you will potentially enter into a long lasting and very intense relationship with that person. So although you should be strict and hard in the process, you should be flexible and understanding towards the person in front of you. On the right you see the 6 steps you need to go through. Basically, this is more of a flow chart. A more schematic overview of these steps would look like this:



Figure 59. Overview of termsheet negotiation process

Let's take a look at each of the steps.

#### Step 1: manage expectations

By the time you receive your first term sheet, you probably also received a bundle of friendly rejections. "Too early", "currently not the right fit" or "we would like to see more proof of concept before we proceed". Basically they're saying no, *but* they want to keep the door open as things might change in the future.

So, you do the same. Regardless of the quality of term sheet, you always keep it friendly and professional, managing expectations right from the start: "Thank you for taking the time to send us your term sheet. It will take us some time to digest, so you can expect a response from us within five days". You can substitute the "five days" with anything that feels comfortable to you, but don't let weeks pass. Should you feel you need more time after you have set your own deadline: again communicate in time. "We planned for external advice on your term sheet, but the advisor is indisposed, so we expect we will need 3 more days before we will respond to your proposal"

Good, let's assume you (think you) received a crappy term sheet. This brings us to step 2:

## Step 2: do your homework

#### 2a check assumptions

First off, you *assume* it's a crappy term sheet. Could it be that you don't fully understand certain things? And you *assume* that certain terms strongly deviate from what you think is the norm. List all those things, both the things that are unclear and the things that you think deviate from what is "normal".

#### Step 2b: gather information

My uncle used to say: luck is something you actively create. What it means is: do your own homework, so you are prepared to act when required. In this case you want to stay in control of the process by understanding it. You can start by reading the former chapter on deal terms.

Moreover, look for similar deals in e.g. Dealroom or Pitchbook, google the terms, try to get an understanding of what it means and try to get an understanding of what is "normal" or "common". But keep in mind that every deal is unique and will not have all the details available online. At best, this will give you a ballpark figure. Still, it's something you can fall back on or refer to during your negotiations.

Once you have properly done your homework, you will still be left with a lot of assumptions and questions you wish to verify, which brings you to:

#### Step 2c: seek advice

Get an expert on board who can help you with your questions and assumptions. Experts usually cost money or have little time (or both). Use step 3 to prepare for your meeting with the expert, so you get proper bang for your buck.

With the information and advice gathered, you should have a clearer understanding of what the term sheet entails and have a ballpark idea of the "norm" for similar deals. With that info you can start testing alternatives.

#### Step 2d: test alternatives

As you now know what to expect and have a clearer idea of what the norm is, you can formulate your "best alternative to a negotiated agreement" (also knowns as your BATNA). In other words: what are your options? Are there other interested investors? Do you have more term sheets? Are there any grants available? Can you bootstrap for a while? Based on these options, you can formulate your "rock bottom" terms. You will need those during the negotiations as they will be tested. To be clear, if your "rock bottom" is a pre-money valuation of  $\in$  3M for example, then you say *no* to a pre-money valuation of  $\notin$  2.9M, even if this means hard bootstrapping and perhaps even lay-offs. So really, really think this through. Keep in mind that terms are never standalone; if there are other, very favourable, terms to compensate for the less favourable terms, you may want to agree to specific terms below your rock bottom.

When you have prepared this for yourself, you will *also* try to figure out what the BATNA is for the VC! They might agree to a higher pre-money, but they also have their limits. In a seed stage, for example, it is very unlikely that they will agree to less than 10% equity (post-closing). Comparing the two BATNAs will give you a better insight in the negotiations.

#### Step 3: ask questions

Once you have done your homework and gained some understanding of the presented term sheet, you go back to the VC who sent you the term sheet. You then start asking questions. No terms from your side, only questions. And specifically in three areas:

- You ask the VC to explain the parts that you simply (still) do not understand or are unclear.
- You verify your assumptions and/or interpretations of the term sheet with the VC.
- Once that is cleared up, only then do you start negotiating the terms. You do that in the "offensive": again by asking questions based on your homework,



#### Figure 60. Initiate questions

When you have a full list of all the things that you or an advisor think are either wrong, deviating from *your* norm or you simply want to prod: translate these matters into questions.

#### Some examples

A simple open question:

"Can you explain to us how you arrived at the pre-money valuation?"

Or a more offensive and prepared question:

"The term sheet mentions a participating liq. pref. We have gathered information from different sources and all those sources tell us the same thing: participating liq. prefs are highly uncommon in a seed phase. Moreover, they set an unwanted precedent for future investments. Can you explain to us why you deviate from the norm and how you justify a participating liq. pref at the early stage our company is in?". Or hinting at options for them to think of as compensation, e.g.:

"What do you offer on the plus side to compensate for such an uncommon term"?

But also questions on the future relation:

"How often would you like us to report?"

"What do we need to report about?"

"What else can you bring to the table besides money?"

"What would the first month with you on board look like?"

"Can we speak with one or two startups you have invested in?"

#### Silence as a bargaining tool

One piece of advice: when you have asked a question: <u>shut up</u> and wait for an answer. When people are in conversation, they dislike silence and have an urge to fill it. This psychological phenomenon is often used as a negotiation tactic to get more information out of the other party. So, if you ask a question, and the other party remains silent (for a while), *do not start to answer the question for them*. This might be uncomfortable for you, but really: keep your mouth shut.

But what if they answer the question with a question: "What do *you* think should be the valuation?" Deflect and reply: "Before we can answer that, we first need to understand what you have offered in similar deals concluded in the past."

You can pose these questions over email, but preferably, have these meetings face to face. You need to build a relationship, which starts here. Moreover, a written answer probably does not cover your entire question, and may lead to new questions. Most importantly, the investor will be less forthcoming in writing then they would be in a face-to-face discussion.

This is the "offensive" part of the negotiations: you force the other party to explain their motives and defend their position, while you give only a little away of your own motives. The "defensive" part starts once you have made up your mind.

#### Step 4: decide

You've done your homework. You've checked your assumptions. You asked your questions. Now there are three options available.

- 1. You stop the process. It's clear or obvious that you will never match with this investor and you pull the plug instead of wasting resources on continuing the relationship. Usually this is an unlikely outcome as most startups don't have the luxury of this choice, but it IS a possibility you should consider at this moment.
- 2. You agree with the terms of the investor.
- 3. You make a counteroffer.

#### Step 5: make a counteroffer

In this step you dictate *your* terms in a counter offer. We advise you to do this in writing so its traceable and the position of both sides is now clearly stated.

How you approach this obviously depends a lot on the answers you received in step 3. So it might be wise to have some time between these steps, allowing you to properly formulate your terms, based on the answers they gave. It goes without saying that you need to motivate your terms. If you want a higher pre-money, they apparently did not provide a satisfactory answer when you questioned this. To this you can refer, but it's also good to present similar investment deals to prove or at least support your point.

Two weeks after you send the e-mail with your terms, you plan a new meeting.

#### Step 6: track progress

Negotiating term sheets is an iterative process. Answers will lead to new questions, discussed terms will lead to new terms and so forth. For this reason it's also important to ask the investor what the process will look like *after* you signed the term sheet. What is their expected period for a due diligence, Investor committee approval, drafting and signing legal documentation and of course: transfer the money.



Monitoring and tracking this process is therefore as vital as communicating during this phase. What is important is that you realise that *you* are in the lead, *you* manage the process, *you* set deadlines for answers, meetings, etc. And because this is an iterative process, you might need to go through steps 1 to 5 several times until you can finalise the negotiations on the term sheet, either with a positive or negative outcome.

## **Key learnings**

Let me summarize the key learnings:

- At all times *you* are in the lead, *you* manage expectations and you track the progress.
- Write down your expectations and what is important *before* you start meeting with investors.
- Realise that everything you have not verified is an assumption, not a fact
- Asking questions gives you information and insight, dictating terms gives the other party information and insight.
- Both you and the VC have BATNAs, try to figure them out and look for the overlap
- Don't forget about the *other* things the VC brings to the table, you want 'money with brains' as this is a long term relationship
- Last but not least: at all times consider you are starting a relationship between human beings. Be tough on the content of the talks but flexible about and in the relationship. It will pay off.

## Additional reading material

Never split the difference – Chris Voss

# 7. Employee incentive plan

Employees are *key* to your company, especially in the early stages and especially if one of them is the leading expert on the technology you wish to commercialize. So how do you make sure they stay with your company? The best way to get your employees committed to the company is by giving them the outlook that when the company grows (in value) their potential income will grow with it. Such a plan is called an 'employee incentive plan' or in short EIP. Another term you will often encounter is the 'ESOP' or Employee Stock Option Plan. The name implies that options are involved, but in the Netherlands it is currently more standard to use SARs (stock appreciation rights), which we will cover in this chapter. Another often used scheme in the Netherlands is the STAK

## **STAK**

If you choose to issue shares to your employees directly, then this could lead to a shareholders' meeting that would look like this:



Figure 61. Shareholders situation without STAK

To prevent this you can create a STAK as a representative of your shareholding personnel.

