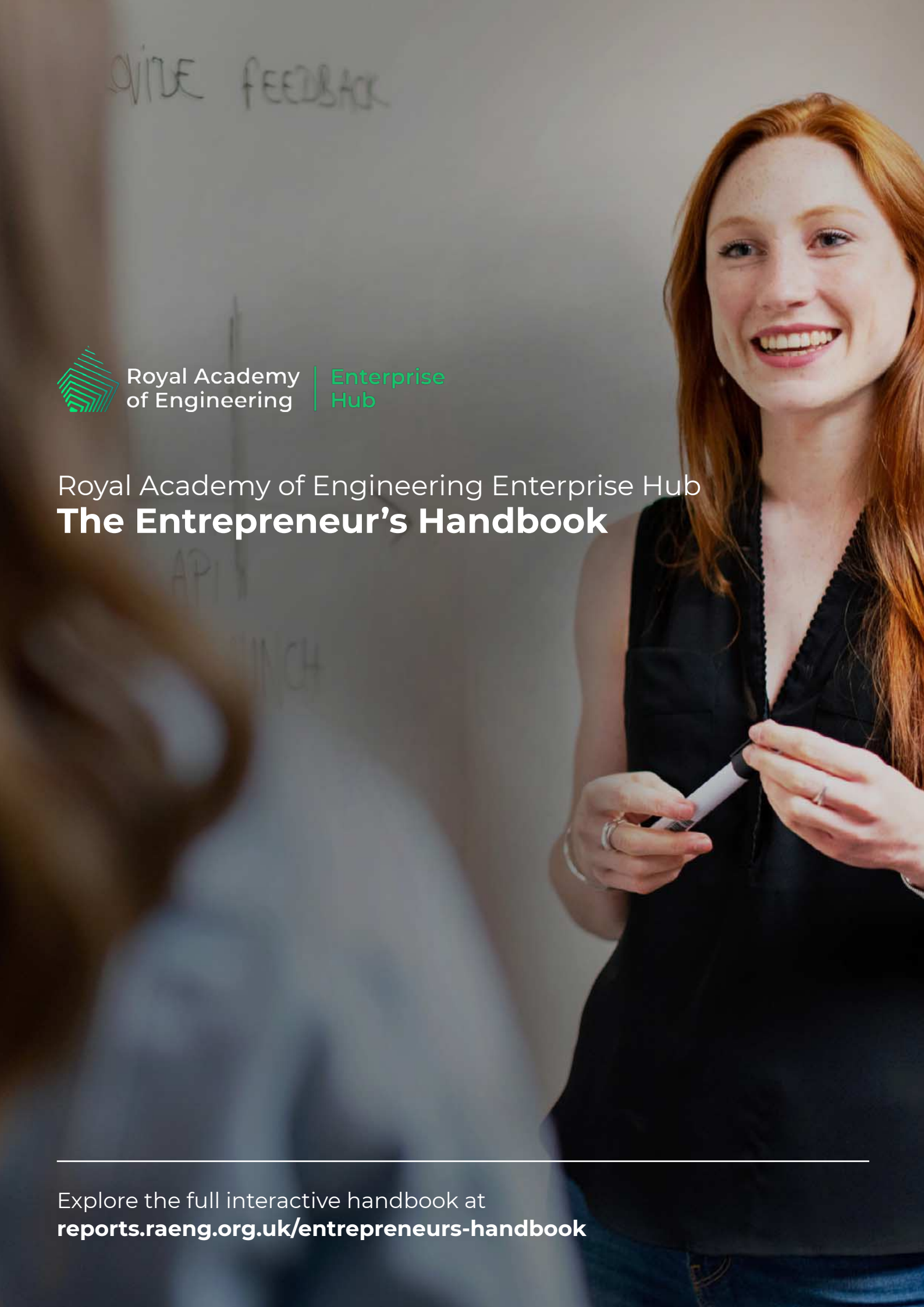


Royal Academy of Engineering | Enterprise Hub

Royal Academy of Engineering Enterprise Hub

The Entrepreneur's Handbook

Explore the full interactive handbook at
reports.raeng.org.uk/entrepreneurs-handbook

Contents

Welcome from David Cleevely CBE FREng, FIET

You're reading this because either you want to spin out a company or you want to learn more about how spinouts work. Either way this handbook is full of useful information for would be entrepreneurs, those who help them, and those who fund them.

This handbook does two things. Firstly it provides you with a basic guide to how spinouts get spun-out, who the players are, what is involved in the process, why intellectual property is important, what you need in a business plan and information about fundraising and team building. If you are a would-be entrepreneur then study this as you would a vital piece of research about our own field. The process you are about to embark on is complex and takes time. Don't assume it is obvious or common sense. The better you understand the map, the more straightforward your journey will be.

The second thing the handbook does is provide you with an insight into the motives and behaviours of everyone involved. This is much more complex than you might think – especially if you are an academic with an idea that seems so obviously brilliant that it must get funded. Perhaps the most valuable thing this handbook does is to encourage you to think about what is driving the other players in this game. You don't need to agree with them, but if you can understand why they are saying what they say, then you have a much better chance of success. That is why we have paid so much attention to reporting how people think about the issues from their own point of view.

If you can master both the process plus the more difficult task of understanding and managing the people involved, then the chances of success will be greatly increased. For this you will need to both be humble enough to listen carefully and take on board advice, as well as sufficiently convinced that what you are doing is right and that you keep going despite set-backs and delays.

Much of this guide draws on the Academy's experience of running our own spinout-focused grant programme since 2011, the Enterprise Fellowships, and the expertise of our Fellowship, alumni and network.

We've also reviewed existing materials, of which there are many. We've spoken to and surveyed academic entrepreneurs, Technology Transfer Officers, investors and more to bring all the important information and advice into one central resource. We are not attempting to replace those existing resources, and will often point you in their direction where they explain something better. This handbook is more of a companion piece to existing material. We hope it steers you in the right direction, and prepares you for the journey ahead.

David Cleevely CBE FREng, FIET
Chair of the Royal Academy of Engineering Enterprise Hub, 2019 – 2022

David Cleevely

How to use this handbook

First, understand that this book is by necessity an approximation. Every university has its own processes, and each sector brings its own unique requirements. We could never do justice to a document covering all variations, so we have split the process into five cyclical stages, covering these core questions:

1. **Does the idea have potential?**
2. **Should you try to spinout?**
3. **How do you get approval to spinout?**
4. **How to grow the business**
5. **What comes after success?**

Each section contains information on key tasks associated with that stage, decisions which need to be made, and a handy checklist to be completed before progressing to the next stage.

In writing this handbook, we have drawn upon experience gained running the Academy's Enterprise Fellowships programme, a process which is led by Academy Fellows. We've harnessed the expertise of our Fellowship in general, the programme alumni and our wider support network of commercialisation experts. It should be noted that we recognise our programme and Fellowship represents a specific subset of spinouts and sectors, which is not necessarily reflective of the wider community. It is a rich data source from which learning can be derived, though.

We ran a survey in October 2021, inviting comments from the wider community. This attracted some two hundred respondents from across the UK, a subset of whom were invited to workshops to delve deeper into areas of interest. We have also reviewed a great many resources that already exist, found either through our own research or suggested by contributors. Rather than replicate their good work, where we have little to add we will merely summarise their concepts for the benefit of those unfamiliar with it, and point them in the direction of where to learn more. Some sections are therefore significantly longer than others, but this shouldn't be taken as an indication of relative importance or difficulty. Rather, it allows us to concentrate on sections where we feel we can add most value in drawing on our own experience and community input.

Throughout the guide, we will draw upon all of these inputs. We'll highlight areas where the different stakeholder groups hold competing views or diverging aims, which can slow the process down. We will explain why the **stakeholders** have these priorities, and offer advice on how to best to navigate through these points of contention to meet the needs of all parties. The core groups are academic entrepreneurs, investors, and Technology Transfer Officers.

Jargon buster

As with all sectors, this process comes with its own jargon. Any words or phrases marked in orange have been defined in the glossary, which can be found at the end of this handbook.

Two phrases you must know before we progress further are 'startup' and 'spinout'. All spinouts are startups, but not all startups are spinouts – in fact, very few of them are.

A **startup** is essentially a new company (legally formed or just a concept), seeking to establish itself as a self-sustaining entity.

See **steveblank.com/books-for-startups** for general reading on startups.

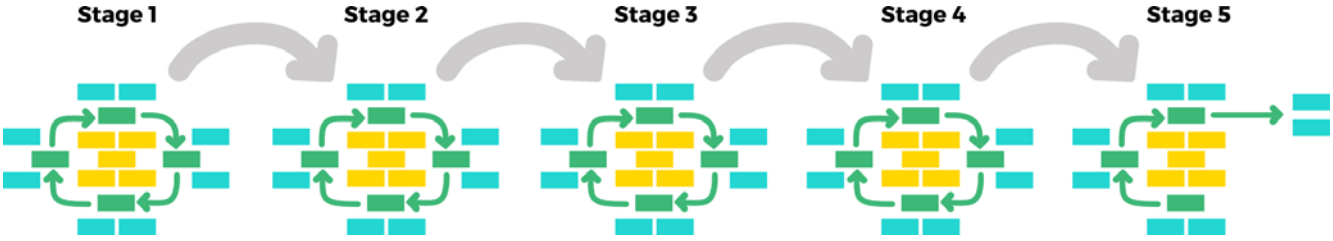
By contrast, a **spinout** is a specialised type of startup which is focused on commercialising an innovation owned by a university.

The spinout may or may not be led by current or former university staff. The crucial distinction here is that a spinout is taking something away from the university.

The founder wishes to use knowledge and **intellectual property rights** (IPR) owned by the university to form a company and enact their plan. In such cases, the permission of the university is required as the owner of the IP, and potentially as the employer of the founder.

Every university has their own approach to spinning out, and it's unlikely that any process will exactly match this one. The precise order doesn't matter because it's the lessons contained within that count. Our aim here is provide a map to all the different stages. Should you wish to follow it from inception to exit, focus on the most relevant stages, or simply understand how a section fits within the whole.

How the process is visualised in this handbook



Schematic flow diagram showing the cyclical nature of each stage
The process (green) draws on inputs (yellow) to yield outputs (blue). In each stage the process is repeated until all necessary outputs have been achieved, before moving onto the next stage.

Each of the five stages is treated as a distinct cycle for you to loop through as many times as necessary before you are ready to pass through to the next cycle. The reality is somewhat less clean in that you find yourself working concurrently on several sections at once.

You may even find yourself pursuing multiple cycles in something akin to a 60:30:10 workload split as you progress through them.

Each stage will start with a simplified process map, displaying just the inputs (yellow) and all processes (green). As we explain each process, we will highlight the most relevant inputs and the corresponding outputs (blue). At the end of each stage all processes will be combined to form a complete, detailed process map. Here, you'll also find a checklist to be completed before advancing to the next stage, as well as links to further reading, should you require more insight. These lists are indicative only and should be adapted to your needs.

Meet your squad

Starting a company from scratch can feel like the lonely endeavour of a single dedicated entrepreneur, but all successful projects have required a team effort. Here, we examine the three core groups that populate the spinout process, covering the expertise they bring and their motivation to get involved. It is from these individuals and their distinct (but broadly aligned) interests that you must form a team, or else the chances of success are minimal. To get them all aligned, first you need to understand their perspectives...

1. The aspiring academic entrepreneur

Our survey asked academics and entrepreneurs 'What are your own motivations for spinning out?'

The answers were varied, and collated into themes to create the wordcloud opposite.

Essential to any spinout is the academic team with entrepreneurial aspirations which forms the driving force behind the vison. They will be dedicating a significant amount of time to the project and expect to take a leadership role within it, in the short term at least. They will be considered the founding team, having spent years conducting the background research, and being there are the formation of the company. They'll likely consider this idea to be their pet project, and will be both protective and proud of it. The founding team is essential for both its knowledge of the innovation and as a workhorse; all the tasks in this handbook take time, and no one else is going to do it for you.

The founding team might be an individual and they could be at any career stage. In our programme's experience, the lead is often a post-doctoral researcher

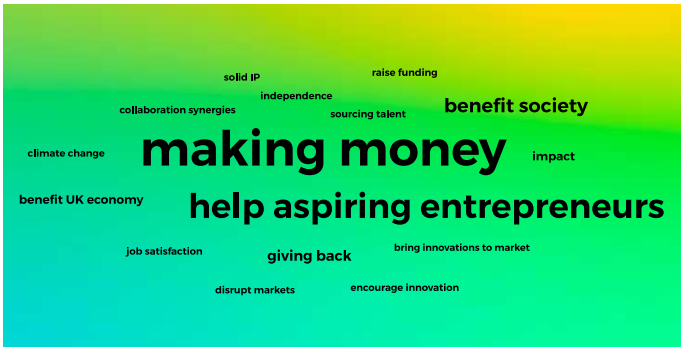
committing 100% of their time to the project, while a senior colleague or two remain predominantly in academia providing expert technical advice. In this handbook, we are assuming you are the leading academic, seeking to join the company as the CEO or CTO role. When we refer to 'entrepreneurial academics', we mean only those who see it as their main form of employment – at least for the short term.

Core positive motivations often include a desire to see their research put to good use, to make a profit from it, or to develop an exciting career. Be wary of those who are unwilling to dedicate significant time to the project and yet expect significant control and/or ownership in the company, or who are mostly motivated by improving their CV. This rarely works out well, as they don't commit the time necessary for success and there are better ways to improve a CV. As you will see later, this can cause problems, so it's good to tackle team members with poor motivations early on.

2. The investor

Our survey asked investors 'What are your own motivations for working with spin outs?'

The answers were varied, and collated into themes to create this wordcloud:



There are several types of investor who fund startups, all outlined below. For the purposes of this guide, 'investors' should be taken to mean angel investors, venture capitalists and corporate venture capitalists. We define these terms below, and highlight where they differ. Unsurprisingly, our survey showed investors have a consistent motivation behind their interactions with spinouts. 'Investing in them' and 'finding great companies that can be very large' pretty much covers it. Bear this in mind when working with any investor; mentoring an entrepreneur and working on a new technology may excite them, but one eye is always on the cash prize.

Business angels / Angel investors - These are wealthy people, or high net worth (HNW) individuals as they are known in the financial sector. They like to invest in early-stage businesses for the purpose of making a profit, hoping they can sell their investment portion for much more at a later stage. Often former entrepreneurs themselves, they may be experienced in starting and growing businesses. Angels take a personable approach, since this is a passion as much as a job. With many seeing involvement through mentoring as a form of 'giving back', be sure to find angels you are happy to work closely with.

Angels typically invest between £25,000 to £250,000 each, and sometimes come together to form a 'collective' and invest up to £1.5 million. If the company fails, they can lose all of this money, so naturally they will be cautious about who they give it to and will want a decent share of the company in return. They're often sector specific, seeking early stage companies with talented founders whose ideas excite them.

"I enjoy seeing people realise their potential and turn ideas into impactful businesses." – *Angel investor*

Venture capitalists (VC) – These are firms whose purpose is to invest at a large scale in what can be considered 'risky' companies, typically startups and SMEs. These companies are risky in the sense that they tend to focus on a new and unproven idea or technology, or an existing technology being used in a novel way. The risk is that there is often little or no proof people will pay for it. This risk means that the company may fail completely, and it's a venture into the unknown. It is the nature and level of risk that distinguishes Venture Capitalist from Private Equity, the latter of which invests in more established businesses with proven business models.

While an angel investor is often looking to help a company prove it has a good product and to make initial sales, a venture capitalist typically has their sights set on a grander and bolder vision of helping the company to expand. It's mostly a question of scale; VCs can make seven-figure investments with bigger growth expectations, and they want the company to grow significantly. This can be by at least tenfold. Finding potential returns on this scale requires them to take big risks. Venture capitalists are often sector-specific and only interested in companies that have reached a particular stage, which is generally a later stage than angels.

Corporate venture capitalists (CVC) – A CVC involves an established (usually multinational) company having an investment division. Naturally they will know their sector very well, and will normally stick to it. They often use investment to supplement their own research and development, particularly if their culture does not encourage risk-taking. Buying in ideas provides a quicker route to innovation, staying competitive and entering new markets.

3. The Technology Transfer Office

Our survey asked Technology Transfer Officers 'What are your own motivations for spinning out / working with spinouts?'