STAK stands for "Stichting Administratiekantoor" or "foundation for administration office". The STAK is a direct shareholder of the company and it represents all its members, including the employees. All its members receive one share certificate for each share they have earned. So 10 certificates represent 10 shares owned in the company. For this reason we also speak of *certified shares*. It is also possible that there are different types of shares with different types of rights held by the STAK; each certificate is directly linked to such a share. So a STAK could have both common and series A preference shares and the respective members of the STAK would then own common certificates and series A preference certificates.

A typical STAK represents 10-15% of the total shares of the company, and it keeps the cap-table of your company clean. In the picture below we have created a STAK with 15% of the shares, 5% of which is issued to employees in certificates and 10% is in reserve for future emission. The shareholders' meeting would look like this:



Figure 62. Shareholders situation with STAK

This results in a much cleaner cap-table. And even though it's indirectly, the employees *do* hold actual shares in the company, which greatly benefits their loyalty.

Another advantage is: transparent participation. Because a certificate is directly linked to a share.

#### The disadvantages of the STAK are:

- The administration involved. A STAK is a legal entity and thus requires its own management, reporting, shareholder meetings etc. This is quite a hassle.
- The STAK is a shareholder that has the right to be present at shareholder meetings. Someone from management is often the director of the STAK as well.

## SAR

Another method to keep your employees bound to the company is to issue SARs (*Stock Appreciation Rights*).

A SAR represents the economic right to one common share. If, for example, the share value is  $\notin$  10 when the company is sold, then each SAR holder gets  $\notin$  10 per SAR they own.

There are three main reasons to do this:

- no extra shareholder at the table;
- no administrative hassle of an extra office;
- more financial versatility possible.

Let's go through that list.

#### No extra shareholder at the table

In an sense, a SAR is a contract that promises financial benefit in the future, usually with an exit event of the company. There is no intermediate entity like a STAK required, the SARs are directly issued to the employees by management. And because it's only a financial right, it does not represent ownership of or control over the company. A cap table with a STAK would look like this:

Round:	Incorporation	Series A		
Share Type:	Ordinary	Preference	Total	
Shareholders			Shares	%Ownership
TNO	20,000	-	20,000	16%
Founder 1	35,000	-	35,000	28%
Founder 2	35,000	-	35,000	28%
STAK	10,000	-	10,000	8%
Investor	-	25,000	25,000	20%
TOTAL	100,000	25,000	125,000	100%

#### Figure 63. Cap table with STAK

If we then replace the STAK with a SAR incentive plan, we need to split up this cap table into one about control, where the SAR is *not* taken into account and one about economic rights, where the SAR *is* taken into account.

Unlike the STAK, introducing SARs to the company means you need to split up the cap table into control and economic rights. As you can see in the example cap table, with a STAK holding 7% of the shares, these 7% represent both control and economic rights, with a SAR the control rights remain fully with the shareholders, while the economic rights are divided over the shareholders and the SAR holders. Which results in this:

	, c	.011(10)		
Round:	Incorporation	Series A		
Share Type:	Ordinary	Preference	Total	
Shareholders			Shares	%Ownership
TNO	20,000	-	20,000	16%
Founder 1	40,000	-	40,000	32%
Founder 2	40,000	-	40,000	32%
SAR	-	-	-	0%
Investor	-	25,000	25,000	20%
TOTAL	100,000	25,000	125,000	100%

Control

	EC	onomic		
Round:	Incorporation	Series A		
Share Type:	Ordinary	Preference	Total	
Shareholders			Shares	%Ownership
TNO	20,000	-	20,000	15%
Founder 1	40,000	-	40,000	30%
Founder 2	40,000	-	40,000	30%
SAR	10,000	-	10,000	7%
Investor	-	25,000	25,000	19%
TOTAL	110,000	25,000	135,000	100%

#### Figure 64. Cap table with SAR

Note that these two cap tables "control" and "economic" are usually combined in one cap table overview, where the control part is called "%holding" and the economic part is called "% fully diluted".

#### No administrative hassle of an extra office

STAK	SAR	

Figure 65. SAR is contract only, no additional legal entity is required

Because the SAR is solely a contract, there is no administrative hassle of a complete office with shareholders. However, the SARs allow the introduction of versatility, which can lead to complex cap tables and thus administrative hassle.

## More financial versatility possible

So what versatility are we talking about? There are no laws on SARs, so you can basically create your own rules on how to deal with SARs, you could even introduce clauses that negate the financial right under certain circumstances. If you were to do that, you are missing the point of this chapter.

In theory: 'anything goes' with SARs, which makes it impossible to cover all the possibilities of a SAR. We will however highlight two common practices: hurdle price and cap.

#### Hurdle price

Hurdle price is the amount that is deducted from the value of the share that the SAR represents.

For example: if the hurdle price is  $\leq 10$  and the value of the share it represents is  $\leq 15$  then the effective value of the SAR is  $\leq 15 - \leq 10 = \leq 5$ .

## Сар

Cap is the maximum value a SAR can represent. If the cap is set to  $\notin$  13 and the value of the share it represents is  $\notin$  15 or even higher, then the SAR value would be capped to  $\notin$  13.

Should both examples apply then the SAR would only represent  $\in$  3.

## Example hurdle price and cap

Why would you do this? The obvious answer is that it limits the cash out to the SAR holders on exit of the company, leaving more returns to the other shareholders. However there is a certain subtlety to this:



Figure 66. Cap and hurdle price - timeline

Let's have a look at how this would work when building a company.

- When you started the company, the value of the company was effectively € 0 or close to that.
- You build intrinsic value in the company and you only dilute whenever you attract external value (=equity funding). Let's say after the first investment your share price is set to € 20. Should you initiates SARs, they too would be valued at € 20.
- If an employee starts working at your company just after a funding round in which the price per share is valued at € 20. When you start giving out these SARs, they would represent € 20 in value even though that value was not created by that employee! You might argue that it's fair to introduce a hurdle price at the last valuation price before the employee started working for you. Which is € 20.

- Any value created after the employee starts working can (more or less) directly be attributed to that employee, and thus it's fair that they share in the economic benefits of that created value.
- Also when employees leave, you can introduce a cap at the next investing round, as you can argue they contributed to that established value, but not after. This could be an incentive for the employee to stay on.

So as soon as the next investment round takes place you cap that share value.

• When it's finally time to exit and you pay out all the SARs, the employees get the price or value per SAR that they actually contributed to.

An additional advantage is that the hurdle price also prevents the actual shares decreasing in value. To illustrate this, take this extreme example:



Figure 67. Why a hurdle price?

Your company is valued at  $\in$  15M with a total of 1M shares. So the share value is  $\in$  15 per share.

Now you issue an equal number of SARs, that is: 1 million. Then the total amount of the economic shares will be  $\notin$  2 million. The company value however remains at  $\notin$  15M, so the price per share will halve to  $\notin$  7.50.

However, if you set the hurdle price to  $\in$  15 for these SARs then this has no impact on the current share value.

### **Options**

Options are the future right to buy and sell shares in the company at a fixed price. They provide a good alternative to the STAK. Nowadays, this is a less common practice due to tax implications. However when new tax laws are introduced it might become interesting again.

Options are basically in between STAK and SAR. Like SAR they are a right which, in this case, represents the right to buy shares at a certain fixed price. Usually there is a period attached to this right after which you can execute this right. For example you may exercise these options after 5 years of employment. Let's take another example to highlight this:

		22		
	0	0	2	3
Share price	€0	€ 20	€ 20	€30
Option price	€ 0	€ 20	€ 20	€ 20
Option value	€ 0	€ 0	€0	€10

Figure 68. Options

- Like with SARs we start at 0 value.
- After your first investment, your share value is again € 20.
- 2 You then implement your 'employee stock option plan' (ESOP) in which employees gain the right to buy shares at the last valuation: € 20.
- After a while a new investment round takes place and the value of your shares has increased to € 30. The value of the options at that point in time are € 10. This value can change with the share price of your company. The price at which your employees can buy the options is the 'exercise price'.

Finally the number of shares you may buy after some time are your 'vested options'. Which brings us to the last topics: vesting and vesting cliff.

## Vesting and vesting cliff

So what if someone starts working, receives STAK certificates or SARs or options or direct shares and leaves the company after 3 months, are they allowed to keep that economic right? Such a case is usually covered by a vesting scheme, in this particular example it would be covered by a vesting cliff.

#### Vesting scheme

A vesting scheme is a scheme that tells your employees when and how many shares they get in return for their work. This could be as simple as "10 SARs per month up to a maximum of 500 SARs". The employee would in that case "vest 10 SARs per month".

## Vesting cliff

A vesting cliff is the minimal period the employee has to remain at the company to keep any SARs at all. Typically this is one year. Should an employee leave after three months, then, they have not yet reached the cliff period so they can't keep the 30 vested SARs.

The same applies to options or STAK certificates.

Let's look at an example with options. You can easily replace these with STAK certificates or SARs.

Every new employee gets the option right to buy up to 960 shares vested per quarter over a period of 4 years with a vesting cliff of one year.

This means 60 shares per quarter. Let's have a look at what that looks like.



#### Figure 69. Vesting and vesting cliff

The employee starts with 0 options, after 3 months they have gained the right to buy 60 shares, after 6 months 120, etc. Should they however leave the company within one year, they must relinquish those rights. Only after one year (the cliff period) do they actually gain the right to exercise those rights.

## **Fiscal implications**

Whatever form of 'employee incentive plan (EIP)' you choose, if you make money you will have to pay taxes. How much and when differs from EIP to EIP. We have to refrain from giving advice on this matter because it's often a complex and context-sensitive topic which is also subject to changes. We strongly advise to always consult a good tax specialist to get a good grasp on the financial consequences of your choice.

## Conclusion

Regardless of the construction you use, in our opinion, and with us many investors, an employee incentive plan is vital for a high-tech startup. You don't have to have everything in place from the start, but as soon as you start attracting new employees, this becomes an essential part of your HR strategy.

## Additional reading material

Beyond STAK or ESOP there are other ways to incentivise your employees, here a nice overview:

https://www.achievers.com/blog/employee-incentive-programs/

# 8. Supply chain management

## Introduction

Supply Chain Management, SCM in short, is vital for your company, but a beast to handle correctly. Treating this beast properly can save you from many, very costly, pitfalls. And in the end, the supply chain is your lifeline, because no supply = no product = no income.

In addition, it directly influences the cost of your product and with that your business. Set up properly, it can be used to mitigate risks, can give you access to state-of-the-art technology, can speed up your product development and your time to market tremendously. But if you do not get it right, the opposite applies.



In order to write this chapter, we went outside of TNO and found two experts in the field: Susanne Vos, Director Supply Chain at ASML and Daan Kersten, Co-founder & CEO at Include Industries and supervisory board member at the TNO spin-off LeydenJar and other companies. Daan related the story of one of his previous startups: "Additive Industries". His story covers most aspects we want to touch upon in this chapter. And given that the methodology that Additive Industries followed was based on that of ASML, Susanne helped to fill in the gaps and added specific learnings.

The story consists of five parts:

- 1. strategy
- 2. finding the right supplier
- 3. relationship management
- 4. roles in the value chain
- 5. risk management

Daan and his co-founder Jonas Wintermans came up with the idea to create the first industrial 3D METAL printer in 2012. The first thing they did was validate their idea in the market. At that time there were 3D metal printing machines, but those were designed for prototyping only. So, theoretically, you could argue that the technology was at TRL 9 already.

The market validation gave the team answers to three main questions:

- Is there a market? In other words: is there a tangible, quantifiable pain that you can identify and is it big enough to merit a startup company?
- What does your solution look like? When building such a machine, what job does it need to do? What should it look like? And how does it fit in the current industry? Preferably you build something as 'plug and play' as possible *for your target market* while still aiming for that *minimal viable product* (MVP).
- What is the ideal go-to market strategy? If you know your market well enough, you know where to start and with what. This topic is covered in chapter 1. Market segmentation.

During the validation phase they extended their team with CTO Mark Vaes from TNO.

With the gathered information, the team sat down and drafted their first design of the machine. After a few iterations, they arrived at a formulated concept. This meant that the actual TRL-level they were at was 2.

## 1. Strategy is key

After Daan and his team formulated their concept, they started gathering information to draft a business plan. The concept of the business plan was simple: "Where do we want to be 5 years from now and what do we need to do to get there?".



Figure 70. Where do we want to be 5 years from now

This gave them an actionable plan expressed in time and money. Relatively abstract in the future and very detailed close to the present. With this business plan they started attracting funds in the form of loans, equity and subsidies. They applied a strict rule: the goal of the investor and of the company must be aligned. For example, subsidies that would require diversion from the plan were a no-go.

At this point they took the concept apart to see what their core technology was, resulting in knowing what they themselves needed to develop and what they could outsource to other parties.



Figure 71. Focus on core technology, outsource the rest

00

Again an important rule was applied: only do the things that nobody else can, are crucial for your competitive position, or decreases your risk. Outsource the rest.

- Limited Time
- Limited Money
- Huge Risk

SO YOU → OUTSOURCE!

## Why?

High-Tech startups have the following three issues: limited time, limited money and huge risks. Doing stuff that is already done by someone else will cost extra time, extra money and adds risk, simply because you're doing it for the first time. Outsourcing will cost you much less time, will be much more efficient and believe it or not: will save you money as you can leverage the learning curve and purchasing volume from others.

And here's where the supply chain comes into play. You need reliable suppliers who are capable of co-developing with you *and* who are able and willing to grow with you. And this is where things get interesting. Below, please find one of the models that Daan used at Include Industries.

#### Value Chain Model (example)



Figure 72. Value chain model (example)

We will use this image to explain some things along the way.



## 2. Finding the right suppliers

After they took the entire concept and requirements apart, they applied the top-X approach, better known as the 80/20 rule. 20% of the parts determine 80% of the product, so focus on that 20%, the rest either comes later, is outsourced or can be purchased directly.



#### Figure 73. Top X approach or 80/20 rule

After the Additive Industries team identified everything they wanted to outsource, they did NOT start to look for parts and suppliers. Instead, they started creating supplier profiles (compare this to job profiles if you are hiring) of the ideal supplier that could deliver them the functional modules they needed.

	-	

Bedrijfsprofiel	Contactoegey	ens	
Bedrijfsnaam	Voomaam	ens	
Vestigingsadres	Achternaam		
Vestiging postcode:	Functie:		
Vestiging plaats:	Afdelina		
Land:	Telefoon:		NN.
Postbus:	Direct doorkies	nummer:	
Postbus postcode :	Faxnummer:		
Postbus plaats:	Mobiel:		
Telefoon:	Email-adres:		
Faxnummer: ÿ	Aanhef : De he	er / Mevrouw	
Internetadres: www.			
Mogen we uw bedrijfsnaam g	ebruiken als referentie ? Ja / Ne	e	
Beknopt bedrijfsprofiel (geef h	ieronder een korte omschrijving v	van uw bedrijf):	L
			L
Kernactiviteiten:			L
Afzetmarkten:			L
Product- / projectgerelate	erde gegevens:		L
Aanleiding van uitbested	ing:		
Nieuw product	Benchmark	Priisdruk	
Nieuw project	Strategische uitbesteding	Wegvallen leverancier	
Second source	Capaciteitsprobleem	Kwaliteitsprobleem	
Toelichting: Graag zouden we wi toeleverancier, dit is relevant voo	llen weten wat de aanleiding is voor l r het soort relatie wat u aangaat (eer	het zoeken van een nieuwe malig, strategisch).	L
Verwachte omvang van d	le opdracht:		L
Seriegrootte			
Enkelstuks	100 - 250	2500 - 5000	
<10	250 - 500	5000 - 10000	
10 - 50	500 - 1000	> 10000	
50 - 100	1000 - 2500		
(Graag een 'x' zetten voor de	optimale seriegrootte.)		L
Toelichting: Aangezien toelevera	nciers bewuste keuzes maken voor e	en inrichting voor kleine series of	
juist hele grote, is het belangrijk o uitbesteden.	om een indicatie te hebben van de on	nvang van het werk dat u wilt	
			1
<ul> <li>Geen vervolg, de opdra</li> </ul>	it uitbreiding van deze opdracht? icht is eenmalig		L
Toelichting: Als u weet welk meerdere bewerkingen sele	e bewerkingen noodzakelijk zijn, kun cteren.	t u deze hier weergeven. U kunt o	ok

#### Figure 74. Supplier profiles

Based on these supplier profiles, they selected three 1st Tier system suppliers per module and asked *them* to pitch for the team. This was (and still is) rather uncommon. However, it shows a serious level of commitment, professionality and out-of-the-box thinking, good factors to attract potential partners. In the end they selected 15 suppliers for their collaboration. Subsequently, they discussed with each supplier what needed to be developed and built by that supplier.

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#### 1st, 2nd, 3rd tier suppliers?

Let's grab that value chain picture again. At the bottom you can see your 1st tier supplier, or direct suppliers. 2nd tier suppliers are the suppliers of your suppliers and 3rd tier the suppliers of the suppliers of your suppliers.