The answers were varied, and collated into themes to create this wordcloud:

The Technology Transfer Office (TTO) is responsible for protecting and commercialising intellectual property developed in their university, for social and economic benefit, domestically and internationally. It may be a university department, or a separate legal entity to the university. In either case, they typically control the commercial use of any and all intellectual property created by the university and its staff. This is a crucial first lesson for any aspiring academic entrepreneur – you do not own 'your' idea. You're an employee of a university that owns all your work output, and the TTO represents the university's interests in commercial matters. With ownership comes control, meaning any academic interested in spinning out must first acknowledge that step one is to obtain the consent of the Technology Transfer Office before setting out on the commercialisation journey. The quickest sure-fire way to start the relationship off on the wrong foot is to press ahead without their involvement.

It's important to note that there are some exceptions to this. Undergraduate students and sometimes PhD students may own the IPR they create. As a priority, check your contract of employment/enrolment and any relevant university policies to confirm IP ownership.

In this handbook, 'TTO' refers to both the department itself, and the individuals working for the Technology Transfer Office. The TTO's motivations are likely closely aligned with yours, such as delivering world-changing products and services from IP developed in academia, or attempting to improve society by getting new technology into use and into the market.

Remember that the TTO does this for a living, and can bring tremendous value to your venture. They are experts in guiding you through the spinout process. Some of their primary areas of expertise include:

1. **IPR in general, and particularly the patenting and licensing process**
2. **Market research**
3. **Business strategy**
4. **Commercialisation grants**
5. **Fundraising**
6. **Negotiation**

Don't be fearful of barriers that a TTO might put in your way – which they do have a reputation for! The processes or administrative burdens they highlight must be viewed in the context of what you are trying to do here, which is to build a company worth tens (if not hundreds) of millions of pounds by irrevocably transferring ownership of university IPR to a new company. This needs to be done right, and doing it right takes time.

Because you are essential to driving this venture forward, the TTO won't stand in your way if you demonstrate that you know what you're doing by being proactive, drawing upon their skills when necessary and keeping them informed. They may tell you what the barriers are, but they didn't create those barriers and their job is to help you overcome them (or to help you realise that you never will). Treat them as a teammate rather than a gatekeeper, and get them on your side so they can unlock certain doors.

For TTOs, spinning out is part of a risk/reward strategy. They don't always want to do it, as academics are often ill-equipped to build a business. The potential reward may well be high in financial returns and case studies, but the risk is high in that the potential to succeed is fairly low. They will likely look to safer commercialisation strategies instead as a first recourse, targeting the low-hanging fruit, which is precisely what TTOs are doing through licensing. There is sound logic to this approach, especially when operating at scale within tight budgetary constraints.

Unite your team

At its simplest, spinning out requires you to take these three disparate stakeholders groups with competing interests and turn them into a unified team. The sooner and more firmly all parties can align on the core aim of creating a successful spinout, the higher the chances of success. Securing such alignment should be your top priority, and respecting each other's motivations and input is a crucial first step.

The table below summarises the results from the survey, notably that the three stakeholders do not always see each other in a positive light. The extent to which perspectives are justified and who is correct is irrelevant; just be aware of tensions and conflicting motivations, and the need to tread carefully.

At its simplest, spinning out requires you to take these three disparate stakeholders groups with competing interests and turn them into a unified team. The sooner and more firmly all parties can align on the core aim of creating a successful spinout, the higher the chances of success. Securing such alignment should be your top priority, and respecting each other's motivations and input is a crucial first step.

How TTOs see investors	How investors see TTOs
TTOS respect the amount of work that investors put into the process, and the expertise and connections they can bring to a spinout. TTOs said that some investors do not grasp how early some of the research behind spinouts can be, and that they may have mismatched expectations around the exit and the founders' motivations.	Investors see TTOs as a good resource for academic founders, as well as having some good experiences with them on IP and licensing. Investors said that TTOs are slow and delay processes, that university rules are rigid and non-negotiable, and that outcomes are inconsistent.
How TTOs see academic entrepreneurs	**How academic entrepreneurs see TTOs**
TTOs experience academic entrepreneurs as fast-learners and hard workers, exhibiting great technical understanding and with good motivations. TTOs often work with academic entrepreneurs they see as having insufficient knowledge or even naïvety on the commercial side of things, as well as sometimes being risk averse and taking time.	Academic entrepreneurs expressed that when they have had good experiences it has been with TTOs who are experienced, have helped them in the early stages, provided useful contacts, and helped with IP or licensing. Respondents who have been involved in this space for a long time (eg. serial entrepreneurs) talked of having seen TTOs improve over time. Academic entrepreneurs expresed negative sentiments around the scope or capability of TTOs, the speed at which they can operate, and their risk-aversion. Many acknowledged that TTOs are often very resource-poor which is an important caveat to these factors.
How academic entrepreneurs see investors	**How investors see academic entrepreneurs**
Academic entrepreneurs appreciate that investors bring great expertise beyond money, and if they are familiar with, and have a good relationship with specific university TTOs it can help speed up the process. Academic entrepreneurs expressed how there are many types of investor which can be confusing, and some recount bad experiences around aggressive negotiations, misalignment of visions or motivations, and clashing personalities. Not all investors understand deep tech / early stage.	Investors appreciate the commitment and motivation of academic founders, describing them as fast-learners and hard workers with great technical understanding. They also had good experiences where the founder recognised their limitations and was willing to bring in business and commercial skills. Investors said academic entrepreneurs can be commercially naïve, and can lack the knowledge and skills relevant to the business side of spinning out.

Approaches to commercialisation

There are currently around 160 spinouts a year in the UK, which is about the same as the number of UK universities, although some produce several spinouts per year and others produce less than one a year. Although we would like the total figure to rise, in practical terms even a tenfold increase would mean spinouts are relatively rare considering there are 275,000 university researchers generating 62,000 university licensing deals. Outside of the university sector, over 810,000 new companies are registered in the UK every year. At the start of 2021 there were 5.6 million businesses in the UK, 5.5 million of which had fewer than 50 staff.

While spinouts are incredibly rare, they are also hardy. The oft-quoted statistic that 90% of companies fail in the first five years paints a pessimistic picture, but for spinouts the reverse is true, with nearly 90% making it to 5 years. That is of course predicated upon successfully navigating through the spinout process in the first place, which as will be seen later is where the majority fail. Taking the failures to launch into account, the failure rate of initial plans to spinout is fairly close to 90%. This is a difficult path to choose, but that's not to say you shouldn't take the risk.

For universities, licensing is by far the more common approach to commercialise research innovation. If your motivation to spinout is 'to get the technology used', then licensing is generally the best course of action (see caveat below). Licensing shouldn't be seen as a lesser route to be avoided, because it's the standard practice central to technology transfer. This is an area your TTO will have a lot of expertise in and is best placed to cover, so this handbook won't go into details as to the ins and outs of it. You should speak to the TTO if you require more information, and certainly as soon as any potential partners express an interest in licensing your innovation.

Licensing is particularly common in certain sectors, such as pharmaceuticals, manufacturing, automobiles, chemicals, and energy generation where both the set-up costs and expertise requirements are exceptionally high. It can create a steady income for the university and reward the staff involved, gaining global implementation quickly while minimising risk.

When is it appropriate to spinout?

There are many answers to this question, but ultimately only one matters: when it is the best way to get the technology into use. There are other ways to make money if that's your motivation, and other startups to get involved in if that excites you.

So what determines if it is the best way or not? What really counts is whether a great technology will be left unused if you don't make it happen. If licensing isn't practical, with little funding to support product development at universities, spinouts are the final option as a vehicle for raising the money you need to develop that technology to the point at which it can be marketed to customers.

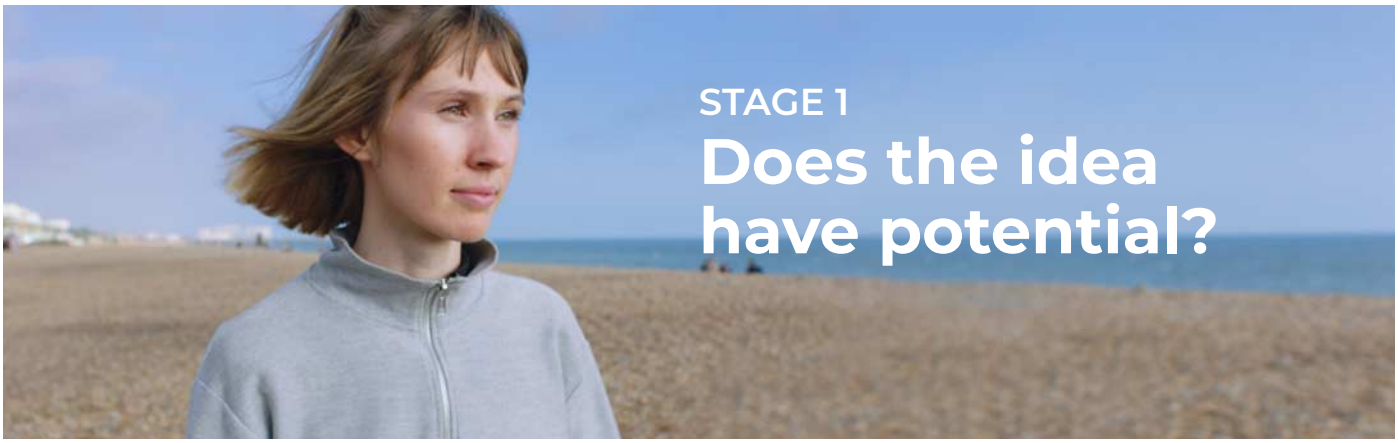
> **"The commercial opportunity and market should determine whether a spinout or license approach (or both) are used. The commercial development and success of the product or service in the marketplace determine the level of returns or rewards to university or individuals. Too little effort and emphasis is placed on supporting the downstream commercial enterprise post-license deal or post-formation of the spinout."**
> *Retired academic entrepreneur who has spun out or started up three companies*

If you're reading this wanting to know how to spinout, you're arguably asking the wrong question. Your aim should not be to spinout at all – instead, ask how the technology can be best put to use, as widely as possible. If an existing company can take on your tech and successfully deploy it, using their existing know-how, supply chain and resources, this relatively quick and easy option is almost certainly the best route to go down. If you find your TTO is resisting your desire to spinout, they're probably being practical rather than difficult.

Spinning out is more suited to when there are no existing suitable partners to license to (because those in the sector wouldn't know how to deliver the technology at scale), or if there is no pre-existing market to sell to (because the customer doesn't even know they want it yet). In these scenarios, you have to create the interest in it and create the ability to deliver the technology at scale.

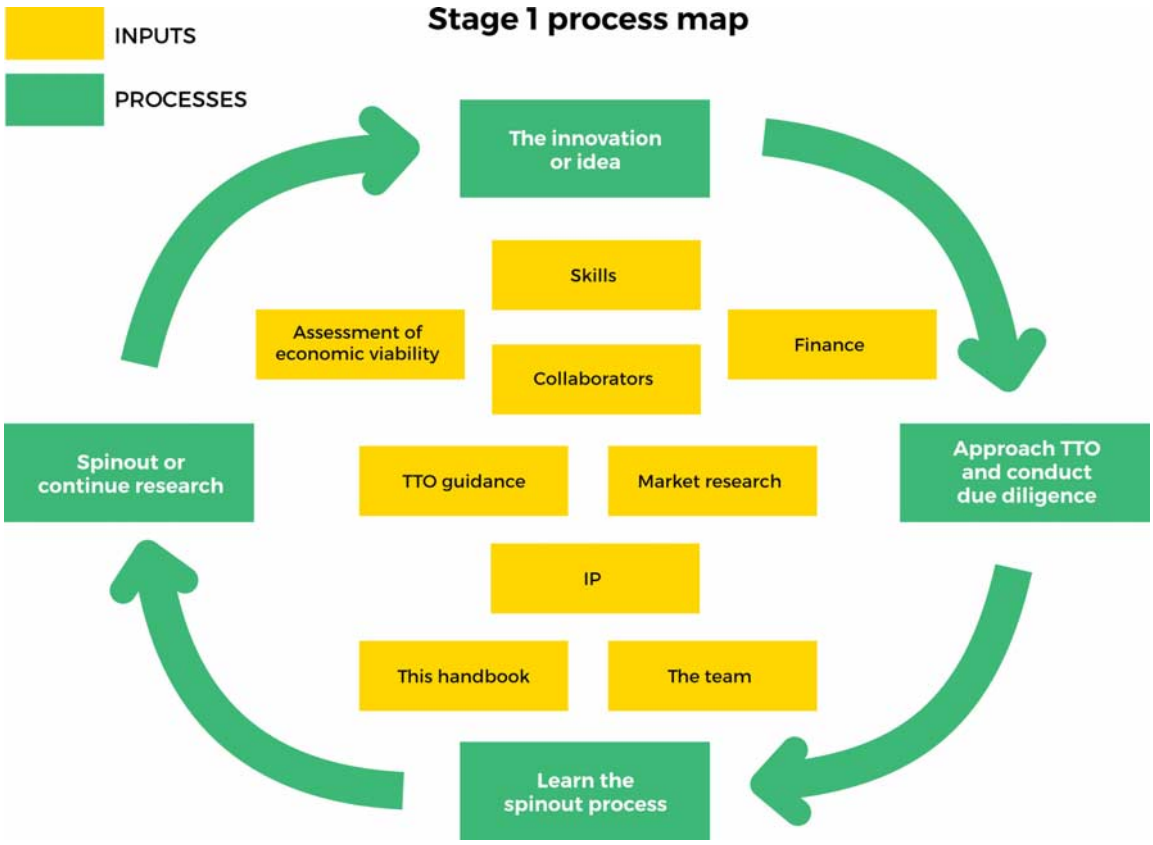
It might seem a counterintuitive stance for this guide to take, but spinning out really should be the option of last resort.

> **"There are three drivers for academic entrepreneurs in my experience: money, a deeply-held wish to see their product in the market, and self-glorification. The latter is to be avoided at all costs. The first two drivers are legitimate and powerful."**
> *Investor with over 40 years of investing experience, 20 years of which have been focused on university tech*



STAGE 1

Does the idea have potential?



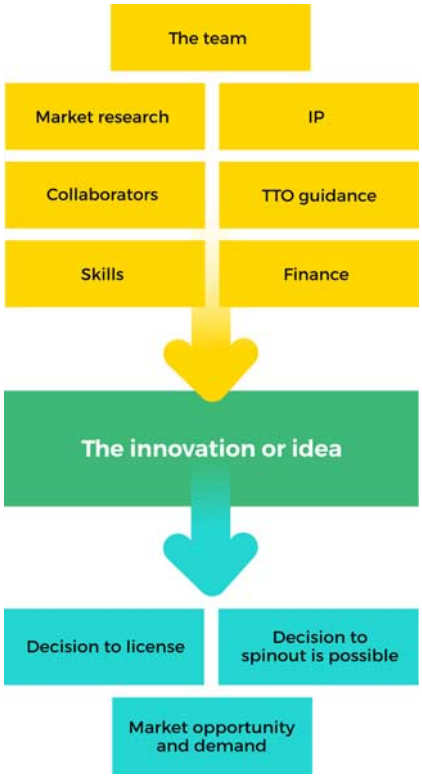
"Just because the science is brilliant, it does not mean it will be of commercial interest."
Academic entrepreneur, North of England

The innovation or idea

The list of essential ingredients for a successful spinout is long, but first and foremost comes the innovation itself, or the intellectual property (IP). This protectable invention / technology / software / device / know-how (from here on, we will use 'innovation' as a catch-all term) you have created will form the backbone of your spinout company.

However, it is also imperative that you consider to what extent the market wants it. In other words, will people pay for it? Just because it does something useful doesn't mean people will actually pay for it. A product that is objectively perfect for performing a particular task is worthless if nobody wants to do that task, or they already have access to existing methods that are perfectly satisfactory.

This leads to the second most important ingredient, and first point of consideration – the market opportunity. There must be a sustainable business opportunity that can generate a positive return on expenditure, so your first task is to do your market research to prove or disprove that it is wanted.



Does anyone want this product?

Known as market opportunity or market demand, this is a simple test for your innovation's economic feasibility. A high-level version of this should be conducted at the outset. A lot has been written about this elsewhere, so we'll just cover why it's important, rather than how to do it.

This desk-based research will entail collating some basic financial information to ascertain how much money is spent every year on this innovation, or more accurately, how much money is spent solving the problem your innovation solves. By doing this, you should see who is spending the money, who is receiving it, and if the market is growing. Combined, this indicates how big the market is, and how complicated it is.

Running the numbers

Once you have this data, you can consider if it is a business that might be worth pursuing. As you will be looking at this from at least a national level, those numbers might look large. But you need to start considering them through the correct lens, which is mostly a question of scale. As a basic rule of thumb, investors want to make ten times their return on any investment. Here's why.

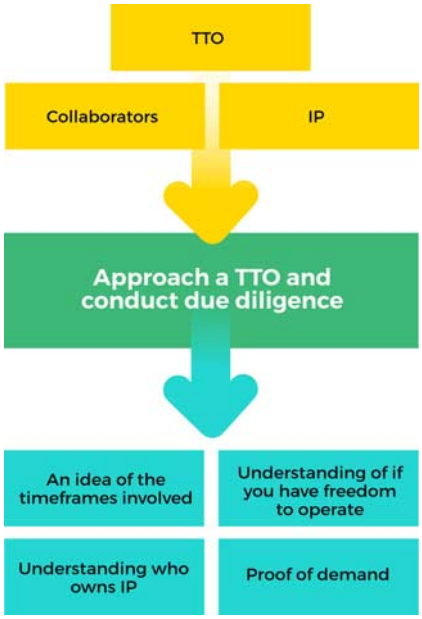
To take an overly simplistic example, say you need a £10 million investment to commercialise a medical device. You need to know if you can make a company worth £100 million, and you need to make a lot of profit each year to be worth £100 million. Your market research here should reveal if your **Total Addressable Market** (TAM)*, and more importantly your **Serviceable Obtainable Market** (SAM)* is large enough to support that kind of profit. This is all bearing in mind that you are unlikely to capture a high percentage of the market – certainly not at first.

Ask yourself if these cursory figures indicate that the market is big enough to justify the effort and resources involved. Realistically, can you secure enough of it? If not, you don't have an investable spinout. However, you have figured out you need a new plan before you've spent much time and money on the old one.

Approach a TTO

When you have concluded that there is the potential for a spinout company, you will need to check what support your university can provide through their Technology Transfer Office. Remember they own the IPR, so their approval is essential. No-one likes last minute requests from colleagues, and your lack of planning is not their problem, so approach them as early as possible so you can best fit around their workload and benefit from their advice.

In our Enterprise Fellowships programme, we asked TTOs how long ago they first heard about a proposed spinout. It's telling that in the last four application rounds, none of the successful applicants had approached the TTO with less than three months' notice prior to submission, with the average being just under 12 months.



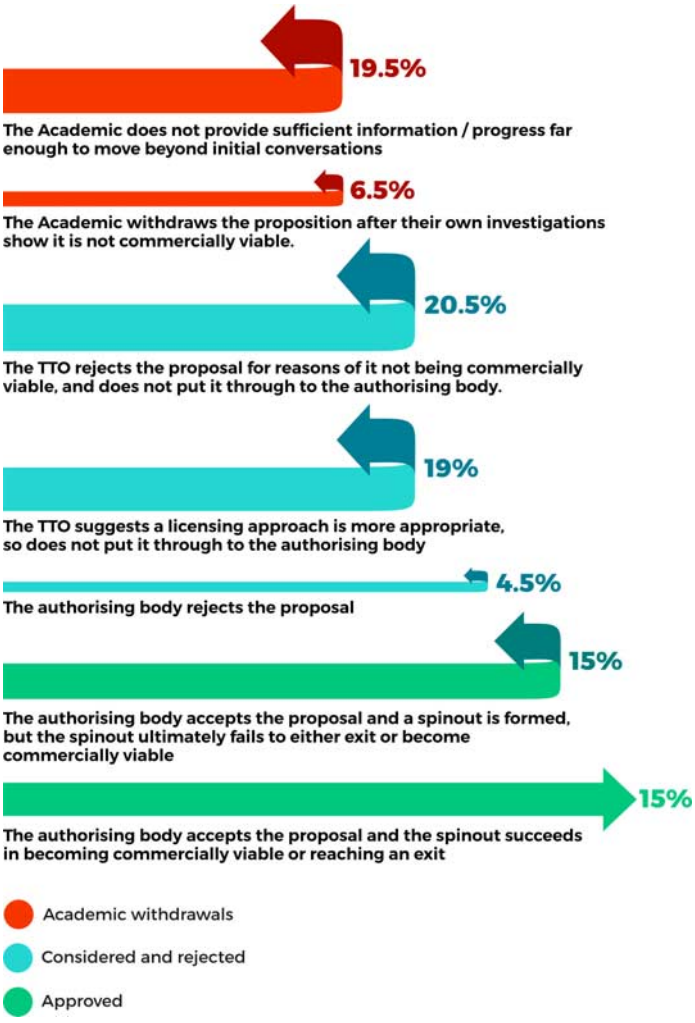
> **"My experience with TTOs was overall a good one. However, one must realise that the system is fairly slow and that there is a lack of communication and transparency. I do believe this is mainly caused by the fact that in general TTOs have a massive amount of work handling many patents and spinouts at the same time, and therefore they must prioritise time-wise."**
> *Academic entrepreneur spun out in 2021*

Even if you don't have a specific grant/customer opportunity in mind, you should get in touch as soon as you think you may want a spinout. Once contact is made, the TTO can explain the process and timeline ahead, and the help that's on offer.

The table (opposite) is taken from the survey responses as to what percentage of approaches made by academics to TTOs progress to each stage in their quest to spinout.

The table shows quite a lot that is worth noting:

- **Data from our survey reveals that TTOs receive 17 approaches a year on average, and only 15% (as shown in the table) actually successfully spin out. Bear this in mind as you work with your TTO through the process; they will be inherently sceptical at first, and understandably so.**
- **About 25% fail due to the Academic not pursuing it, vs 20% being rejected by the TTO, so they are not the primary blocker to progress as some people may believe.**



- **The majority of proposals to authorising bodies do get approved, implying the TTOs know what is required to get approval – work with them and take their advice on board.**
- **The TTO is more likely to put a proposal through to the authorizing committee than they are to suggest a licence approach, or to reject it entirely.**
- **Only half of those that are approved make good progress. This may seem like a poor success rate, but venture capitalists generally follow a 6:2:2 model. This means two successes, two failures, and six breakeven companies for every ten investments. A 50% success rate isn't bad, and success at that stage is out of their hands anyway.**

How long does this all take?

Subject to university procedure, on approaching your TTO you will be assigned a lead contact to handle your case. You will be working with this person a lot, so if you have a choice, do your research and pick someone who you can best work with on a personal level. Pick someone who has sector expertise the necessary experience to move at pace through the university's procedures. Some TTOs may refer you to external organisations where you can acquire additional support, such as InnovateUK, Royal Academy of Engineering, Royal Society of Edinburgh and PraxisAuril, the latter of whom have helpfully published many spinout templates and guides.

You can't rush the TTO through the process – they have limited resources and many demands on their time. From our survey, the average Tech Transfer Office has 25 employees, with overall sizes ranging from one staff member to 100. Some universities will have entire teams for licensing, legal and other functions – they deal with a range of commercialisation aspects beyond just spinouts and can develop significant expertise and efficient processes. However, 70% of TTO respondents have 12 or fewer employees, so resources may be spread thin with fewer experts for each area.

In total, 63% stated that they consider their TTO under-resourced or substantially under-resourced when asked about the technology transfer ambitions of their university. Keep this in mind when considering why some institutions may operate with a more generic policy. They cannot treat you as a special case and move you to the front of the queue, as it's simply not efficient.

TTO survey respondents stated that their teams handle an average of 17 approaches to spinout each year (with answers ranged between one and 80). When you consider how long spinning out takes (below), each TTO will be working on multiple concurrent proposals, so one of your first tasks is to find out what they need from you to ensure a smooth process. Make yours the one they prioritise by showing your progress through regular updates.

The number of approaches your TTO is dealing with should demonstrate that they are experienced. They will have seen much of the process before, so listen to them. They want good ideas and it's their job to find them, so if they seem reluctant to help you, find out why. If they are unconvinced by your idea, ask what actions or evidence would change their mind and then make that happen. As you will see in Stage 2, aspects like market research, IPR audits and patents are costly. They simply cannot afford to pursue every opportunity, and will select only the most promising ones.

To sum up, be realistic. Spinning out is a process typically taking at least two years, and even after that time you probably won't have anything more than a bare-bones company. This is why we insist applicants to our Enterprise Fellowships Programme work only on the spinout, so they can focus their efforts and work at pace.

Technical due diligence

From here on, we will cover a range of planning steps that must be undertaken to assess if you are ready to proceed further towards spinning out. The answer may well be a disappointing 'no', for any number of reasons. We cannot stress enough how important it is to listen to your TTO and other advisors who are looking to save you wasting weeks, months and years on chasing a dead end. But before we delve deeper, a quick word on IP.

What is IP and who owns it?

Intellectual Property, or IP as it is generally referred to, can be summed up as the innovative or novel output of intellectual or creative thought and effort. Note that 'output' means more than just patents. IP encompasses an expansive range of material which can be protected in a variety of ways. These protection rights allow the owner to control the use of (and thus the commercialisation of) said material for a fixed time period.

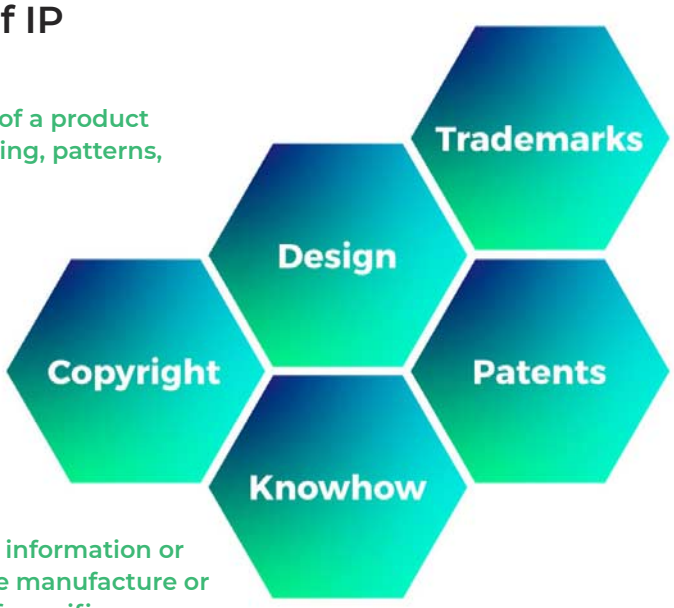
One of the primary benefits of working with your TTO is that they can help you protect your IP. Understanding patent strategy and writing quality patent applications is a skill that takes a lot of practice, and its importance cannot be overstated. As a founder, you will have a lot to do, so work with your TTO to share the burden. Not only are they well-versed in these processes, they'll also probably have a budget for it. This will be very helpful to you given the steep costs of filing.

The five types of IP

Design: the appearance of a product including shape, packaging, patterns, colours, decoration etc

Copyright: art, literature, photography, films, music, TV, web content, sound recordings or software code

Knowhow: any technical information or assistance relating to the manufacture or placing into operation of specific products. Can also apply to practical knowledge, skills or techniques required to achieve some practical end



Trademarks: similar to patents but relate specifically to products names, logos or jingles

Patents: these offer protection over your invention and allow you to take legal action against anyone who uses, sells or imports your invention without your permission

Who owns the IP?

While it may seem like a simple question that you're tempted to skip over, as you probably did the work yourself and so consider it your brainchild, it's not that simple. Firstly, you generally don't own anything – your employer owns it all. Your contract of employment almost certainly states that anything that results from your employment is owned by the university. This is not negotiable after the contract has been signed, and it's standard practice throughout all sectors of industry and public sector life.

If you only take one thing away from this section, understand that with ownership comes the power to determine who can use the IPR, and in what manner. In short, you need the university's permission to use the IPR, which is normally given by the TTO in the form of a licence.

As a side note, if the university does not own any of the IP rights (IPR), such as personal know-how, some would encourage you to leave the university and start up independently. However care must be taken to differentiate between the personal knowledge and know-how of an academic researcher e.g. for use in consultancy, and confidential know-how and data produced whilst in the employ of the university, the latter of which requires permission to utilise for commercial purposes (including filing derivative patents on such know-how or data). It is advised that you seek advice in such situations before progressing too far down either route (personal consultancy vs university spin-out).

So where does this leave you?

Firstly, talk to the TTO so they can fully determine the IPR situation by answering three questions:

1. **What constitutes the intellectual property (the five types listed above)?**
2. **Who contributed to it (yourself, other academics, support staff, funding bodies, corporate sponsors, other universities and any related prior research)?**
3. **Can it be protected – can you turn your idea into Intellectual Property which only you have a legal right to use or allow the use of?**

It's worth noting that the Intellectual Property Office states: "The prevailing view is that joint ownership of IP can be particularly problematic and, in general, is best avoided."

Do you have freedom to operate?

Could someone else get there first? Just because you haven't seen anyone else do it doesn't mean you're the first person to have had the thought and acted upon it. There may be pre-existing patents specifically covering it, or one worded loosely enough that their description more or less covers your idea even if that wasn't their intention. Either could stop your plans entirely. Don't make the mistake of assuming you're fine to proceed.

To answer this question, you will need the help of your TTO to scan for existing patents and activity. If all goes well, patent lawyers can do further checks. We discuss this in greater detail later in the IPR Audit and Freedom to Operate sections, but for now, an initial search utilising the guidance and aid of your TTO should suffice. Two good places to start your search include the British Library and the European Patent Office.

Learn the spinout process

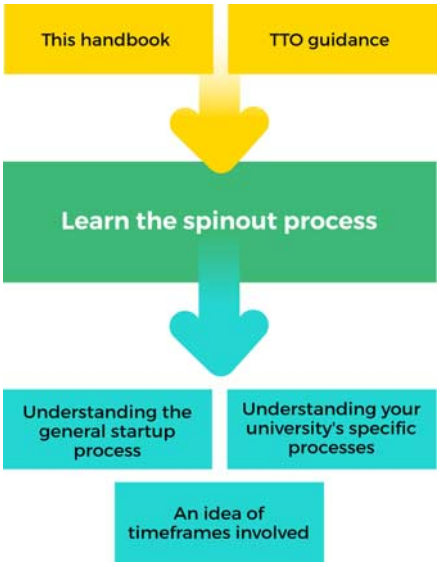
There are two aspects to understanding the spinout process. Firstly, you need to understand what the standard startup process is when there is no university involved. Next, you need to understand your specific university's process.

When the survey asked 'What do you think the barriers to spinning out are' 46% of investors, 41% of entrepreneurs and 35% of TTOs criticised the spinout process in some way, mainly for equity stakes or speed. So it's safe to conclude the perfect approach has not been discovered yet. However, consider that these responses are from those experienced in the process; if they haven't managed to get policies changed, it's unlikely that you'll be able to. Pick your battles wisely, since your goal is to create an effective team working with your TTO, not start an argument which can best be led by others.

Furthermore, irrespective of the strength of your arguments or possible position of influence, your calls to make the process easier will naturally be met with the scepticism of a vested party if you are in the process of spinning out. These policies exist for a reason (often one you haven't thought of), so consider if your time is better spent adapting to the rules or fighting them.

Breaking down barriers

When thinking about barriers to spinning out, a number of TTO employees (32%) and investors (16%) specifically referred to a lack of understanding or fear of the spinout process being a particular issue. Some of these relate to the mindset or abilities of those involved – e.g. unrealistic



expectations (of all three stakeholder groups), lack of ambition, confusion between groups. Others are related to the processes themselves, and issues were cited around complexity and lack of transparency.