What does such a supplier profile look like? You might have heard of QLTC: **q**uality, **l**ogistics, **t**echnology and **c**ost as the main factors to profile your suppliers. We think this misses at least two important qualifiers: sustainability and organizational fit. Our QLTCSO in detail:

- Quality and ICT requirements: outlining the quality standards expected from suppliers (for example implemented ISO standards) but also the ICT tools they use for digital compatibility (think of CAD/CAM exchanges).
- **Logistics and references**: describing logistical capabilities and whether there are specific companies the supplier should or should not work with, resulting in a description of second and third tier suppliers.
- **Technology**: covering various manufacturing competences, processing techniques and the types of materials a supplier should be able to deal with. Examples include moulding or forming techniques and materials ranging from woods to plastics to a wide range of metals and alloys. But you should also look at their capability to innovate, the in-house knowledge, their willingness to collaborate and their experience with similar types of equipment.
- **Costs:** probably one of the first things you think of, and although it *is* important, don't be penny wise and pound foolish. This is not simply limited to cost of goods, it covers the total cost involved in outsourcing. The best overall cost is found in a great match and purchasing volume of the supplier you can piggyback on.
- **Sustainability**: a vital aspect these days: how sustainable are your suppliers (and their suppliers).
- **Organizational fit**: detailing the desired characteristics of the supplier, such as size, turnover, number of employees, management & organization, business model fit and preferred region. This should correspond with the estimated order size you expect to demand in the future.

Think these requirements through very carefully. For Additive Industries it was vital that all suppliers were in close proximity, making it easy for them to come over and help fix stuff or for the weekly or monthly meetings. The required ISOs are also vital, as some things simply *have* to comply to these. If you have to do this *after* the first product is ready, you might be faced with a partial or even complete redesign. But also the purchase volume matters, as you do not want to become the source of more than 25% of the suppliers turnover. That may lead to an unhealthy dependence and added risk for your company. On the other hand, you do want to be significant enough to that company, which is ideally no less than 5%, otherwise you simply don't get the attention and, more importantly, the priority you so desperately need. For an early stage hardware startup your sweet spot lies in the 5 to 10% area. ASML has long applied the 'max 25% of revenue' rule for their suppliers.



Figure 75. Production capacity of supplier

## 3. Relationship management

Once the team had the entire design plan in place in consultation with their suppliers, they threw a launch party for those 15 suppliers. At this event, they unveiled the printer design on a single A0 poster named the *Apollo Project*. The poster, which featured a launch date set two years into the future, served as a symbolic commitment, and they asked all 15 companies to sign it.



Following this gathering, negotiations and contract drafting commenced with each supplier. One vital part of this deal was that *all* generated know-how was owned by the startup! We cannot stress this importance enough. If a supplier were to patent specific steps in developing the critical components of your machine (which they designed), it would create an unhealthy dependency on them and significantly constrain your ability to exit the relationship or transition to alternative solutions. It also influences the other suppliers. Additive Industries was therefore ruthless in this regard. If any supplier would start to develop technology for new products based on the generated know how of the Additive Industries project, the founders team asked the supplier to immediately stop or else the collaboration would be terminated. The 'what's in it for them' is the contractual promise that they will be the preferred supplier for a period of time and/or for a certain amount of parts and the soft promise of an open, transparent relation that could lead to more in the future. You can probably understand that this initial development cycle is a big risk for a startup (but also for a large company like ASML) as you are fully dependent on external parties who are involved with long and uncertain development roads with sometimes still unknown specifications.

So to mitigate that, right after the launch the team started to provide monthly updates on the progress and status of all fifteen suppliers and the internal engineering team. This transparent approach allowed everyone to monitor each other's performance, crucial in a startup where time and money are make or-break factors. Also: the total transparency over the entire project built trust and understanding but also some healthy competition as no-one wanted to be the party that 'lagged behind'.

As a monitoring tool, they simply used excel. At a later, more mature, stage you can move to e.g. Microsoft or SAP and for technical data you can use Teamcenter PLM software developed by Siemens or Autodesk PLM.

Still, the team sometimes had to deal with suppliers that faced delay or other challenges. This was a delicate dance, to which the team had two options on the table: either allocate resources to assist the struggling supplier; that is send someone of their own team over to the struggling supplier *or* cut ties with the supplier and seek an alternative.

Both are difficult and hard decisions. The first diminishes the capacity of the startup team. It however ensures that the project stays on track, preventing a ripple effect that potentially could affect all parties involved.

The second is obviously also painful as this could lead to huge delays in the project. However, considering this option is necessary to maintain the project's integrity.



Figure 76. Dealing with suppliers delays

You can imagine that it would help enormously to have a professional from the industry guiding this process, as it involves project management, logistic planning, negotiations while at the same time understanding the complexity the suppliers have to deal with. Additive Industries therefore built a professional team consisting of the brightest engineers as well as supply chain and procurement experts.



In a creative move, the team distributed sweaters to everyone in the team, including the suppliers involved, prominently featuring the project's deadline. This served as a tangible reminder, fostering a sense of involvement and emphasizing the importance of meeting the challenges ahead.

And, of course, the team itself had to make sacrifices, cutting corners to meet the stringent deadline. Still, the alternative —falling behind and setting a poor example for the suppliers— wasn't a viable option. These were tough choices, no doubt. But, in the end, their determination paid off. The product, the first beta version of the MetalFAB1, was right on schedule.



## 4. Roles in the value chain

So what are the more technical aspects of supply chain management? Alongside Daan's story, we aim to provide you with some tools and terminology to enhance your understanding of Supply Chain Management (SCM). Below is a nice overview of different types of suppliers:


Figure 78. Roles in the value chain

This matrix consists of two axes: supply and development. Sometimes these two align (that is: the supplier of parts is also the developer), at other times they do not.

It depends a bit where your company is situated in the value chain, but assuming you are the OEM, that is: the *original equipment manufacturer*, on the supply axis you usually deal directly with the OMM or *original module manufacturers* (when these own the design) and generic system suppliers for subcontracted work the OEM owns. These are your first tier suppliers. Those OMM suppliers also have suppliers, the OPM or *original parts manufacturers* (when they own the part IP), component or specialist suppliers. These are your second tier suppliers (the suppliers of your suppliers). As explained before, the suppliers of the suppliers of your suppliers, the parts suppliers, are 3rd tier. This generally makes up your supply chain: equipment consists of modules, modules consist of parts.

In addition, we have ODM on the development axis, which stands for the *original design manufacturer*. If you're looking for a specific part or module that is not yet in production, you will first need to design it.

During the development stage you should have all key parties geographically close. These include the engineering parties, the suppliers and the manufacturers. Some startups still have the tendency to have certain parts cheaply manufactured in China, but with the recent geopolitical changes, more and more parties are moving their key supply/manufacturing back to Europe. In some cases regulations demand you keep it within the EU.



Figure 79. Proximity is key!

## 5. Risk management

One of the most important parts of running a Deep Tech startup is risk management. This applies for nearly every aspect your company has to deal with, including your supply chain. There are several aspects you need keep in check regarding that supply chain.

In order to do this you need to categorize your supplies. You can do that by using a Kraljic matrix.

The axes consist of supply risk and financial impact. The first describes how many alternative suppliers there are. The second describes the cost of the parts or their contract value. The four quadrants of this matrix are:



Figure 80. Risk management - Kraljic matrix

#### **Routine supplies**

### ROUTINE

#### Profile

- Abundant low cost parts
- Large selection, many alternatives
- Several qualified sources
- Easy to find a supplier

#### Focus on

- Standardizing purchasing process
- Standardising items
- Cost reduction through automisation

Figure 81. Risk management - Kraljic matrix

These are low-cost parts that are abundant, so there is a large selection, with many alternatives both in product and supplier. The suppliers are very accessible.

For these supplies your focus should lie on standardising the purchase process as well as the product as much as possible. Cost reduction by automating the purchasing process, for example by making use of e-tendering, is also key.

Standardisation should also include documentation and logistics handling to reduce administrative overhead and error rates. Batch processing, automated approvals, and integration with ERP (Enterprise Resource Planning) systems can bring further efficiencies. These parts typically lend themselves well to framework agreements and catalogue-based purchasing.

Even though the supply risk is low, operational resilience should be maintained through regular audits and fallback suppliers. Procurement teams should monitor minor price fluctuations or disruptions that may cumulatively affect margins when scaled across large volumes.

## **Bottleneck supplies**

## BOTTLENECK

#### Profile

Low cost but scarce parts

- Complex items / low frequency service
- High entrance barriers
- Few qualified suppliers / monopolists

#### Focus on

- Securing supply through contracts
- Seeking substitutes to shift supply to ROUTINE
- Adapt end product
- Create in house

#### Figure 82. Risk management - Kraljic matrix

These are low-cost parts that are not abundant and can therefore form a bottleneck, due to complexity in manufacturing or suppliers that are difficult to deal with or hard to find.