"I have found that fostering a team approach, with transparency about the spin out transaction process and university requirements, is beneficial and can create a very positive environment. Challenges arise where that 'team approach' breaks down and there is no longer a willingness to constructively problem solve. This can be notable where there are diverse interests between an incoming investor, and the academic entrepreneurs feel caught in the middle."
TTO employee

How long each task takes

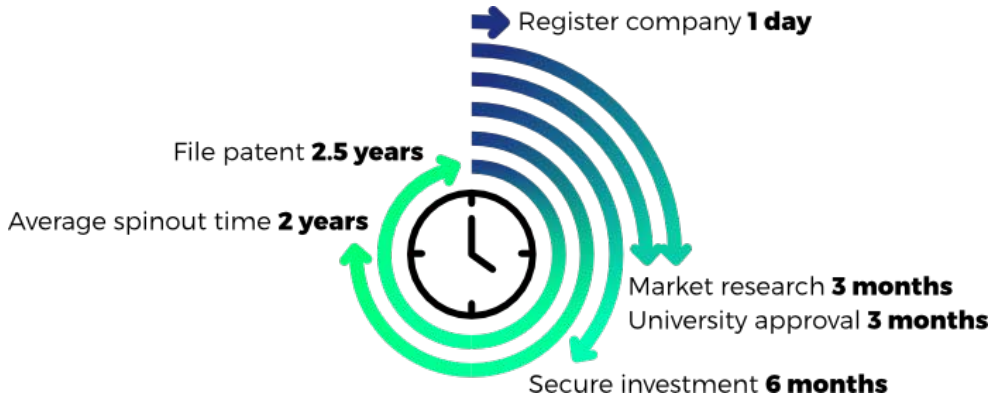
According to the UK Government's Companies House service, setting up a company 'costs £12 and can be paid by debit or credit card. Your company is usually registered within 24 hours.'

However, you should have gathered by now that it's rarely that straightforward. There are many moving parts and people involved, all ready to pose unforeseen challenges that will take longer to navigate than expected. Your TTO has been through all of this before, so listen to their guidance. A snapshot of timelines is given below, and there isn't much you can really do to shorten this:

A snapshot of timelines is given below, and there isn't much you can really do about this:

> **"[A key barrier to spinning out is] university staff not being empowered to make decisions or progress deals. Overworked, top-heavy management slows deal progress to an almost unworkable level, negating a key advantage of SMEs – speed of movement"**
> *Academic entrepreneur*

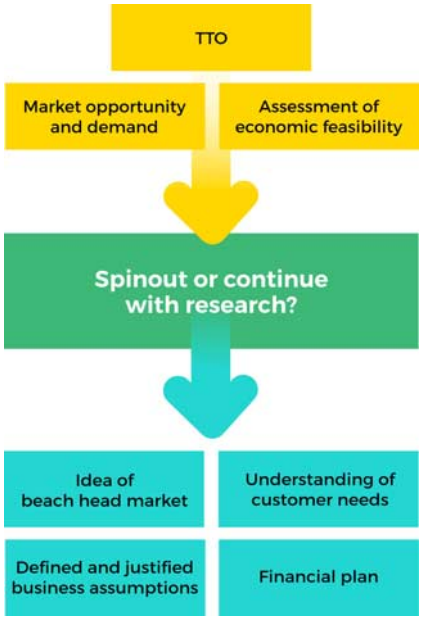
The quotation above represents a common gripe of academics – the process takes far too long. This won't be true for all instances, but it's not an isolated comment.



Spinout or continue with research?

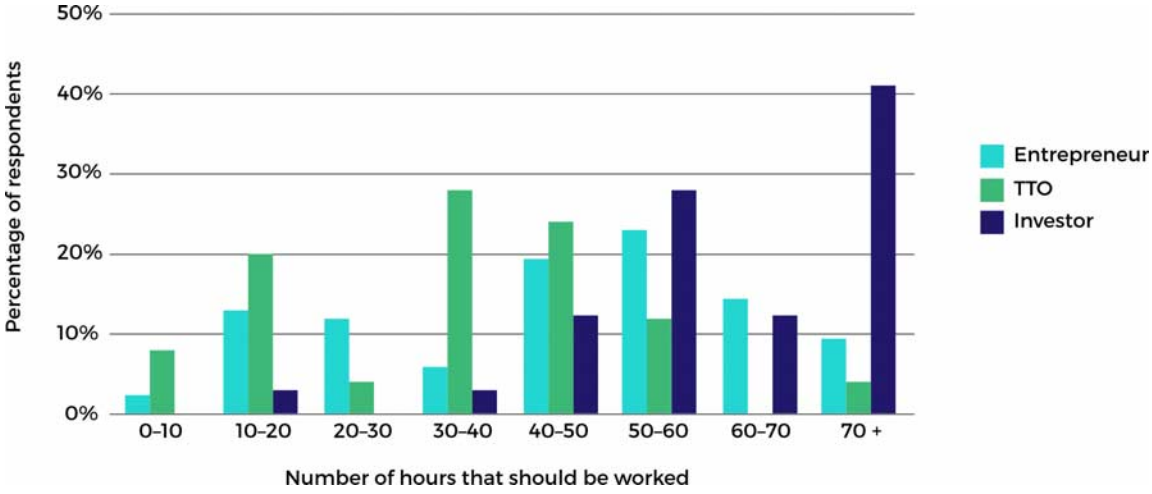
It's important to be aware that you can always spinout later. If the TTO suggests it's too early, don't take this as a never, or as a negative. Ask their advice on what might indicate it's the right time in your specific case, and build towards that. It's better to stay within the relative safety net of university employment for a little longer than to quit your day job too early.

Conversely, if your TTO suggests this is the right time, you personally may not be ready and able to commit. Reducing research and realigning your career towards commercialisation before understanding how you will remain funded is rarely a good idea. Commercialisation grants tend to be quite short, and we occasionally see our Enterprise Fellows complete their award without having secured a commercialisation grant or investment to continue the journey (we do warn them of this possibility). Check if the university has sabbatical options that you could put to good use; grants may be suitable to undertake the early stages of commercialisation alongside your research work.



Also consider if this is the right course of action for you. The table below shows the hours each stakeholder group believes you will need to work each week to make the spinout a success. If you are not ready to make this level of commitment right now, either it's not the right time, you are not the right person, or spinning out is not the right option. It is our belief that considering the workload involved and how competitive the commercial world is, as the lead you will need to work on the start-up full time, and this most likely involves leaving the university, at least for a short time. This is not a universally held opinion however:

Hours per week a founder is expected to work



Finance, skills and a team

The final two early assessments you need to make relate to your team and finances, since your company will require money to grow. You will probably already be familiar with grant funding, but investment is a different ball game. The securing of investment is covered in Stage 3. Your grant application may be considered by three reviewers for a few hours each, then an interview panel of three or four more reviewers, taking up two working days or thereabouts. However, the level of due diligence an investor will put you through is on a whole other level, and will be measured in weeks and months rather than hours.

Whatever the potential source of finance, it will not be forthcoming in the absence of a robust and credible business plan (covered in Stage 2). All stakeholders (and particularly investors) will expect to see your business led by a team with evidenced, relevant management experience in areas such as finance, marketing, sales and people management, ideally with previous startup experience. This will likely mean you need to let others lead where they have greater experience, or you need to gain that experience and training through commercialisation programmes. Knowing your own limitations and recognising where you/your business need help are key attributes of successful entrepreneurs. You're not expected to know it all, but you are expected to drive it forward and seek help as required.

Collaborators: understand who makes up your team

Just as a lack or absence of research experience on the team would make you question a research proposal, a lack of entrepreneurial experience is clearly a weakness for a startup. Diversify your team with a broad set of complementary skills, looking beyond your immediate set of researcher colleagues. You or the university may want to put in an external CEO from the beginning, or perhaps introduce one to mentor you. You should seriously consider which is the best approach in your case. People can learn to become a CEO, and the CEO they might want to bring in had to start somewhere, so why can't you take on the mantle?

Be realistic - are you going to be able to dedicate sufficient time to learning how to be a CEO? Are you well suited to this role? Do you even want to take on this kind of pressure, with people's careers relying on you? Are you comfortable removing yourself from the research and product development side of the business, or do you see yourself in more of a Chief Technology/Science Officer role?

"Starting a spinout just before a recession (early 2008) wasn't the best plan, but who could have foreseen it? And running the company as a temporary CEO through the pandemic last year wasn't particularly enjoyable. Academics aren't called academics for nothing. Entrepreneurship isn't for everyone, so know your limitations and the extent to which you're prepared to let others run with your idea."
Academic entrepreneur who has remained in academia alongside spinout

Born to lead?

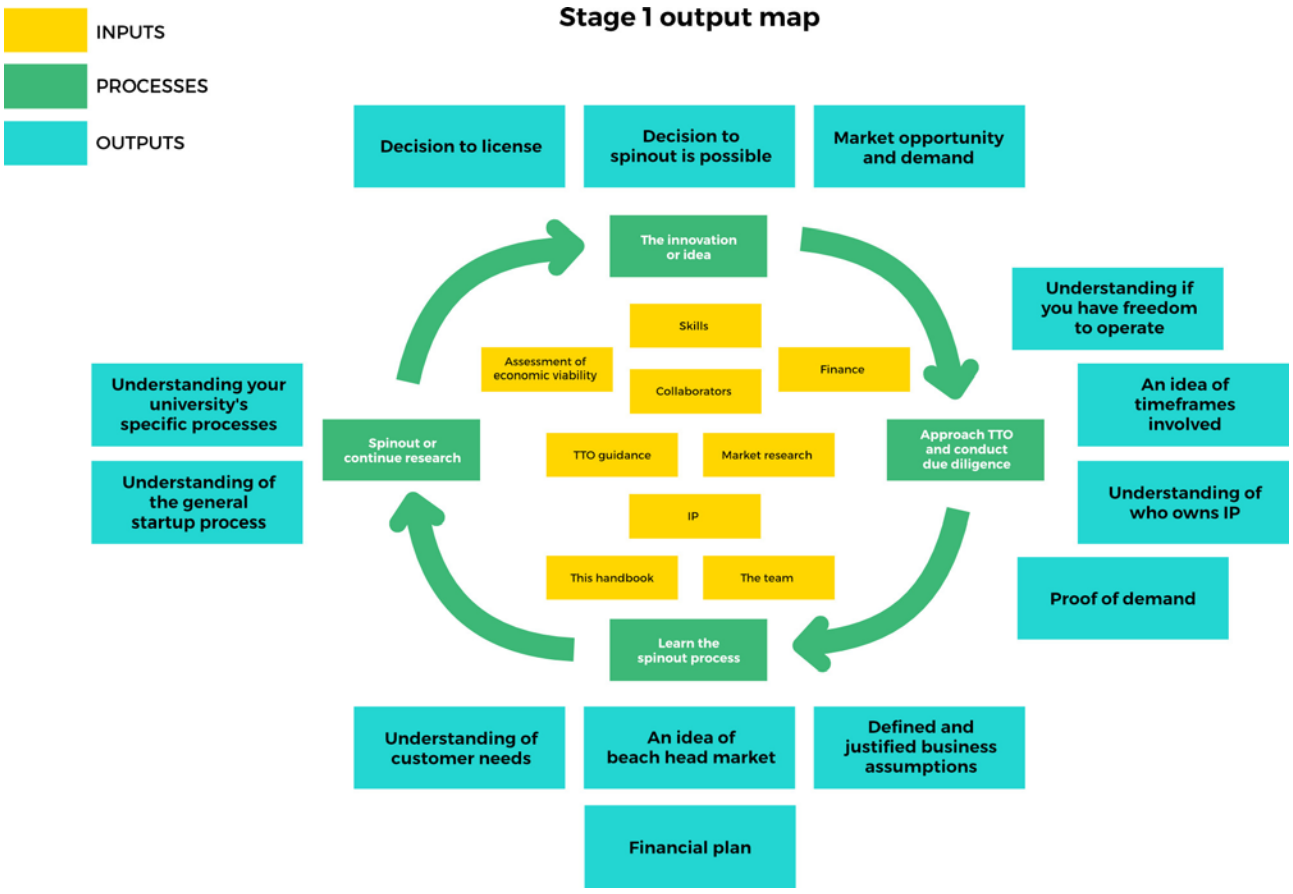
At the Academy, we are firm believers that entrepreneurs are made, not born. The skills necessary to become an entrepreneur can be learnt, hence why our Enterprise Fellowships programme focuses on enabling academics to become a CEO or COO. However, as with all roles in life, it also takes the right mindset to apply those skills effectively. Despite the focus of our programme, we don't believe academics becoming the CEO is the best way – it's simply one way.

Consider what you want and also your capabilities, weighing up the two to influence your choice of role rather than allowing this to be dictated to you by the TTO or investor. It might be the case that it's best to take a back seat for your first spinout, learn from it and lead on the next one. Or you could take it slow and take the time to learn the skills you need to be the CEO. Go after the role that best suits your ambitions.

Your TTO can help you begin to build your team, and you should use them to do so. You will already have a personal network of colleagues and students you have worked alongside to develop your business idea, but don't forget your funders may also be valuable resources for guidance, mentorship or networks.

"Trying to convey the skills, attitude, resilience and resourcefulness required to drive a start-up/spinout can be quite challenging. The importance of a whole team approach cannot be over-emphasised."
TTO employee

The entire stage 1 process – Does the idea have potential?



Stage 1 checklist

This list is indicative only and should be adapted both to your needs and the university's process.

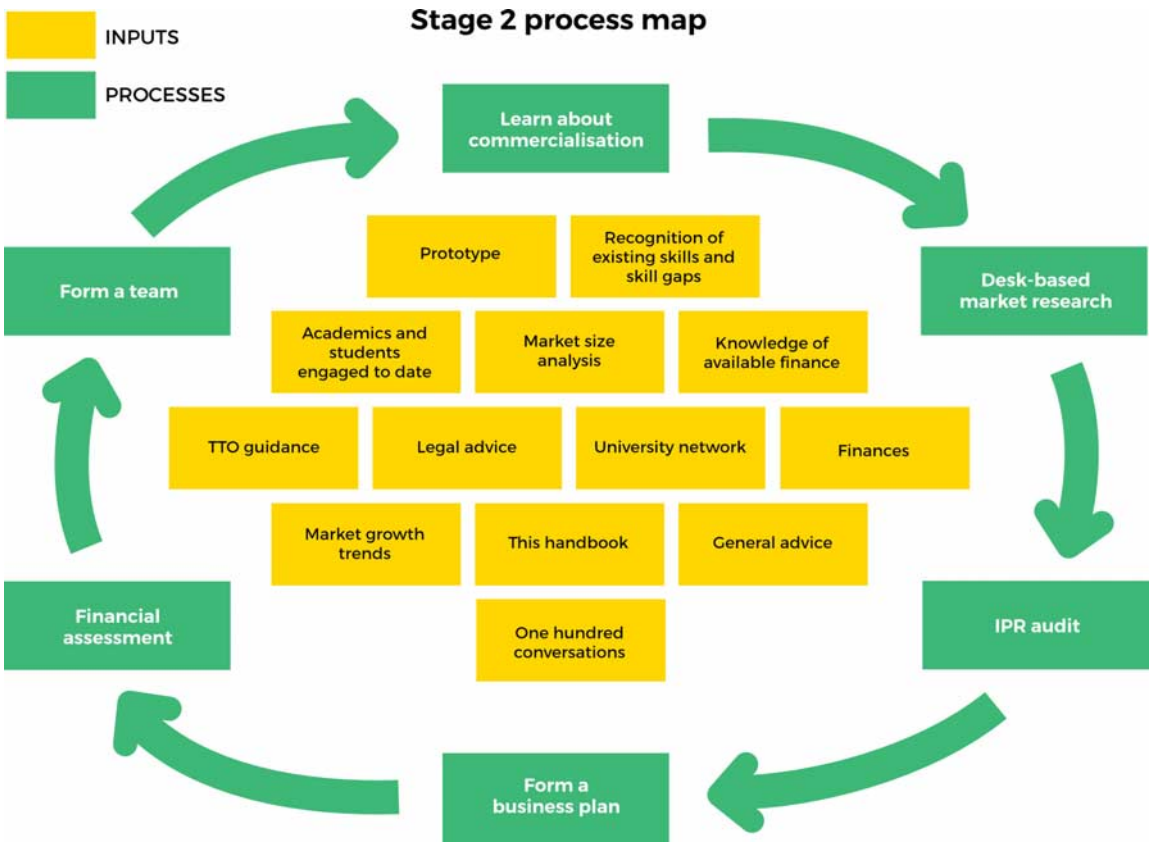
1) **Do you understand the spinout process?**
2) **Are you certain you wish to spinout, or would the licensing option be more sensible?**
3) **Have you approached your TTO to begin the process of checking due diligence?**
4) **Have you confirmed you legally hold the IP your innovation is built upon?**
5) **Are you certain you can commit enough available free time to your venture to ensure it becomes a commercial success?**
6) **What products and services will your company sell in the short, medium and long term**
7) **Do you have freedom to operate?**
8) **From where will your company source the products/services it will sell?**
9) **Is there a clear market demand for your product/innovation? Do you have an idea of your beachhead market?**
10) **Do you have a robust financial plan?**

Resources

For a full set of resource links, visit the online version of this handbook:
https://reports.raeng.org.uk/entrepreneurs-handbook/resources

STAGE 2

Should you try to spinout?