For these supplies your focus should lie on securing a steady supply through long-term contracts, looking for substitutes that fit the 'routine' category, perhaps adapt your product or perhaps even create the parts in-house.

Ongoing risk assessment is crucial. Evaluate exposure to single-source suppliers, geopolitical risk, and component obsolescence. Developing in-house capabilities, even if only for prototyping or as a contingency, increases leverage in supplier negotiations and shortens lead times.

Engage with engineering early to explore design modifications that reduce or eliminate dependency. A shift from bottleneck to routine can dramatically increase operational agility. Lifecycle management and proactive end-of-life monitoring should be embedded into procurement planning.

### Leverage supplies

#### LEVERAGE

#### Profile

- High value parts / low risk / less frequent
- Many alternatives
- Several qualified resources
- Easy to find and switch supplier

#### Focus on

- Competitive tactics (e.g. short term contracts)
- Getting price further down
- Purchasing volume (high quantity  $\rightarrow$  low cost)

#### Figure 83. Risk management - Kraljic matrix

These parts are costly but abundant. This means they're expensive but there are many alternatives, with many good suppliers that are easily accessible.

For these supplies your focus should lie on outplaying the competition by entering short-term contracts and renegotiating the price when a contract is due. Additionally, you could lower the price by purchasing large volumes of these parts.

Establishing a competitive bidding process or reverse auction mechanism can maximise pricing pressure. Leveraging supplier scorecards and quarterly business reviews can help monitor performance and maintain negotiation leverage without sacrificing quality or delivery times.

Consolidating purchases across business units or projects can yield further volume-based cost savings. Consider deploying cost-modelling tools or clean-sheet costing to challenge supplier margins and gain deeper insights into cost structures.

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## **Strategic supplies**

## STRATEGIC

#### Profile

Key items / high value / high risk

- Critical for business performance, cost & delivery
- Few qualified suppliers, difficult to switch
- Complex specifications required

#### Focus on

- Securing for long term
- Collaborate and build relationship
- Joint development

Figure 84. Risk management - Kraljic matrix

These parts are critical to your product, expensive and characterised by few qualified suppliers, making it difficult if not impossible to switch supplier. The required specifications are also complex.

For these supplies you should focus on securing supplies for the long term, for example through contracts, spend time on building a strong relationship with the supplier, collaborate where possible and engage in joint development. At the same time try to find or develop a second source and if that fails or is unfeasible, consider developing and later producing the part in house.

Establish executive-level alignment with strategic suppliers and set up governance models for joint planning, risk mitigation, and performance tracking. Engage in open-book costing and co-investment models if necessary to secure innovation or production capacity.

Ensure integration of strategic suppliers into your product development lifecycle from an early stage. This alignment reduces time-to-market, ensures feasibility, and allows joint forecasting. Intellectual property considerations should be addressed through robust contractual arrangements.

#### There will be more challenges

You can probably guess that when you start scaling up from 1 part to a few parts to 10,000 that this will bring its own challenges. The bullwhip effect is a famous example of this in supply chain management, where demand for parts can vary wildly up the supply chain.



Figure 85. Bullwhip effect

The solution to this issue is - unsurprisingly-: communication.



Figure 86. Bullwhip effect

Matters like that however come into play at a later stage and is beyond the scope of this chapter. In other words: when you reach that point: hire or at least consult a professional.

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## Additional reading material

For more information on this topic, please refer to the NEVI website: https://nevi.nl/. The NEVI, or Dutch Association of Purchasing Management, is a professional organization in the Netherlands that supports and educates purchasing and supply chain management professionals. In addition Daan recommends these two books by Arjan van Weele et al.:

Procurement and Supply Chain Management

- Procurement and supply chain Manag
- Inkoop In Strategisch Perspectief



# 9. Value inflection points

# Introduction

As a Deep Tech startup, when you start discussing your business with an investor you will invariably encounter the term 'value inflection points'. This typical terminology is coined to indicate the moments your company increases in value. In the beginning, this will be caused by de-risking. At a later stage, it will be due to growth. Understanding where the 'value inflection points' are in your company's growth strategy is vital to attract investors.

## **Understanding value inflection points**

A value inflection point is basically a set of one or more clear *proof points* in time at which the 'proof' results in either a significant risk reduction or technological or market breakthrough, which will result in a (significant) increase in value of your company.

Sometimes the term milestones is used instead of proof points. Strictly though, milestones are more generic than proof points.

Another thing to be aware of is that these proof points (or milestones) are also often used to define investment tranches and those tranches can be called when a milestone or proof point is reached.

I would like to give some clear examples but they heavily depends on the technology and market, but still, to give you an idea:

## **Proof points examples**

**Technical feasibility demonstration**: Successfully demonstrating that a novel material can be synthesized or a new algorithm consistently delivers expected outcomes in a lab setting.

Why it's a proof point: It proves the core idea is scientifically viable but doesn't yet guarantee market success.



**Prototype development**: Building a working prototype, such as a functional quantum chip or an AI-powered robotics system, that shows how the product will work in practice.

Why it's a proof point: It validates the transition from theory to tangible product, addressing technological risk.

**Early customer trials**: Completing successful trials with early adopters, such as an energy-efficient battery being tested and positively reviewed by an automotive company.

Why it's a proof point: It confirms preliminary market interest and functional performance in real-world conditions.

## Value inflection points examples

**First product sold**: especially for a solid Deep Tech company like ASML or Nearfield, where one machine sells in the order of  $\in$  10M+, selling your first machine is a major establishment.

**Clinical trials**: one set of really clear VIP's are clinical trials in drug development. These stages concerns safety and efficacy of the drug and successfully completing a trial is a clear value inflection point.

Scalability: another one that is often looked at is whether your company is capable to setup up a reliable repeatable process both in production and sales of you product. Once you've established that, you change from a development company into a production company. Also once you know how things work, you also know what they cost and your company becomes a fairly reliable 'money multiplier'; once you know the production and sales cycle costs € 100 and generates € 500, you can make a fairly safe assumption that if you invest € 1M it will be turned into € 5M value (it's a bit oversimplified, but you get the idea).

# **Develop strategy**

Getting a good grip on the stages your company needs to go through with the corresponding proof points and value inflection points, you can create an investment strategy. On the next page you can find an example of this.



	Pre-seed stage	Seed stage
Focus	Technical risk	<ul><li>Technical risk</li><li>Productization risk</li></ul>
Objective	Validate the technical feasibility of the product	<ul><li>Validate product/market fit</li><li>Goto market strategy</li></ul>
Team (re) assessment	<ul><li>Technology leadership</li><li>Business Developer</li><li>CTO</li></ul>	Productization (product truly up to specs of customer) skills
Proofpoints	<ul> <li>Proof that the technology works (PoC)</li> <li>Develop a Minimum Viable Product (MVP)</li> </ul>	<ul> <li>Move MVP to product based on users feedback</li> <li>Identify target markets and customer profiles</li> <li>Establish lead customer base and engagement</li> </ul>
Investment	K€ 500 - 1000 ( <mark>PS</mark> )	M€ 2-5 ( <mark>S</mark> )



Series A/B stage	Series C+ stage				
<ul><li>Go-to-market risk</li><li>Industrialization risk</li></ul>	Market expansion risk				
<ul><li>Build reliable supply chain</li><li>Industrialization strategy</li></ul>	<ul> <li>Apply Technology on new market</li> <li>Next generation (gen 2) product</li> </ul>				
<ul> <li>Industrialization skills</li> <li>Internationalization skills</li> <li>Sales &amp; Marketing skills</li> </ul>	Scale organization, operations and infrastructure to support growth				
<ul> <li>Grow customer base and prove the business model</li> <li>Certification/Regulatory approval</li> <li>Ensure mass-producible product at the right cost-levels</li> <li>full supply chain is setup</li> </ul>	<ul> <li>Initial traction in new market</li> <li>Show viability of gen 2 product</li> </ul>				
M€ 5-15 (A) 20-50 (B)	M€ 50+( <mark>C+</mark> )				

# Early stages of a Deep Tech Startup

Usually a Deep Tech startup goes through four major stages. After reaching a certain stage, there is a (usually major) increase in value of the company and a different type of investor steps in. Note that each stage can exist out of one or more finance rounds, but the value increase during these intermediate stages is usually limited.

The four stages are:

- pre-seed;
- seed;
- series A/B and
- series C+ stage.

Investors usually predominantly focus on one stage. The type of fund they manage is therefore usually named after one of these stages. So you have 'seed funds' with a 'seed investor' or a 'series A fund' with a 'series A investor'. We will go into more detail below, as each stage has its own dynamics and, of course, proof points.

#### **Pre-seed stage:**

The pre-seed stage is the one where the technology is still in full development. Basically any stage below TRL 9 is 'pre-seed'. Hence the biggest risk your startup has is technical.

The objective of this stage (value inflection point) is to reach TRL 9 and to validate the technical feasibility of the product or service.

Usually a Deep Tech startup starts in this stage and the first funding they can get is in the order of € 500K to 1M (high tech startups range would be 100K to 250K). In order to reach the end of this stage however, more money is often required. It's not uncommon that up to 4M is required to leave the pre-seed stage.

During this phase your team should be focussed on two goals:

- customer validation: are you developing a solution that has a direct fit to your perceived customer's problem?
- · technological development of the product.

The most important people in the team are the CTO and the CEO (who usually fulfils the role of business developer).

#### Seed stage

The seed stage is marked by the fact that you start generating your first commercial revenue from your product. Some startups may have already generated revenue from consulting services due to having highly specialized experts on their team, or from grants and collaborative projects. However, that's not what we're referring to here. This is specifically about *commercial* revenue from the product or service you aim to bring to market.

The typical funding range you can raise during this stage is around 2 to 5M. But also during this phase it's not unlikely, especially for Deep Tech, that up to 10M is required to surpass this stage.

Because you know actually start selling your product, that means that the technological development starts to shift towards productization phase. In other words: making sure your product (or service) can be produced reliably, meeting the specs of the customer. During this phase there is still a lot of emphasis on the technological development but there's more interaction with both customers and suppliers. At this point, running your company requires a new set of skills. Hence, it's also the time to ask yourself: am I still the right person for this job? You have to be ready to step aside if you're not!

Also your go-to-market strategy becomes important during this phase. In the beginning you can afford to have long sales cycles with customers to learn about their needs and requirements and getting the specs right. But during this phase you should get your company ready to shift from lengthy, customized sales cycles to "moving boxes", that is, reliable repetitive sales cycles. This can only happen if your product fits most of your customer base and if you truly know their DMU, that is decision-making unit. Which is a topic beyond the scope of this chapter.

### Series A/B stage

Note that there is a difference between investment rounds and development stages. Especially with Deep Tech it's quite possible that you have to go through several development stages before you have an actual sellable product, hence, it's quite possible to get into your series C or even D *investment round* before you actually leave the series A/B *development stage* as described here. A better way to describe this stage would be 'early growth stage', however within an investor context, this stage is often referred as 'series A stage'.

During this stage the focus on technological development of the product strongly shifts towards the industrialization phase of your company. You will still be doing research and development but that is focused on the 2.0 version of the product. The big challenges you run into here are:

- your team will be put to the test (are you still the right person for the job?)
- your go-to-market strategy will be put to the test
- your production cycles will be put to the test
- · the rigidity of your supply chain will be put to the test

All risks involve the act of reliably and repetitively "moving more and more boxes". Which means that your supply chain, production cycles and sales cycles need to be robust and you have reached the optimal cost price for you product. It's also quite likely that your focus now shifts to international sales, which obviously brings its own challenges.

Typical funding rounds are  $\in$  5 to 15M for stage A and  $\in$  20-50M for stage B with most likely a couple of bridging rounds in between.

This stage can lead to a potentially serious exit, obviously something you need to take into account as, by the end of this stage, you either aim for an exit or the next funding round. A typical exit party would be a strategic partner, for example a corporation that is currently your customer.

#### Series C+ stage

If you haven't had an exit during the previous stage, then you will have it during this stage as this is the last stage where you can still be considered a 'scale-up'. The likely exit scenarios after this stage are either an IPO or a full company sale.

A famous exit of this type is ARM Holdings (UK) acquired by Softbank in 2016 for  $\notin$  32B (yes that's B for Billion). A famous example of a strategic exit is the acquisition of DeepMind (UK) by Google for around  $\notin$  500M.

A famous IPO you probably know of is of course ASML in 1995. ASML raised  $\notin$  95M at that time. Another big IPO was Adyen in 2018, which raised  $\notin$  950M (for 13.4% of the total shares).

To be honest though, the numbers in this phase are really all over the place. We would typically say that a series C+ round would be 50M+, but to give you an idea of the '+'; the Ant Group (that's the financial services group of the Alibaba Group) had a series C round in 2018 of  $\in$  14B. Deep Tech is more modest. The biggest VC round to our knowledge was a series B by SpaceX of  $\in$  1B. Here, too, you see that there is quite some fluidity between the series indicator ('B'), the amount involved ( $\in$  1B) and the stage the company is actually in ('C+').

The big challenge for the C+ stage is typically the market expansion. You've proved there is a market, you've proved that you can deliver, can you now prove that you are capable of capturing more segments of the market and can you scale up (globally)?

Scaling up is a beast. To name your 'sub' challenges:

- Technological: the fact that you can make a product reliably 1-10x does not automatically mean that you can produce it reliably 100-1000x times. You need an enormous control over the quality of your product and quality assurance of your processes to prevent your company from having to throw away half its products; or even worse: having to recall them.
- Supply chain: the fact that you can scale does not automatically mean that all your *suppliers* can scale with you, so you need a solid control check on that.

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- HR: have a look at ASML and the *enormous* amount of new hires they have each year (e.g. over 4,000 in 2023). It will be hard to find new people and to offer a competitive salary and to have your HR processes in check to board these people in a scalable fashion.
- Market: entering new market segments inherently brings its own risk as you fully need to both understand and develop these and your product needs to fit in their processes.
- Funding: the fact that you entered this stage does not automatically mean that you can exit it and as said, 50M+ rounds are not that easy to close.
- Financial and operational: by the time you reach this stage your company will have surpassed the 50 employees which means the introduction of new management layer and no more direct control, becoming dependent on the middle management for their control. This too brings its own operational and financial risks.

While you're managing these risks you still need to reach the value inflection points for this stage in order to bring the company to a good exit point. For this stage these are:

- Scaling, that is basically dealing with all of the risks above (overcoming those risks are proof points);
- Product diversification or new market expansion, also covered in the above;
- Optimizing your sales strategy with existing and new distributors. In Deep Tech you're most likely encountering long sales cycles for which you simply do not have the capacity nor the funds to do it all by yourself. That and new markets require new approaches and understanding those markets. Sales partners can help with this, however they obviously want a piece of the pie, resulting in lower margins. A proper strategy is required to optimize this process.

## Timing and investment cycles

While you are dealing with all this, you have to keep in mind that investment cycles typically cover a 12-month value increase period focused on achieving key milestones, followed by a six-month fundraising period for the next round. This cycle ensures continuous progress and aligns with investor expectations. You need to determine which value inflection point you can reach within that 12-month period and which have to be postponed to the next investment

round. Sometimes that's not possible, requiring a bridge round, usually at the same value as the last round.

Achieving value inflection points within this cycle maximizes the company's growth potential and funding opportunities and will increase your company valuation.

## Conclusion

Value inflection points are essential for driving a startup's growth and securing investor confidence. By strategically planning and achieving these milestones, startups can reduce risks, increase value, and attract necessary funding to scale their operations and enter new markets. Understanding and leveraging value inflection points is crucial for a successful funding strategy and longterm business growth.

## Additional reading material

I can't really find anything tailored to Deep Tech, so this chapter is based on discussions with Deep Tech investors. On the more general topic of value inflection points, these are two good blogs:

https://medium.com/ceoquest/funding-exits-chapter-2-the-value-inflection-points-97d52e540573

https://alejandrocremades.com/mastering-value-inflection-milestones-aroadmap-for-early-stage-growth/

# **10. Cap tables**

# Introduction

This probably should have been chapter one. But as it is, this part only recently came up when I decided to develop a standard to be used in house and quickly realised that it would be great to share this. I hooked up with Hessel Mittelmeijer of the DeepTechXL fund to design a 'standard' cap table, even though there is no such thing as a 'standard' cap table, as every situation requires a unique approach and there are always some parameters in a deal that require an adaptation of the 'standard'. It is safe to say, though, that what we created covers roughly 80% of the 'cap table world' but, more importantly, it can be used as a reference to create a more customized cap table with a uniform layout and terminology.

One issue I often encounter when reviewing cap tables is the puzzle you are faced with. This runs from simple things like 'common shares' vs. 'ordinary shares' (same thing, different term), to more devious terms that obfuscate for example a participating liq. pref.

Most topics like, 'effective pre-money', 'liq. pref.', 'convertible loan' have already been covered in other chapters, so in this chapter I will assume that you are familiar with those terms.

# Cap table

A capitalization table (cap table) is a structured breakdown of a company's ownership structure, showing the distribution of equity among its shareholders. It is a crucial tool used by startups, investors, and other stakeholders to track ownership percentages, types of shares, valuations, and potential dilution scenarios.