"Academics can learn to be entrepreneurs. Pushing them outside their comfort zone to perform customer discovery and understand stakeholder needs/pains does bring rewards to their original science."
TTO employee

Learn about commercialisation

Your whole spinout experience is going to be far smoother if you enter it equipped with the expectations and information you will require. One crucial understanding you'll need to accept is that unless your PhD happens to be in spinning out, you're not an expert anymore. In fact, you're a student once again. The other stakeholders know this, so what kind of student do you want to present yourself as?

You need to learn as much as you can about business in general, and the industry you will operate in specifically. Investors will expect to see a demonstrated understanding and desire from you to keep learning. If you're going to accept investment, you'll also need to understand that your shareholdings will be diluted. As the business grows, leading it will require different skillsets, so you may not remain the best person to lead it. As this happens, you will lose individual control of the business and its direction, which is something you must accept. Few individuals can lead a company from concept to multinational – this is not something to be feared, but a natural consequence of progression.

Ask yourself are you ready for this? This does not purely constitute an understanding of what processes and hurdles you will encounter along this journey, but also consideration of the impact this new direction of travel is going to have on you personally. It will also impact on your family, your friends, your life, and your career.

"Academics often underestimate the challenges of forming a spinout. They either assume that someone else will do all the heavy lifting for them, or they assume they can be a full-time academic AND a full-time CEO at the same time. They tend to overestimate their personal financial return, and also overestimate the value of the technology to the market. They do not understand quite how early their technology is."
TTO employee

Respondents to our survey indicate the career path of the academic founder often involves leaving the employment of the university to concentrate on the spinout, and then returning to academia at a later date.

Knowledge is power

When talking about experiences of interacting with academic entrepreneurs, the most common theme described by both investor respondents (56%) and TTO respondents (47%) related to insufficient knowledge or naiveté on the commercial side. Specific points in response were around an underappreciation of the time and effort the spinout process can take, thinking that good science will definitely make a good spinout, and not appreciating the amount of commitment and involvement required to achieve commercial success.

This wide range of experiences is also reflected in the rate at which different universities spin out. The ten most active universities are responsible for 54% of spinouts, so it's clear they will have more experienced teams and more developed processes, as well as good links to investors. There is not much an academic can do about this, but being aware of your university's track record may help guide you as to what preparation and learning may be necessary on your end.

"Some academics who are heavily advised will be very clued up, and will actively raise points with investor straight away about equity, IP negotiations etc. Other academics have literally no idea, waiting for months for the TTO to decide through the spinout process."
VC investor

Market research

This a complex and crucial topic, forming the linchpin of your business plan. There are essentially three ways to do this:

- **Desk-based research**
- **Get out of the office to talk to potential future customers**
- **Get feedback from existing customers.**

Through conducting market research you will learn who wants your innovation, why they want it and how badly, how to reach them, and how much all this will cost.

Desk-based research

Academics should be naturals at this task – taking an objective look at the markets you wish to enter is the first step in forming a business plan. You should seek to learn how big the market is, its growth rate, how complex it is, who the key players are and how they all interact. These interactions might be through trading money, goods, knowledge, data or services. This should indicate if the market is worth entering – and if so, how and where.

A large part of your market research will involve identifying your competition. Having strong competitors is not necessarily a bad thing as it shows there is a healthy market to enter, as long as you have a competitive edge over them that will enable you to take market share or grow the market by bringing new customers into it. There's a lot you can learn from your competition and how they operate; for example, is it normal to sell through distributors or direct to the customer? You may not understand why they operate the way they do at first, but there will be a reason, so figure it out and see if that applies to you too.

Crucially, you'll find out what price customers are willing to pay, which (if you know your costs of production) can be very informative as to whether you can compete on price. You may have to compete on another metric, such as quality, exclusivity, innovation, or service.

This process often leads to the creation of an ecosystem diagram, mapping out how all the key players in the ecosystem interact. Once assembled (it's never truly complete!), you should consider:

- **Is the market large enough to be worth the time and effort?**
- **Is a licensing model more appropriate (i.e. don't spinout)?**
- **Do you have a Unique Selling Point (USP) that will make you competitive? It may be disappointing to conclude the answer is 'no', but it's good to find this out now rather than a year down the line – the fail-fast mentality of startups.**
- **Where should you insert yourself into the market, and who is it best to sell to?**
- **Who should you partner with?**
- **How does this affect your exit strategy (see stage 5)?**

Get out of the office and talk to potential future customers (customer engagement)

Customer engagement is arguably the most important task any entrepreneur can undertake in the early stages of a company. Being such an important step, there are plenty of resources covering this, so we won't tell you how to do it – merely why you must. The first point to note is that rather unhelpfully, 'customer' does not mean 'customer' in the traditional sense, but rather anyone who might be affected by your product as it flows through the ecosystem.

Also, you are not trying to sell anything to anyone – you're simply trying to gather information. Often referred to as a 'getting out the office,' 'customer safari' or 'one hundred conversations,' customer engagement means all of these things. Get out of your office or lab, talk to everyone who could conceivably be impacted by your product, get them to introduce you to yet more people, and find out what they think and how they operate.

The customer is always right

Key to this process is understanding that, no matter how confident you are that you're correct about who wants your product and what they would do with it, your opinion is essentially meaningless. All that really matters is what the customer thinks. Rely on their insight and not your own. Does the product really solve a problem that the customer will pay to be solved?

You can't answer this question through theory alone. You have to go and talk to as many people as possible. It can be a discouraging grind cold-calling people for several months to get this data, but it's better to suffer through it for three months than to skip this process and dedicate the next few years to an idea for which no market actually exists. It's highly likely that this process will lead to your first pivot (change of plan). Indeed, not having made a single pivot off the back of this process will serve as a warning sign to future investors, so keep an open mind and learn from the feedback.

As one academic entrepreneur, whose company has raised just under £6 million since incorporation in 2015 through seven **investment rounds**, puts it: "Don't be afraid to pivot, as the initial target application can often be very different from what is successful."

> **"Some academics who are heavily advised will be very clued up, and will actively raise points with investor straight away about equity, IP negotiations etc. Other academics have literally no idea, waiting for months for the TTO to decide through the spinout process."**
> *VC investor*

Fail to prepare...

You must remain objective in assessing if there is true demand for this product. This is where the fabled 'fail fast' mentality comes in. Always have at the forefront of your mind that 90% of companies fail. Learning at this stage that the innovation will not work is actually a fantastic result. You have discovered nice and early that you should quit before you become too invested, without spending too much of your precious time and money. Time to celebrate a bullet dodged and move on to the next idea.

Don't just stick to your sector. Talk to everyone, as you never know where else your innovation could be of use. There is a lot happening in the world, and it would be foolish to think you identified the best option right from the outset. Conferences and startup events are good places to meet people from a wide range of sectors, be it as an exhibitor or delegate. You may get lots of enthusiastic suggestions as to how else to use your technology. Some will be wacky, but others may be insightful. Look out for trends and delve into those. By demonstrating you have explored these ideas already, you will impress the other stakeholders and build their confidence in you.

At worst, if you find no other suitable sectors, you can now reassure your TTO, investors and yourself that you have considered your options and you now know for sure Plan A is the best.

"One particular member of staff from my university TTO office was incredibly supportive in helping with the groundwork to set-up the company, e.g. patent filing, help with Innovate UK ICURe application, support through ICURe program, business plan writing to obtain initial spin out funding from Innovate."
Academic entrepreneur

"The ICURe programme is a good thing in that it's opening up potential spinout founders and bringing them together. The more these folks are socialising and doing useful customer discovery programmes, the less likely they are to be cut bad deals. Unis / TTOs promoting these are doing a good thing."
VC investor

Supportive resources

Fortunately, there are great resources available to help you with this stage of your journey. There is a clear trend of best applicants to our Enterprise Fellowship programme having done this in one form or another, often through ICURe. Your existing network is a good place to start; as a researcher, you may find people are happy to chat to you about their problems as they are less likely to perceive this as a sales session – because it isn't. Your TTO will also be able to guide you through this process, and many entrepreneurship courses will cover this as core content.

The output from this market research is being able to demonstrate 'product-market-fit.' As can be seen below, the need for a good product market fit is one of the few areas where all stakeholders align, and is key to gaining their confidence. Information gathering is a crucial step.

"Really try to understand what it will take for somebody to buy your technology. Quantify the value/benefit and think carefully about the cost and the risks. Make sure there is a good product-market fit. A lot of spinouts fail because of a lack of a really compelling value proposition."
Academic Entrepreneur, incorporated 2011 with four investment rounds worth over £2 million

"My first spin out had a good idea but it turned out not to be needed in a product. The technology is less important than identifying the appropriate gap in the market (and the product to fit it). Also, I'd assumed the technology was the most important element, but it's only one element (and probably not the most important one). You really do need a good business model, a good idea of what the market really needs and a good commercial/sales team."
Academic entrepreneur, ten year-old spinout with three investment rounds of over £2.9 million

"I think there are some academic PIs who think that the sheer brilliance of the technology is enough to form a successful company, and don't like the fact that the market opportunity is questioned/needs to be validated. I'm seeing fewer of these types of individuals, but there are still a minority."
TTO employee

Identify a beachhead market - your first target

When you're satisfied with your market research, you will need to identify your beachhead. This is a huge challenge in itself, and one covered in detail elsewhere, so we'll keep this section brief. What you're seeking is a balance between a market large enough to be of sufficient value to attract investors and be worth your effort in pursuing, without biting off more that you can chew.

The best advice here is to target a customer group where your product or service can have a real difference – a group where what you offer can become a must-have. You're a startup with no reputation, so the people that buy from you will be those willing to take a risk because they believe it will make a big difference to them. You want quick (and relatively easy) sales, without the need for an expensive marketing campaign to reach them. On top of this, you will need to identify a group that can act as a springboard to something else, so do they give you a foothold in the market from which you can sell your second (more profitable) product? Or do they give you time to refine your product so it has greater appeal to the masses? The first market is not the only one out there, and not necessarily the best or biggest – so where do you go from there?

Off the back of identifying the first market, you may wish to pursue **proof of concept** grants to fund the initial development and testing or the market, building on what you've learned so far through customer

feedback. Your TTO will be able to help identify suitable grants. Securing your first customer, while exciting, does not demonstrate you have found your beachhead market. You need repeat sales, not outliers, unless public sector departments are large enough to act as a market in themselves.

Sometimes the initial market isn't that obvious, particularly when it lies beyond your field of research. Further independent and in-depth market research may be commissioned following this preliminary stage, and you should look to your TTO to access funds to support this. All stakeholders will probably have seen similar innovations before, and will likely have suggestions as to suitable markets. Reach out to the network and explore the avenues suggested.

You may also find that an initial customer greatly focuses the minds of all involved and speeds up the whole process –any customer will want a company to contract with, and a bank account to pay into. If you find negotiations with the university or investor have stalled, then securing a customer can break the cycle by providing evidence it's a desired product and now is the time to act.

IPR audit

Here, you assess what you have invented, and if anyone else got there first. The aim is to de-risk the startup by securing your access to the market, and to develop your 'IPR strategy'. You really need to get this right, and the results may surprise you. Your idea may also not be as novel as you think. While discovering your startup is a non-starter may be demoralising, it's good to discover this sooner rather than later, saving yourself effort, time and money – following a fail-fast mentality.

If you have investigated this alongside your TTO earlier when assuring yourself you had freedom to operate, you should be well placed to progress this swiftly. At this stage, you are simply checking whether what you found earlier remains true, ensuring you have complete ownership of your IP and that nobody else has started operating in your space since you last checked. This is not a one-off process; like many stages in your spinout journey, it is cyclical. You will have to return to this work at various stages as more information materialises.

"Too many times I've had PhD students come to me with inventions ... only for me to discover (sometimes within mere minutes) that someone else invented the technology 20, 30, 50 years earlier ... In other words, within minutes I've shown them they wasted three years of their lives on pointless research – something we need to handle carefully. In the worst case ... one of the very first patents filed, in the 17th century, covered substantially the same work. The only real difference was the research tools the modern academic had available."
TTO employee

Patent-ly obvious

At this stage, you will need to commission the services of patent attorneys to conduct a patent search and advise on filing your own patents. Your TTO will likely assist here with financial support and in gathering information. Any public disclosure of your technology, including presentations at academic conferences, can preclude patenting, so resist normal dissemination activities. Publications and seminars can render your work unprotectable. We have even encountered a university mistakenly publishing a PhD thesis before the patent had been filed, so avoid costly mistakes by letting others know of your intentions.

The patent process is expensive and time consuming. In our experience it can take up to three years and cost

as much as £15,000 to get a patent filed, and then you have renewal fees of £500 a year for potentially the next 20 years, plus the costs of patenting in other legal jurisdictions. Considering how many researchers each university employs, this is a source of substantial cost to the TTO's budget. This partly explains why TTOs can appear reluctant to file all ideas, and why during the spinout process they request patent costs to be covered. They want to recoup some of these costs where practical.

Not everything needs to be patented, and there are other forms of protection beyond patents, such as **copyright** and **trademark**. Your IPR strategy should encompass these to lesser or greater extents, as the aim here is not to make it impossible to replicate your innovation, but to make it economically unfeasible to do so. Each layer of defence costs money to overcome. Under this strategy, there is no point in a competitor starting up in the parts of the world where it is unprotected, as those markets offer too little profit to justify the effort required vs the risk of failure.

The twenty years of protection a patent provides may sound long-term but companies can last for many decades, so you may not want to patent everything at once. It can be sensible to patent different aspects of the innovation incrementally, extending the period of effective protection. Also note that shorter, more focused patents are cheaper to translate into other languages, should you seek protection in multiple regions. Lastly, make sure the ownership of any IP created by contractors is clearly articulated; you don't want to find out a contractor owns critical aspects of the work and can hold it to ransom.

"Most of the activities we invest in have a major component of computing – impossible to patent. Value rests in the ability to be the first."
Angel investor

A word of caution if you're looking to reduce costs, or if your TTO can't help: don't try to write it yourself. Professionals will be quicker and better at it, even if they do charge, and your time can be better spent elsewhere. Many patent lawyers specialise in startups and offer payment plans accordingly. In part, their aim is to help you grow so that you become a long-term customer, and their interests align with yours.

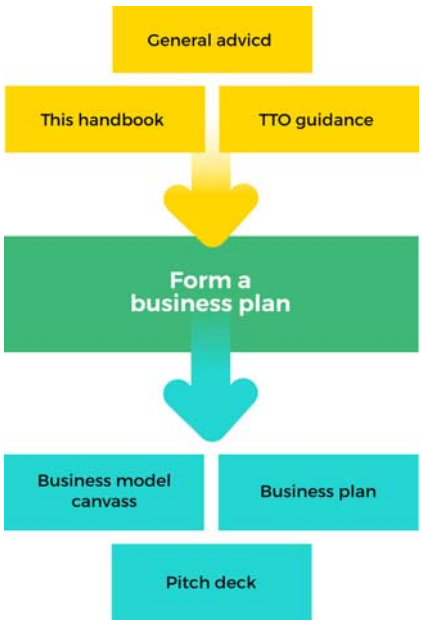
To conclude, the end goal here is not to 'get a patent,' but rather to 'develop an IP strategy,' of which patents are just one element.

Create a business plan

Everything you've learned to date must now be clearly and succinctly articulated in a business plan that will garner TTO approval, entice talent to join your team and eventually convince investors to fund you.

Here are some key points to remember:

1. **Keep it short.**
2. **This is not an academic publication, so you don't need references for every point.**
3. **Have a clear list of objectives and milestones that build towards an end goal.**
4. **Keep it simple. Investors don't necessarily have specialist knowledge, so you should portray your product as a solution that meets an unmet need.**
5. **It will take time. You've done a lot of work to get here, and putting pen to paper will help set things straight in your own head.**
6. **Own this plan. Seek advice, but you must write this yourself and know it inside out, as you will be quizzed on it.**



Business plans come in many forms, with a style and emphasis that suits your situation. Below is a suggested structure, and the questions are non-exhaustive indication of indication of content:

Suggested business plan structure

1) Executive Summary

A persuasive one-page summary of the key points for your investors. Potential investors may read only the executive summary, so make sure that it's succinct and lifts the key points from the rest of the plan.