Cap tables typically detail information such as founders' shares, ordinary and preferred stock, convertibles, and other equity instruments. They are essential for understanding how control, value, and financial returns are distributed within a company. When the company is sold (exit event) or enters the stock

exchange (IPO: initial public offering) the cap table will be used to calculate the 'waterfall'. This is the distribution of the exit proceeds among the shareholders. This is typically a complex topic, which we will briefly explore in this chapter. As companies grow, their cap tables evolve, reflecting new funding rounds, issuance of stock options, or ownership changes due to mergers and acquisitions. For startups in particular, maintaining an accurate and up-to-date cap table is critical to financial planning, investor communication, and decision-making during key events such as fundraising or an exit.

In this introduction, we will explore the components of a cap table, its significance in the lifecycle of a company, and best practices for managing it effectively.

#### **Capital waters**

You can find several standardized cap tables on the Capital Waters website: *www.capitalwaters.nl*. We have developed three types of sheets you can download:

- **Basic**: a simple cap table employing only the essentials of a cap table
- **Standard**: this cap table should cover 80% of all cases and is a good basis you can use to create your own company cap table
- Waterfall example: this is the standard cap table with additional investment rounds (B to D), all filled with 'realistic' numbers and a waterfall sheet has been added that shows you how the exit proceeds are calculated over the shareholders. This can help you to model the future development of your company's ownership and gives you insight in the effects of e.g. 2x (or higher) liq. pref.

# The standard cap table

Below, you can see what this cap table looks like.

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	Founding	INCORPORATION						nversion	Seed		
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Founder 1	€ 4.50	450.000		50.0%	45.0%		€			450.000	37.4%
Founder 2	€ 4,50	450,000		50.0%	45.0%		€	-	-	450,000	37.4%
Investor A	€ -						£	253.835	53,439	53,439	4.4%
Investor B	€ -				-		€	589,385	124,081	124,081	10.3%
Investor C	€ -						€	128,773	27,110	27,110	2.3%
Investor D	€ -				-		€	-	-	-	-
Investor E	€ -			-	-		€	-	-	-	-
Investor F	€ -			-	-		€	-	-	-	-
Investor G	€ -			-	-		€	-	-	-	-
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		€	-	450,000	-	-		450,000	-	31.7%	28.5%
		€	-	-	-	53,439		53,439	10.3%	3.8%	3.4%
		€	-	-	-	124,081		124,081	23.8%	8.7%	7.9%
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As you can see, the sheet consists of several parts that are split both horizontally and vertically. Horizontally there are three sections:

- General information: this contains information concerning the deal: date, amount invested, liq. pref. etc.
- **Shareholder information**: every row represents the financial contribution of one shareholder. It is possible that a shareholder contributes over several rounds. All this information is listed in one row, with the different investment rounds shown in multiple columns.
- **Convertible loans**: the bottom part gives an overview of the convertible loans or notes that have been issued to the company. The result is added to the 'shareholder information' part.

Vertically, there are many sections. In this standard cap table there are three, but when the company evolves, more will be added with each round. Each vertical section represents a moment in time at which the shareholding in the company changes.

- **Incorporation**: shows the cap table situation when the company was founded.
- **CLA conversion SEED**: usually an investment takes place on a fully diluted basis, so FIRST the conversion takes place and then the investment. This 'order' is shown here.
- **SEED ROUND**: this is (usually) the first investment round during which (new) equity is issued.
- CLA conversion SERIES A: same as the seed round, first CLA conversion
- SERIES A: same as the SEED round, the next investment.

After this, most likely a series B, C etc round will follow, usually with one or more bridge rounds in between which are usually done with a convertible loan (or something similar).

## Incorporation

I will explain the entire cap table per section, starting with incorporation. Note that the Excel sheet includes comments for all relevant fields.

**Nominal share**: When a company is founded, a 'nominal value' is set for the share price. This accounts for the initial investment in the company. To obtain shares, at least the nominal value needs to be paid. Typically this price is set to 1 ct.

**Paid-up capital**: this is the payment for the nominal value of the shares. This is money paid by the founders to the company. Ordinary Shares: are shares that represent both your voting rights and economic value in the company. They have no special (preferred) rights, they're often also referred to as 'common shares'.

**SAR**: Stock Appreciation Rights. These are virtual shares representing an economic share in the company. These are typically given to employees to encourage them to stay with the company. SARs have no voting rights. See also chapter on employee incentive plan.

% holding: these are voting shares and therefore represent a portion of control over the company.

**% FD (Fully Diluted)**: these are the voting and non-voting shares combined and therefore represent the economic share in the company.

**SAR pool (authorised)**: when a SAR pool is created (authorised by the shareholders) it is usually not yet allocated. The allocation of the SARs to employees happens over time. This is tracked in the 'SAR allocation table' which shows who received SARs.

Total holding: the total amount of actual shares

Total fully diluted: the total amount of both actual and virtual (SAR) shares.

## CLAs

We've already covered the topic of CLAs in chapter 4: convertible loans. For most terms we refer to that chapter. Some remarks:

- To keep things organized, the conversion of the loans is kept separate from the SEED investment. This also allows for a more natural reading of the table as the CLAs were given earlier than the SEED investment.
- the loans are converted into the same type of shares as the new investor, in this case 'seed preferred' shares. These will thus be part of the total.
- In this table we allowed for multiple discounts (20% and 10%). This sometimes happens when convertibles are given to the company at different moments in time. Usually 6 months before a closing it will be 20% and less than 3 months before closing it is usually 10% or less.

In chapter 4 I explained the concept of Effective Pre-Money; in the Capital Waters excel sheet we chose however to calculate the share price directly, using the iterative functions of Excel. This is more widely excepted amongst established investors. Still I added the effective pre-money, just to make clear what the pre-investment share price actually is.

#### **SEED round**

You should by now be familiar with most terms used here. Some new ones:

**SAR pool post-closing**: usually the investors demand a SAR pool to be allocated for distribution among key personnel. This is typically 10% or even 15%. Here you can set that number and the sheet calculates how many new SARs need to be authorised. Note that these shares are placed in the column 'New/Issued SAR'. That cell is framed red because it contains a formula that is part of a circular reference.

**SAR top-up in pre-money**: when issuing new (economic) shares while the value of the company remains the same, the value of a share will decrease. Effectively it will lower the percentage the existing shareholders have. Given that investors usually want to invest on a fully-diluted basis, they want you to FIRST authorise a bigger SAR pool, such that post investment, the SAR pool is 10% again. This SAR 'top-up' would then be in the 'pre-money' phase. Alternatively, sometimes investors agree to do the top-up post-money, in which case you can change this to 'post'.

**Round share price**: this should be fairly evident. Note however that this will introduce minor rounding errors in the share distribution. The reason for this is that some investors (or notaries) prefer to round off share prices to two decimals. As explained earlier: the iterative functionality of excel is used to calculate this share price, and therefore this cell is also framed red.

**Disbursement**: the amount of money that is actually paid by the investor, which can differ from the initial investment due to rounding.

#### **SERIES A round**

The only thing that changes in this round and all future rounds is the addition of an extra 'preferred' column. So in the future you will have a 'preferred Seed', 'preferred Series A', 'preferred Series B', etc. Each preferred series share will have its own right (like liq. pref.). It's important to keep track of this because in case of an exit event, if the preferred shares do NOT convert to ordinary shares, then the shares issued in the last round will get their money first. Followed by the previous round and the round before that. The 'ordinary' shares will be the last to receive anything. Because of this 'domino effect' the choice of exercising you liq. pref. or conversion (to ordinary shares) right is sometimes not obvious. We will deal with that in the part about the Waterfall.

# SAR allocation table

The purpose of this table is to keep track of which employee or consultant or founder or any other participant gets how many SARs. When issuing SARs usually a 'cliff' and 'vesting' is also applied. I've chosen to set the vesting period in months and the cliff in days. Typically you could set a 36-48 months vesting with a 365 days cliff. Some new terms used here:

Authorised pool: this is the total number of SARs authorised to be distributed.

Unallocated: this is the part of the authorised pool that is not (yet) distributed.

**Accelerated vesting**: usually there is an accelerated vesting clause in the SAR contract. This means that in case of an exit event, all 'non-vested' shares are automatically vested. This dropdown box facilitates this. You can set if to 'yes' when this happens (or when you want to model).

# Waterfall

The 'exit distribution waterfall' or 'waterfall' in short, is the distribution of the exit proceeds among the participating shareholders (including share equivalent equity, like SARs).

This sheet you can find in the 'waterfall example' excel book. You can use this to model the exit proceeds depending on different rounds, chosen liq. prefs., outstanding loans and of course the exit value of the company. This gives insight into who receives what and whether to convert a liq. pref. into shares or not.