2) Market Analysis

What need will your product address? How is it better, cheaper or faster than existing solutions? What is the competitive landscape? Is the addressable market big enough? Is it controlled by a few players? Is there a healthy growth trend?

3) Market Access

How will the target market learn about your product? Which sales and distribution channels will you use? How many prospective customers or key players have you spoken to?

4) Technology Plan and Product Development Strategy

What are the technical or R&D challenges to bringing the technology to market, and how will they be addressed? Does your tech lend itself to opportunities for multiple products or platforms?

5) Business Model

How will the model be actioned in terms of building product scale, delivering services, or licensing? How will you realise cash from the business or achieve an exit for investors? How do you plan to exit?

6) Corporate Governance Plan

The framework for the way the business operates. What is the corporate governance and board structure? Where do you get professional advice (legal, finance etc)?

7) IP Strategy

The intellectual property is likely to be your main (or only) asset. How are you going to protect it, in both the short term and long term? Is broad patent coverage possible? Are there background patents owned by others?

8) People Plan

What skills do you need and how will you find them? Who is on board and what is their track record? Set out the skills and experience of key people, including short CVs in the plan's appendix.

9) Risk Analysis

Explore best-case and worst-case scenarios. Look at what the main milestones will be, and how you will adjust if they are missed for any reason. Explore when you will need further funding. Investors will certainly ask these questions, and will be pleased if you address them.

10) Financial and Operating Plan

Well thought-out and clearly presented financials are essential. You should usually include at least a three-year summary of the profit and loss account, balance sheet and cash flow projections. This should set out a month-by-month plan for the first year; quarterly thereafter. Show where the money will be spent. Say something about the likely timescales for returns on investment and the method of selling shares (the exit). This is how investors make their returns. Can they expect a sufficient multiple on their initial investment? What market share can be obtained? Is it worth the effort?

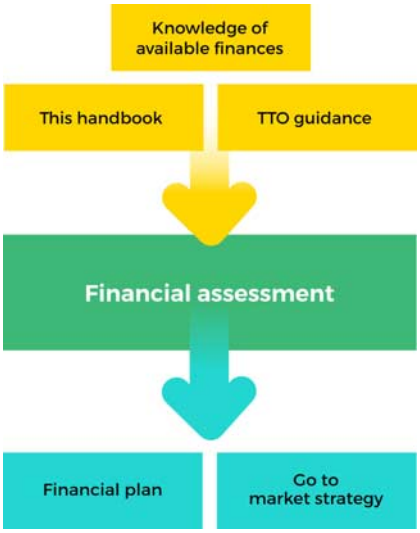
Financial assessment

Go-to market strategy

Aspiring academic entrepreneurs often overlook the fact that customers do not magically appear out of thin air by virtue of the product existing. You need a 'go to market strategy' – a plan to acquire customers. Many routes to customers exist, but not all exist in all sectors, so your earlier market research will have helped narrow down what's right for you, and what's right for your customer.

The main considerations here are the number of customers any route can reach (or size of the market), the cost involved in reaching them, the ease of implementation, and overall profitability. The favoured tactic is to go with whatever is easiest and cheapest to pull off – the 'low-hanging fruit' approach. This allows you to confirm if people really do want your product, how much they will pay, what needs changing about the product and does the business look like it will be profitable. If the answer to this last question is a resounding 'yes', then you now have a potential steady income stream that will fund the targeting of bigger and more profitable markets. Alternatively, you may have the data to convince investors to give you the funds to do so.

Strategies we often see through our programme which should generally be avoided early on (as you simply don't have the budget) include:



"Don't be afraid to pivot, as the initial target application can often be very different from what is successful."
Academic entrepreneur, seven year-old spinout with over £5.9 million secured from seven investment rounds

Selling to the public sector

Although they often have huge budgets and a clear need for the product, they also have many competing demands for that budget, can be very slow to adopt new technology, and have long procurement processes. We normally see this with aims to sell to the NHS and universities.

Lifestyle products

Where you want customers to interact with one another and create a buzz around using the product and customer referrals, such as with many wearables. This requires extensive advertising to obtain critical mass before they can start making a profit, which is very expensive.

Manufacture it and sell direct

The profit may well be higher but factories are expensive, taking time and skill to set up and get going. Asking an investor for such funds will put them off when it's far better to outsource production in the first instance, so your startup costs are more reasonable.

Custom installation

Popular with software firms, customising the software for each sale to provide a bespoke service is a time-consuming process, massively slowing the potential for growth and risking future technical debt as the offering evolves.

Sources of early-stage finance

For researchers used to relying on grant funding, this would seem the logical place to start for commercialisation funding. However, there are national and international rules that limit such state aid, so you must look elsewhere. The main source of funding is investors, and a snapshot of views are given below, along with a summary of other funding sources.

Our survey found issues surrounding investment and early-stage funding were the most frequently mentioned barrier to spinning out for TTO respondents (56%), and the third most frequent for academic entrepreneurs (25%). It's highly likely you will see raising finance as a significant challenge to spinning out. Conversely (and maybe inevitably for being so embedded in the target group), fewer investors rated accessing equity funding as a barrier (19%).

TTO responses focused on early investment and seed investment, and how this can have knock-on effects on a company's ability to take on opportunities and grow. *"Seed investment for often very complex technologies is not a particularly well served area for the UK outside the golden triangle. Of the last three spinouts I have supported, only one has received significant UK investment; the rest have all had to go to the States / Europe / China to find people with both the technical understanding and the risk appetite for the project."*

Mind the gap

Academic entrepreneur responses also mentioned both grant funding and investment. Responses had some praise for Innovate UK, and recognition of the 'valley of death' phenomenon. Two views are given below:

"From my personal view, the biggest issue is the enormous funding gap between the fundamental research that my research group does (e.g. funded by EPSRC) and having something that commercial partners might want to invest in. All my spinout ideas are in chemical/chemical engineering hardware. This takes money and time to get from the lab to a prototype, but there is very little funding or patience / appetite to fund such activity."

"In deep-tech... there is a long waiting time before revenues. And in this phase, the boundary between university posts and start-up posts is a bit blurred... and advancement is only covered by grants, as even angels look at the tech as a punt. We need more high-risk, high-gain grants accessible..."

Two respondents talked about early stage funding improving, one in terms of improvements having been seen over the past year, and another stating that *"Seed funding is a barrier but becoming less so, especially in areas with good investor networks such as Cambridge, Oxford and London."*

A third respondent acknowledged London being well catered for, despite gaps in other regions of the UK.

Funding can come from a bewildering variety of places, so to help you narrow down who or what you should be targeting, we have compiled the table blow.

Note that all finance providers are different, so these are not hard and fast rules, and we haven't listed them all:

Some sources of funding

Research grants

While specifically not aimed at commercialisation, well targeted research grants can answer some questions in the early stages of your journey and you should seek to make best use of the research funding that is available to universities. You'll probably be familiar with these commonplace grants already – they are often essential to getting started, and don't dilute your equity, so they're a great source of funding for as long as the work intended fits their remit.

Proof of concept grants (PoC)

The first step away from pure research towards commercialisation, if research enables you to generate the innovation, PoC funding enables you to explore if it is technically viable or not. These grants fund initial feasibility studies, basic prototyping and IP protection.

Commercialisation grants

The next stage on from PoC, commercialisation grants focus on how to commercialise the innovation and product development. Relatively few academics have commercial experience, so it's easier to stand out as being more informed than your peers. Even as a beginner, if you demonstrate good theoretical commercial knowledge and a genuine desire to learn, you can do well here. That is one of the main factors we test for in our Enterprise Fellowship interviews.

Your savings

Here, you invest/live off your own funds until you secure customers. It's more applicable to startups generally than university spinouts, but you will encounter this method in most advice on starting a business. We've included it here for completeness, but we're not suggesting you follow this method.

Friends, family, and fools

See 'Your savings', but you either borrow from them, or sell some of the company to them. This method should be approached with caution. As most companies fail, it can easily sour a relationship. We've included it here for completeness, but we're not suggesting you follow this method.

Sales

Going directly to customers gives the benefit of an income unaffected by the repayment of debt and equity financing. You could sell prototypes or evaluation kits, or potentially draw up a Joint Development Agreement (JDA) whereby a corporate funds your product development activities as it solves their problem. Sales and JDAs can be very useful in validating your technology, but JDAs can have a drawback in that the corporate partner may request exclusive rights to commercialisation, or demand a lower price.

This is a difficult balancing act; you likely need the industrial relationships to provide funds and validate the technology, but exclusivity deals can greatly reduce the value of your company, so approach them with caution. A good general rule is that any external discussions are carried out under a Non-Disclosure Agreement, and this would certainly apply here. As for price, avoid selling at a heavy discount, which does nothing to prove customers will pay a reasonable price.

Banks and other financial institutions

Financing from financial institutions typically takes one of two forms: business overdrafts or business loans. Overdrafts will be negotiated based on cashflow forecasts. These are a flexible (but generally quite expensive) way of covering short-term fluctuations in finance caused by the misalignment of timings with cash coming in and out of the business. Loans will be given for a set period, with a fixed or variable interest rate. Note that any lender may look to secure their loan against assets including your home. It's best to use these only to fund specific substantial purchases, such as premises or equally large investments.

External grants and loans

A variety of government- and charity-funded awards are available in the UK that target the gap between the end of research and the start of commercialisation. Some types of grant funding can be deployed within a spinout to extend the period before you need to find your next funding round, or to progress parallel development projects faster than you would otherwise be able to. Grants that require a consortium to bid can also be an opportunity for you to approach and build relationships with possible customers and suppliers, without either side having to make a commercial commitment.

Watch out for grants whose requirements shift your focus away from your core products and markets. Securing this non-dilutive equity could be very damaging in terms of making quick progress.

Consulting/side jobs

Consultancy can be a great way to bring in funds while your company grows. Watch out that it doesn't absorb too much of your time, while your main innovation gathers dust in the corner. You could consider separating out the consultancy work from the main activity of developing your spinout, by recruiting a team to deliver the consultancy work.

Business angels

As covered in the introduction, Business Angels are successful, wealthy individuals who have often acquired their money through business pursuits. They generally invest in early-stage ventures (e.g. pre-seed and seed) in exchange for equity.

"There are many different types of investors. Angels are my favourite. They were entrepreneurs themselves so they have been there, done that, and can really understand what a first-time entrepreneur is going through. They are very invested in all phases of the business. Other investors are a bit more passive, but can be very constructive and helpful in matters related to fundraise and exits."
Academic entrepreneur, spinout over five years old with two fundraisings securing over £5.3 million

Things to beware of with angel investors:

- Anyone looking to immediately take back their investment as management fees.
- Situations where many investors take tiny stakes in the business. This can create a complex shareholder register which future investors may not appreciate as it can impede decision making, while keeping many people up to date becomes time consuming.

"Experience of working with individual angels who hold small personal investment portfolios is less good. They often have less insight into time and level of investment needed to create value, and have false expectations as to the value/share of their initial investments"
Retired academic entrepreneur, spun out / started up three companies

There are several angel groups around the UK, and these can be very useful for small funding requirements in the £50-£300,000 range. The UK Business Angel Association maintains a directory of angel groups that you can access here.

Crowdfunding

Crowdfunding enables fundraising by pooling small investments (or payments for future products) from a network of individuals. Equity-based crowdfunding targeting high technology does exist, but most crowd funding is suited for companies that require smaller amounts of capital investment, or are limited to investing at the pre-seed and seed stages as they lack substantial follow-on capability. In this respect, they represent an alternative to angel investors. Typically, the crowdfunding platform becomes a single named investor representing all the minor investors, so as not to complicate the cap table.

Venture capital

As covered in the introduction, venture capitalists are professional firms specialised in providing 'risk' finance. Scale is important to VCs. Many VCs are only interested in businesses that can grow to revenues of £100 million upwards, and may therefore decline perfectly good businesses because they consider them 'subscale'. With VCs, it is often the case that finance to be invested will be provided in instalments, on the achievement of agreed milestones. If certain goals are not reached, or tasks not completed satisfactorily, then the next investment may be withheld.

You should research the market thoroughly before approaching any potential investor, to make sure they're interested in your field and they can bring something more than just cash to the table. One way to contact them is through the British Venture Capital Association's website (www.bvca.co.uk), which has a keyword matching facility for identifying relevant VC firms.

Your TTO may have links to VCs, and a warm introduction from a trusted contact is generally the way to go. That's one of the main benefits that organisations such as the Academy offer through their commercialisation programmes.

Tax

Tax is a slight tangent on where to raise funding, but is very much a consequence of it. Tax is a specialist subject, so your one takeaway should be to hire an accountant who will be up to date on the latest laws. There are ways to reduce your tax bill and also many things to get right to avoid future liability, so tax is best left to the experts. Even so, three key points are summarised below:

1) Academic spinout relief

When a spinout is created and shares transferred to an academic, they immediately become wealthier on paper. This wealth is pretty much always inaccessible at this stage, so the academic is arguably not richer at all, and this is purely paper wealth. If certain conditions are met, the academic can be exempted from income tax on this increase in wealth, and so avoid a hefty bill. Your TTO will be able to advise.

2) R&D tax credits

To encourage industry to undertake research and development, a proportion of a company's R&D spend can be reclaimed via the R&D Tax Credit scheme. You can recoup some of the costs, to potentially spend on more R&D. This can provide a useful injection, but it is a complex area, particularly on what can and cannot be counted as R&D. More information on R&D tax credits can be found on this UK Government website here.

3) Patent Box

Again to encourage R&D, companies that register their innovations with Patent Box may apply the lower rate of 10% corporation tax for products that make use of the registered patent. For more information, see here.

The financial plan

There are several core components any financial plan must contain – without these, your business plan may not be treated seriously.

The financial plan you construct will reveal your financial needs; whether you need investment, when to raise it, or if you can survive on sales. For the first year, plans should be outlined monthly, with years two and three detailing quarterly, and any years beyond that annually.

The four key components of a financial plan are sales forecasting, profit and loss accounts, cashflow statements and balance sheets. You may wish to seek professional help with any or all of these documents.

The four key components of a financial plan

1. Sales forecast

Sales impacts every aspect of a business. As such, your sales forecast will form the foundation of your financial plan and business plan. This document will outline expected sales volumes, the mixture of products and of customers, timings, your market and its value. This will have an impact on your costs including production, marketing, storage and distribution, wages, selling costs, financing costs and taxes.

2. Profit and loss accounts

The profit and loss account figures are useful in two regards. When looking forward, these figures will represent a budgeted or predicted set of figures to compare progress against. When looking backward, they provide a historical record of actual income and expenditure. The simplest form of this statement will cover money in and money out, which may be enough in the early stages of idea development. As the business grows, your financial requirements will escalate, and you will then need more comprehensive projections and statements.

3. Cashflow statement

The cashflow statement is derived from the profit and loss account and sales forecast, focusing on monthly changes. It is both a record of and forecast for what is expected to be paid and received each month, according to the business plan. It is used to assess the risk of insolvency, if the business plan will work in theory, and if any change of plan is required. Best practice is to create optimistic, realistic, and pessimistic forecasts as to whether or not everything goes according to plan. This stress test may tell you something about the robustness of your plans, and if they need changing, or any weaknesses prioritised.

There must be sufficient cash available to pay for your liabilities when they are due. Your projections will identify cumulative cash positions on a month-to-month basis and will help you identify when these become negative, as intervention will then be needed. This is how to determine when you expect to run out of money. Investors can use this figure to assess how comfortable/desperate you are for money, and so negotiate more favourable terms for themselves accordingly. You can use it to assess if and when you need to raise funds, if sales and grants will sustain you, and if the business plan is working.

If the forecast shows you will run out of funds, you are potentially 'prospectively insolvent', and there are laws that limit trading in such cases. This is partly why they say 'cash is king', as it has such a significant impact on your decisions. Being part of a university means you probably haven't had to pay close attention to the bottom line, except at the financial year-end where it typically gets pretty hectic. For a startup, every month is like a year-end; finances are tight, and you need them all in order.

4. Balance sheet

The balance sheet offers a snapshot in time, identifying the health of the company, any assets and any liabilities that exist at that time. Information contained within this sheet, the way it is presented and any notes that expand on details are specified under Generally Accepted Accounting Principles (GAAP).

Building the financial model

The financial model contains all the details that feed into the financial plan above – all your assumptions as to the costs of each item, and how these can change. There will be a range of variables in your model, and these will be based on your assumptions, examples of which include:

- **Assumptions about selling price and sales volumes**
- **Expected inflation rates, initial funding, borrowings and interest on these, plus credit terms on purchases**
- **Employee wages and employee start dates**

These assumptions should be explained, and be constantly revised as you learn more.

It is essential to build a model that will facilitate flexing for best- and worst-case scenarios. This means constructing a model that will allow you to easily modify your assumptions to determine their impact on your business plan, testing the robustness of your plan. There are plenty of free or inexpensive models based on spreadsheet software available via the web. If you're seeking finance from a bank, they may well supply you with their own model, including guidance and instruction.

The structure of this document should be kept simple, with detail required only to understand why and how figures are as they are. Use summary statements and cross references to indicate links to other worksheets. These might include sales forecast, profit and loss account, cashflow statement and balance sheet.

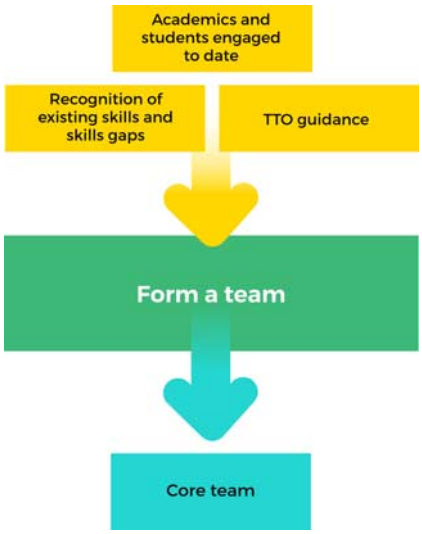
Form your team

There's a good chance you may already have people in mind for some roles within your spinout, but it's important to make sure that selections are made for the right reasons. It's somewhat inevitable that you start off by recruiting your colleagues to assist in the early stages, but this rarely looks good to investors when they see a team of four academics with identical skillsets and backgrounds.

You will need to supplement this team as time goes on. Successful leaders recognise their own shortcomings and build a team from individuals with a broad range of complimentary skillsets, backgrounds and experiences. Look outside your immediate network to identify sector experts, who can open doors to contacts and markets you'll need access to in future.

Advice and mentorship are invaluable assets when laying the foundations for a successful business. You will want to construct an advisory board, be that scientific, commercial or a blend of the two. This board doesn't need to formally be created until the business is established, but networking early and lining up potential members is always sensible. When doing so, you want to identify individuals who have done something akin to what you aspire to do. Use your network to get introductions, meet them for coffee and ensure these people are good fits. Bad chemistry will come back to bite you later if you rush this appointment.

Talented entrepreneurial leaders are always in high demand, so seeking advice could be key to finding them. Executive recruitment agencies are useful (but expensive) sources, as are specialist agencies such as



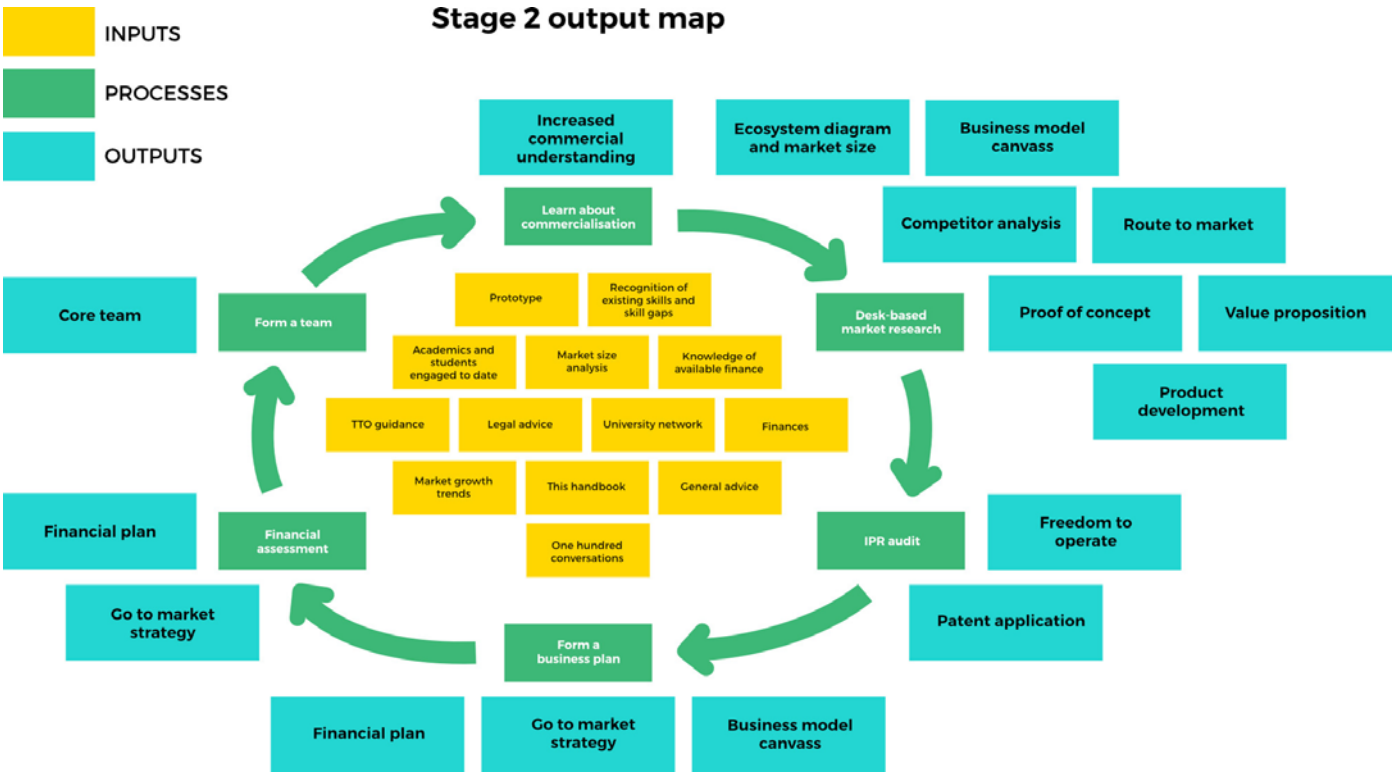
"You need to build a team you can trust, build your culture early and don't be afraid of getting out of the university. You've made the decision to spin out, so go for it. There will be failures but you just need to learn from them, don't be afraid of getting things wrong. Be agile and enjoy the journey."
Academic entrepreneur with three fundraisings of over £1.8 million secured

Directorbank, the Institute of Directors and any business mentors or investors you've brought on board thus far.

In the early stages of spinout formation, it may make financial sense to use contractors to help with specific tasks such as product development. Contractors are not classed as employees, and therefore IP created by them will not by default be owned by the company, so be sure to check the contract is fit for purpose. When taking on a Chair (or other senior roles for that matter) you may want to consider paying them in 'sweat equity' – or shares in the company. This can be a good idea, particularly if you have a specific task in mind for them such as leading the fund raising. In our experience the typical payment for such a role is 1-3% stake for one or two days' work per month. If they expect more, consult your TTO and any friendly investors in your network.

"Spinning out a company can be one of the most rewarding aspects of your career. The single most important factor when recruiting early team members is to choose people who are happy to roll their sleeves up and help – the CEO should be comfortable dealing with key customers, shareholders, etc. but at the end of the working day happy to help put the bins out!"
Academic entrepreneur with three fundraisings of over £4.5 million secured of over £1.8 million secured

The entire stage 2 process – Should you try to spinout?



Stage 2 checklist

This list is indicative only and should be adapted both to your needs and the university's process.

1) **Have you completed a comprehensive market analysis in which you have identified:**
   - ✔ **Estimated market size, including whether this is growing, static or declining**
   - ✔ **All potential competitors**
   - ✔ **Your go-to market strategy / route to market**
   - ✔ **Your business model canvas**
   - ✔ **An ecosystem diagram**
   - ✔ **Freedom to operate report**

2) **What is your value proposition?**
   - ✔ **And what is your product development pipeline?**

3) **Have you constructed business projections which include:**
   - ✔ **Expected sales and profit margin**
   - ✔ **Overheads and cash requirements for the first three years, including:**
     - **Profit and loss accounts**
     - **Balance sheets**
     - **Cash flow projections**

4) **A breakdown of major sources of risk and uncertainty. These include:**
   - ✔ **Technical risks**
   - ✔ **Academic competition**
   - ✔ **Commercial competition**
   - ✔ **Management risks**
   - ✔ **Have you created a clear, persuasive executive summary that tempts the investor to read further?**
   - ✔ **Do you have freedom to operate, or is there existing IP that others hold which will act as a barrier?**

5) **Has the above been assembled to produce a complete business plan?**

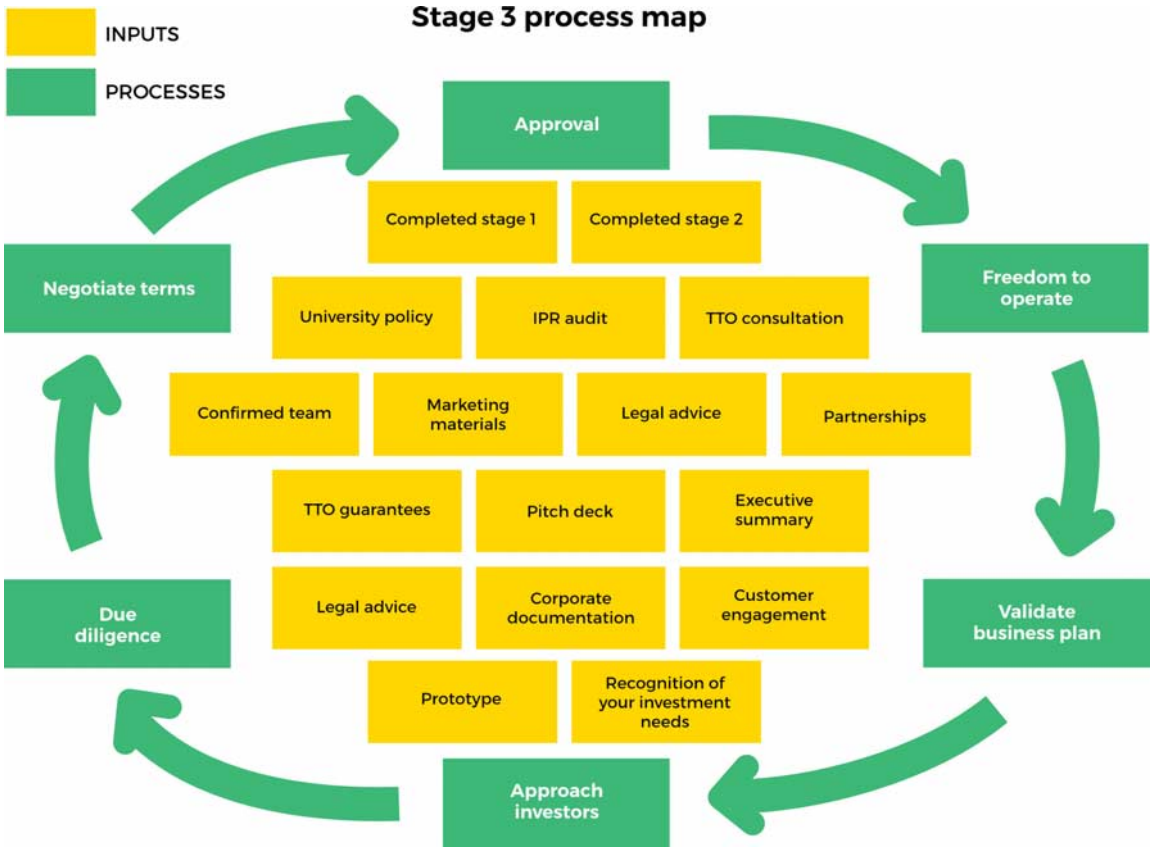
6) **Have you identified who makes up your core team, including identification of the core competencies and skills gaps within the team?**

Resources

For a full set of resource links, visit the online version of this handbook:
https://reports.raeng.org.uk/entrepreneurs-handbook/resources

STAGE 3

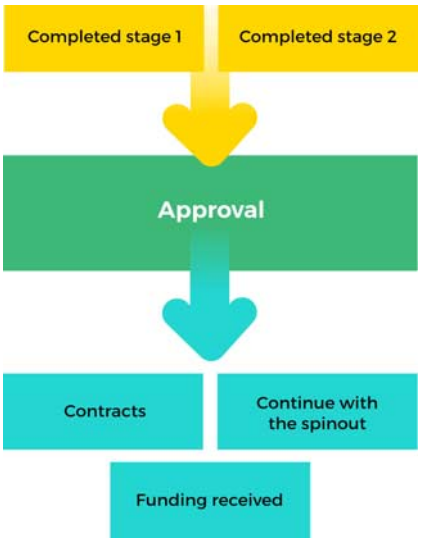
How do you get approval to spinout?



University approval

Here, you seek official confirmation from the university that you may spinout. Despite being the final stage of the cycle, it serves as a useful introduction to a section where we see the stakeholders frequently butt heads. This is inevitable due to how singularly important the decision is. While all sides want your company to succeed, differences between them will usually remain, and your role will be to see it from all sides and steer them all towards a compromise.

Your investigations must lead yourself, the TTO and any other stakeholders to agree that spinning out is the best option to achieve your goals for the innovation. That's the case whatever those goals may be, and a frequent catalyst is securing an investment contract to provide the necessary finances to continue the process. This is one of the most onerous and well-known tasks associated with startups and spinouts – raising finance.



Different points of view

With raising finance being such an important task it inevitably brings competing viewpoints, often being the biggest point of contention between stakeholders. Our survey showed that the barriers of university bureaucracy, risk appetite and inflexibility were all identified by academic entrepreneurs, investors and TTOs alike. At least they all agree on the difficulty, if not the solution!

Among academic entrepreneurs, 27% of responses contained commentary around university bureaucracy. This was second only to issues related to academic culture (workload, job security, and incentives) which were present in 29% of answers. For investors, university bureaucracy and commercial awareness among academic entrepreneurs were tied as the most frequent theme, present for a significant 38% of responders. To their credit, TTOs also acknowledge the issue, but only as the 7th most frequent theme in their answers at 20%. While this misalignment in relative importance should be borne in mind, consider their position. The TTO must operate within the constraints, incentives and targets set by the wider university; they're more used to them, and often more accepting of them. As one TTO put it: *"There are still about five layers of bureaucracy for approval, all seeing spinouts as a high-risk activity rather than a driver to impact".*

"The amount of equity taken by some universities detracts from attractiveness to take an idea forwards, coupled with the long and cumbersome spinout approval process and the protracted negotiations with the University."
Investor

Key takeaways here are that all sides acknowledge the negative aspects of risk-appetite and bureaucracy. You're unlikely to be in a position to effect change in the short term, so you should focus on helping to ease passage through the process by working with your TTO who knows it well, and in particular by reducing risk.

Freedom to operate

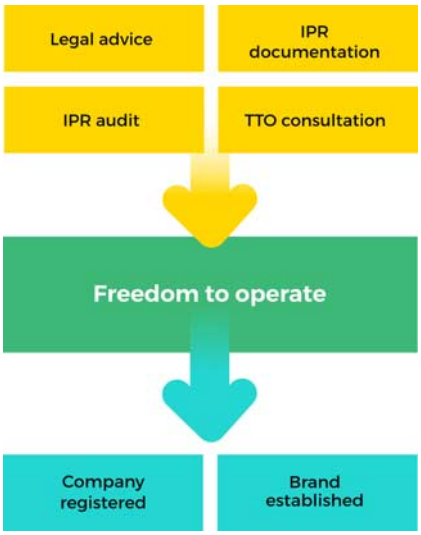
Here, you double-check that you can legally do as you propose. This is a rather long and administration-heavy step, but it's a necessary one which requires expert legal input. The process and timeline is mapped out in detail earlier in stage 2 (IPR audit), but at this stage, you may need to collate all the information to confirm your findings once more. Without evidence that this step has been conducted thoroughly and independently, no investor is going to come on board.