The sheet looks really complex, but you don't have to concern yourself with most of it. It is meant to help you model future investment rounds and the effect they have on the exit position of all parties involved. It also provides insight into the effect of liq. prefs. - especially multiples on liq. prefs. can have a massive influence on the waterfall. Finally, the sheet helps you understand what 'returns' you are proposing to your (new) investors, given the expected subsequent rounds. Typically, investors aim for a >10x return potential on their invested capital. If this potential is difficult to achieve in any of your future rounds, you might encounter an issue during the fundraising of that round. As such, you might want to think upfront about these potential consequences and how to mitigate these risks. At the top of the sheet you can see the resulting distribution of the proceeds to the shareholders. I suggest having a look at the two graphs you can find there:



Figure 87. Exit proceeds per shareholder



Loans & IB fee Liq. Pref Ordinary shares

#### Figure 88. Exit proceeds after waterfall

The complexity of the waterfall arises due to the liq. prefs. First it's good to know that with each round new preference shares are issued. The exercise right for the liq. pref. is always higher for later rounds. For example, if you raise a Seed, Series A, and series B round, it would mean that the series B liq. pref. rights are exercised first, followed by the Series A liq. pref., and finally the Seed liq. pref. If everyone decides NOT to convert, meaning that they would not convert their liq. pref. shares into ordinary shares, it means that first the liq. prefs. are paid up, after which the remaining amounts will be divided among the holders of the ordinary shares.

With that in mind: let's assume a  $\leq$  10M exit with 4 parties each with equal share of 25%. The parties are Founders, investor A, B and C. If everyone would convert to ordinary shares then the proceeds for each party would be  $\leq$  2,5M.

Let's assume that A invested  $\in$  5M, B  $\in$  2M and C  $\in$  2M, all three with a liq. pref. of 1x.

C is the first to decide, as they have highest exercise right. 25% of € 10M = € 2,5M which is more than their € 2M liq. pref. so they decide to convert to ordinary shares. B, same thing. A, however, is much better off with their liq. pref. so they don't convert and (potentially) thus get € 5M. That would mean that only € 5M is left to be equally divided amongst the three remaining parties: € 1,6M per party. As a result B will revoke their earlier decision to convert their shares, and will also exercise their liquidation preference of € 2M. You can guess what happens next: C thus also revokes its decision to convert and exercises its liq. pref. of € 2M. This leaves € 10-2-2-5M = € 1M for the founders who have no liq. pref. and only ordinary shares.

Other things to keep track of is the M&A fee for the facilitating party, which is typically 5%, loans (which have preference over shareholders) and taxes to be paid.

Holders of ordinary shares (e.g. the founders) and owners of SARs are last in the revenue waterfall. SARs usually have financial rights equal to ordinary shares. However, SARs are a contract between the company and the holder of the SARs (e.g. its employees). As such, although that SARs represent the same value as 'ordinary shares' and are treated equally as ordinary shares in the waterfall, they are actually paid by the company.

The Capital Waters example excel sheet keeps track of this. Keep in mind, though, that reality is most likely more complex and some really advanced modelling is required. This example sheet is mainly meant as exactly that: an example that helps you model your funding route.

You may conclude from the above that it is really important that you get your funding strategy in order for the long run, which is why I rewrote the chapter on the funding strategy from my earlier book and added it to this book. You have to be able to tell the WHOLE story of you company, from incorporation to exit, so you and investors can do their modelling to see if it makes sense to do the investment now and what is required in future rounds.

Even if it's just a story, make damn sure it's a compelling one!

#### Additional reading material

Cap tables are prone to national conventions (or even VC conventions), hence in different countries different styles of cap tables are used. With this CW cap table we try to aim at a Dutch national standard.

For this reason it's hard to find in depth material on Cap tables. More generic blogs can be found online. For example:

https://www.forbes.com/sites/dariashunina/2024/06/28/mastering-cap-tablemanagement-a-startups-guide-to-success/

https://www.svb.com/startup-insights/raising-capital/understanding-startup-cap-table/

https://www.amazon.com/Founders-Pocket-Guide-Cap-Tables/dp/1938162072 (disclaimer: I haven't read this book!)



# Closing remarks – CTO

In this case, CTO stands for 'Chief Trust Officer'—and no, I'm not suggesting you formally appoint someone with that title (though it would be an interesting experiment). What I mean is that trust is the most important asset your company doesn't have yet—but absolutely needs to be established, grown and maintained as soon as possible with all relevant stakeholders. And if trust is that crucial, shouldn't someone in your company be actively managing it?

To quote myself from my last book:

The most essential barrier all startups need to overcome is trust.

Looking back, I'd actually rephrase that. Trust isn't so much a **barrier** as it is an **asset**—one you need to grow. While my last book focused on building trust with investors, here I want to emphasize that trust is essential in **every** aspect of your company: your employees, your financiers, your shareholders, your suppliers and of course: your customers.

## The three general USPs of every startup

Startups have three attractive aspects that will get your foot in the door with the customer:

**Fresh energy & passion** – Startups are new, exciting, and driven by passionate people. This energy is contagious and makes others want to work with you.

**A real painkiller** – You (hopefully) have a solution to a significant problem. If a company is in pain and you have the cure, they'll be interested.

**Flexibility** – You're (or at least should be) more adaptable than established partners, able to tailor solutions to specific needs.

## The three general liabilities of every startup

On the flip side, there are also three major *concerns* that make companies hesitant to work with startups:

**Stability & reliability risks** – Startups are fragile. Key personnel could leave, financial instability could lead to bankruptcy, and there's little to no safety net.

**Unproven technology** – Your product is new and largely untested, which means technical failures are more likely.

**Implementation & support concerns** – New technology always comes with challenges. The real question is whether you can solve these problems quickly and provide reliable support.

Put simply:

They don't *trust* you'll be around long enough.

They don't *trust* your technology will work.

They don't *trust* you can support them properly.

Now, if you're a massive corporation like Samsung, Philips, or Siemens, those concerns are largely mitigated. Siemens, for example, has been around since 1847 and isn't going anywhere. If they disrupt a customer's operations, the customer knows they can rely on Siemens for long-term support. A startup, however, could be bankrupt next week.

#### Building trust as a startup

So, how do you work around this? You leverage the three advantages you **do** have to get a foot in the door—often in the form of a paid pilot or demo. From there, trust must be **built, grown, and nurtured.** And the only way to do that is through **managing expectations and keeping your promises.** 

And that brings us back to the **Chief Trust Officer**—you need someone on your team who is focused on ensuring that promises made to customers are kept. This extends beyond just promises; it's also about **risk management** identifying potential issues and proactively addressing them with customers. This doesn't mean you need to scare customers with every potential risk. But acknowledging key risks—along with a clear plan to mitigate them—actually builds confidence. Customers **expect** risks. The worst thing you can do is pretend they don't exist because that makes you look unprepared.

## Walking the fine line

Trust-building is a balancing act. On one hand, you want to make big promises to get the customer on board. On the other hand, you **cannot afford** to break those promises, or you'll lose credibility. There's no one-size-fits-all approach to this—it depends on who your customer is. If they're a startup themselves, they understand what you're going through. If they're a 150-year-old corporation, they will have a very low tolerance for risk when it comes to their main business operations.

That said, here are some universal guidelines:

**Communicate!** – Keep in regular contact with customers (and all other important stakeholders), provide status updates, and make them part of your journey. It builds trust and makes the experience enjoyable for them.

**Address risks!** – Be transparent about your biggest risks and how you plan to mitigate them. It reassures customers that you are thinking ahead.

**Manage expectations!** – When making a promise, explain the steps required to get there, the challenges ahead, and any potential roadblocks. This sets realistic expectations and prevents future disappointment.

## **Final thought**

If you remember only one thing, let it be this: **Trust is the foundation of every lasting customer relationship.** It's what gets you in the door, keeps you in the room, and turns one-time deals into long-term partnerships.

I'll leave you with this fitting quote from Warren Buffett:

It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently.

# Colofon

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## **Deep Tech Startup Guide**

There are so many things to think about when you're starting your own company that it's easy to lose sight of the bigger picture. And often, the first real hurdle is simply not knowing where to begin.

This book is based on a series of eLearnings that Rolph created together with field experts, and it gives you a practical, actionable method to tackle the key elements you'll need to figure out when preparing—and taking—the first steps of your startup journey.

The focus here is specifically on deep tech, by which we mean hardwareheavy startups tackling real technical challenges. Topics range from market segmentation and stakeholder mapping to funding, term sheets, supply chain strategy, cap tables, and more.

This book is meant to guide you through the early phase of building a deep tech startup. It will help you avoid common pitfalls, give structure to your thinking, and provide focus for the actions you need to take before you truly get started.