If you have not done so already, now is the time to register your company through Companies House. You will need to have:

- **Decided upon a name**
- **Appointed at least one company director**
- **Have agreement in principle upon the equity split between the university and your co-founders**
- **Prepared some basic documents such as your memorandum of association and articles of association. This process is covered in section 4 and in detail here, which is also where you will need to go to register your business.**

In addition to the above, you're likely to want to register a web domain and prepare a website (which should only be launched once you're happy with the content). Create social media channels for launch, open a business bank account and register for VAT, more information on which can be found here. You should consult your TTO again at this stage as you may need to be charged VAT by the university for the consideration paid for your IP.

As part of the process you will also need or visual identity and tone of communication. Don't overcomplicate it; less is definitely more, and your time is better spent elsewhere. Resist the easy option of naming your company after the product. Many people do this only to later realise they need an expensive rebrand as their name does not align with later product lines, potentially stifling growth.



"Negotiate on your terms. Learn negotiation skills to handle investors, employees and the TTO offices to make sure you understand the terms presented and you are happy with the results. This is a steep learning curve (investor documents, articles of association, shareholders agreement, IP licences), and feeling comfortable with the terms of engagement is crucial."
Academic entrepreneur

Validate a business plan

At this stage, you obtain evidence that it's a good commercial plan, or adapt your plan until it is. There is a wealth of information available on creating your first business model canvas, validating your business plan and creating the perfect pitch in existing videos, books and blogs. Many commercialisation grants and programmes provide training on this as the starting point to commercialisation, and you should become well versed in them as a priority.

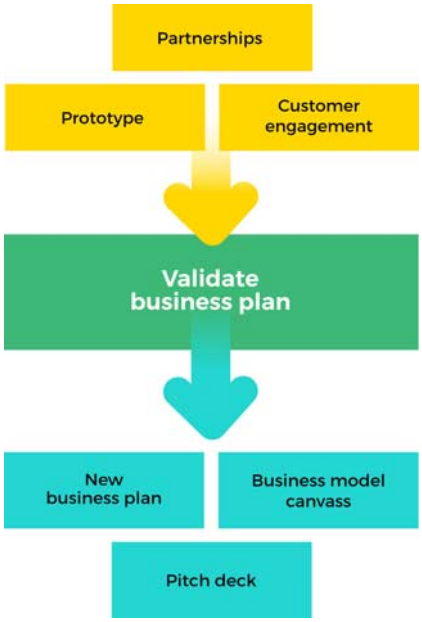
There are many alternatives to the **Business Model Canvas** (BMC) out there, so pick one that works for you. These are not the tick-box exercises people sometimes mistake them for, where they write one and roll it out for display as and when required. These are living documents, to refer back to and edit whenever you learn something new. Expect this document to change significantly over time; your first attempt is never your best, and will likely be unrecognisable from the one you implement. If you don't make any changes at all, it's likely you haven't learnt anything from the feedback, which will worry other stakeholders.

Put it to the test

The BMC is your hypothesis for a good business. Yet no matter how confident you are in your plan, it is as yet unproven or unvalidated, which you must now address through testing all your assumptions. Validating the plan with objective data is not just helpful for putting your mind at ease – it's essential to securing investment. As much as investors say they look for a great story and team, they will not commit cash on your say-so and charisma alone. They will need independent evidence.

Validation involves identifying every part of the plan (be it a number, theory, relationship; anything and everything contained within it), and accepting that these are assumptions rather than facts. Test each and every one to see if it is true or not, or more likely, how confident you are it's correct. Testing can take many forms, be it fact-based research, talking to experts, or selling and testing the product itself. It all depends on the nature of the assumption.

The more of your assumptions that you can tick off as true (validated), the more you can reduce the risk of failure that the stakeholders fear. Proper validation is evidence that will convince your stakeholders, not just yourself. Don't simply validate what you think needs answering – ask your stakeholders what they need to see.



"Don't necessarily wait for the university! Always keep them informed, but go ahead if they are delay the process unnecessarily. Complete a business model canvas at an early stage and engage with potential stakeholders/customers at an early stage to understand requirements."
Academic entrepreneur, spinout incorporated in 2004 with over £30M secured through 11 fundraisings

Building your pitch

If your chosen method of finance is investment, then you are going to need to pitch. This is essentially the investment world's equivalent to job interviews.

To pitch, first you need a pitch deck – a short and snappy presentation outlining the opportunity and your long-term goals. Pitch decks and pitches are very different from academic lectures or work presentations, something we find our awardees can struggle to adapt to. Less is most definitely more in this case, and three-slides-in-three-minutes pitch events are quite common. The in-depth, evidenced, genius complexity of your innovation is not wanted here. This will take some getting used to, and it's worth attending pitching competitions as an audience member to see it in practice.

Messages are generally received better when they are in the recipient's favoured form, rather than the sender's. In academia, this means detail, facts and proofs – but investors are not academics. Resist the urge to send a full business plan and technical spec, with reams of text extolling the virtues of your innovation. The harsh reality is that investors are unlikely to read such unsolicited documents. They may want such detail later if they are interested, but as a starting point they'll probably prefer just a pitch deck.

Good practice is to follow the 10, 20, 30 rule: "a PowerPoint presentation should have ten slides, last no more than twenty minutes, and contain no font smaller than thirty points."

The length of the pitch

A key mindset to adopt is that a pitch is a sales pitch – more akin to a TV advert than a presentation. Make it short and sweet, light on detail, enthusiastic, aspirational. Grab their attention with the big picture and core facts. Make it memorable and visually engaging. Line graphs, equations, and black text on white paper have no place here! The design you use is important as it must reflect your business and its brand, and values, whilst crucially distilling information down so that it can be quickly and efficiently understood. It might be worth paying a professional if graphic design isn't your thing. If you think the brand you present doesn't matter and only the technology counts, you haven't understood the commercial world yet. It matters.

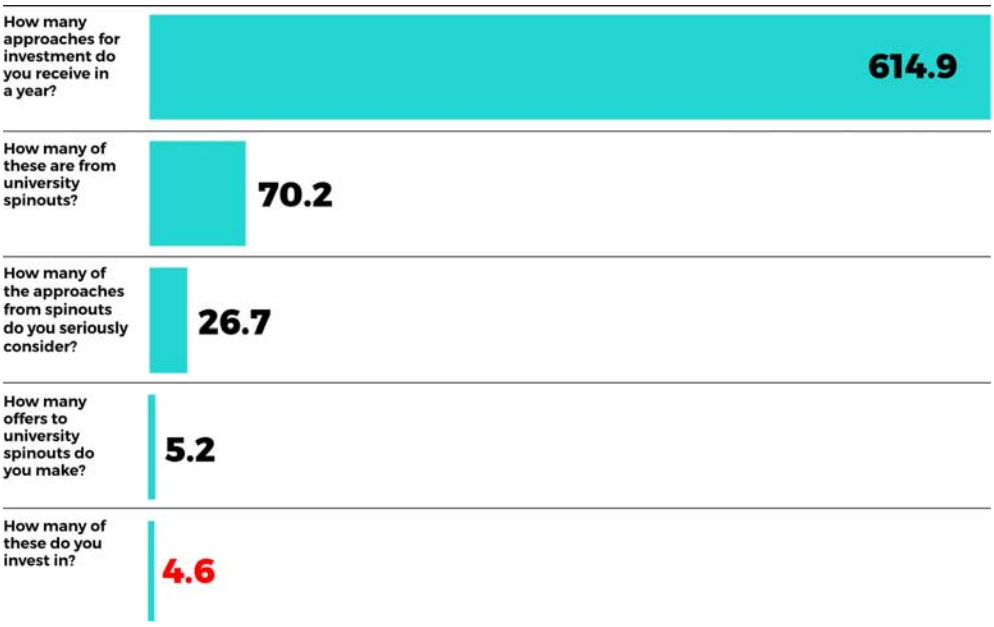
When writing your pitch, consider your ideal investor and the likely questions they would ask, before answering them. Your pitch deck should be clear and concise; explain the problem you are solving, why now is the time to solve it and how you will generate revenue. Many online guides break down what to include and why. Most of these guides are aimed at traditional startups rather than academics, so it's worth remembering that your competition for investment is other companies, not other academics. No-one here will ask for your publication history or reference list; they want to see evidence of commercial experience, so underline that wherever your team has it.

"We see a few hundred pitches a year, but invest in less than 10%. Half or less are university spinouts. Lots of founders don't appreciate how competitive getting funds could be. It's a competition – you filter and find the best match at the end of the day. Coming from a university, they often don't have the experience necessary to appreciate what it takes to run a company. Mentoring by people who've been there and done it is really important."
Investor

Competition

So why the focus on short and snappy pitch decks? Firstly, consider the sheer level of competition for investment that exists. It's often said that a VC receives a thousand approaches a year, interviews a hundred, and funds ten, generating a 1% success rate. Survey respondents who identified themselves as any type of investor (32 responses) show a huge spread (see below), and an average success rate of 2.64% (4.83 SD).

Averages of investor responses to questions on approaches, offers and investments



By comparison, the grants sector typically aims for success rates averaging 10%, to get a balance between competition and efficiency. As mentioned previously, the 160 university spinouts each year in the UK is not a lot, but you are not just competing with spinouts. There are also around 4,000 graduate startups a year to contend with, over 450 accelerators and incubators, typically supporting ten or more aspiring startups each, not to mention thousands of older businesses and unconnected startups in the UK. They're all competing for one of the 9,000 raises listed on average each year by Beauhurst.com. And remember, just as you may approach investors overseas, those investors will themselves be receiving similar approaches from all over the world.

Lastly, and most importantly, understand that you are asking people to give you hundreds of thousands of pounds, if not millions. If you were in their shoes, would you be receptive to a stranger coming to you cap-in-hand three months before their company runs out of funds? People don't give that kind of money to strangers, so you need to engage with investors early, potentially at least six months before you even start raising. Allow time to build a rapport, assess mutual interest, and understand what they are looking for in an investment case so you can then address their priorities in good time. Your contact at the investment firm will be your champion, putting your case forward to the rest of the team, so you need to get them on your side as they become the third (unofficial) member of the team after yourself and the TTO. They know best what their colleagues are looking for in an investment, so listen to them and question their advice to ensure you understand it fully.

"Some academics that I have worked with have been a pleasure to be around. Others are in dreamland or live in the belief that their academic excellence should allow them the same standing in the commercial world as they have in the academic world."
Investor

Approach investors

As you might expect for people who give away money, investors are in high demand and often hard to pin down. You can tell who they are at pitch events by the hoard of entrepreneurs surrounding them.

While that's one way of making their acquaintance, a warm introduction will go a long way towards gaining their attention – this is something your TTO will be able to assist with. Your TTO may also guard their network carefully, and reasonably so. They will not want to damage the relationship by introducing investors to colleagues before they are ready, so your first step is to get the TTO on your side (which you should have done by now). Your TTO has done this before, and can steer you away from common pitfalls by pointing you towards suitable resources and friendly investors more willing to give feedback.

You would ideally meet your preferred investors even before you start formally pitching to them, or meeting them at events. When speaking with VCs and angel investors, one point was consistently raised in our research – you should be engaging with them as early as possible. It takes a long time to get people on your side, prepared to hand over large bundles of cash. It's important to speak with as many investors as you can, to understand what they're looking for in a proposal and to warm them up for when you'll start pitching properly.

"We have worked hard at seeking to develop relationships with investors. We have a strong relationship with local existing investors, but have now looked to extend this out to a range of international VCs. We seek to provide investor-ready proposals that make it easier to secure seed or Series A investment. We have had great success with this approach, and we are keen to extend this further as we gain more and more success."
TTO employee

If initial pitch events and meetings go well, you may be invited to submit a full business plan and give a pitch with around ten slides. A presentation of this sort would take around 30 to 60 minutes, in which time you should expect to be questioned in detail about your business proposition. During this pitch, you're trying to convey the story of the business and the story of you as a founder. You must articulate why you, why now, and how you're going to deliver. The whole management team should be present at this meeting, as the investment proposition is as much about the team as it is the technology. You are unlikely to succeed at the first attempt, so always ask for feedback and note down what questions they ask so the next pitch covers all these points already.

"TTOs typically do an exceptionally poor job in preparing spinouts. They need to get to the academic and build a relationship with them often years earlier, and provide training and mentoring to the more promising academics in fields ripe with commercial potential... Tech Transfer is often called a contact sport, but the extent of the contact needed is almost always drastically underestimated."
TTO employee

A few key points to consider when approaching investors

1. **Raising finance is lengthy and time consuming. Start at least six months before you need the money to arrive, and expect it to take up most of your time. Often leading the raise is the primary role of the chair (if you recruit one).**

2. **You will be expected to be up to speed with all relevant sector news on market trends, legislation and competitors, including recent sales and acquisitions.**

3. **Investors aren't wallets – they offer much more than just finance. Recognise what skillset or network would help you most, and seek out investors who fill this need. Examples might include those with good sector links, or a network to build out your team.**

4. **There are hundreds of VC firms in the UK with thousands worldwide, and many more angel investors. Each covers different sectors, and with different exit timelines. Do your due diligence, targeting those who have a verified history of investing in your sector and who want a return on a timeline that works for you.**

5. **Investors often want founders to have their own money invested in the venture. This demonstrates the founder is committed to the business, and will not walk away when it gets tough. Universities can demonstrate this through various forms of contribution. For the academic, it's likely your commitment is in time only, and perhaps a demonstrated willingness to leave the university and join the startup. Seriously consider what you are prepared to commit.**

6. **Investors often say they invest in the team, not the technology. Consequently, you need a team; going it alone is hard, and less likely to convince others of your credentials.**

"Pitching to investors was a positive experience and it took three attempts, but the feedback given was very constructive. The network of investors became quite complex as the company progressed through the process and the founders became very remote from the process, and disadvantaged to some extent. In comparison with public support, investors will obviously take equity, but they did become actively involved in the company, which was generally a positive."
Academic entrepreneur

"I find the greatest challenge is getting them [academics] to the point they are happy to start talking to lots of investors by themselves. We approach it with the idea that they are used to a 75% failure rate with grants, and that approaching investors has a higher failure rate, but that there are more investors than grant funders and they are approachable at any time, not just when calls are open."
TTO employee

This initial stage of introductions is a numbers game. It may take you several months and many attempts. During this time, you may wish to consult the British Venture Capital Association's website, which has a keyword-matching tool for identifying the most suitable VCs based on funding requirements and fields of business activity.

"The best investors are not 'dumb money' or 'best valuation'. They are the ones who can truly bring their network, advice and high-quality management to the company. Bad case studies tend to be seduced by the valuation or big cheque – good case studies get a supportive, high-quality syndicate of specialist investors who bring real value beyond cash."
TTO employee

How to spot the right investor for you

1. **You like them as people**
   The relationship you have with your investor will last for years, so make sure you get on with them. You want to rely on these people for differing perspectives, lived experience and strong opinions – you'd better get on well with them and trust them! Plus, if you get on well, it's easier to work together to fix any crisis you may subsequently face.

2. **They have useful skills and contacts**
   Investors are often (but not exclusively) former investment bankers or entrepreneurs. Consider what background and network access would best compliment your team's existing skillset and business goals. The best investors will understand your background, and can help guide you on that journey.

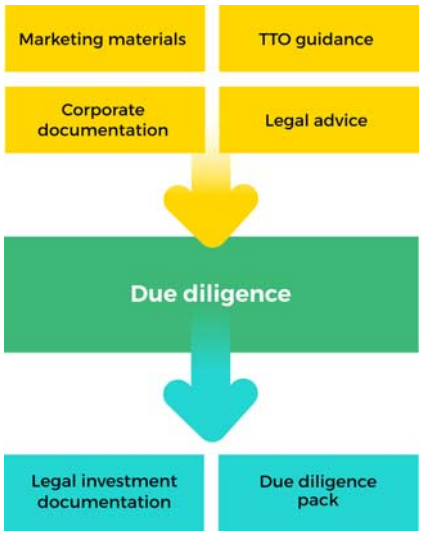
3. **Your timelines and ambitions align**
   You don't want the investor encouraging a sale before you are ready, just so they can meet their internal targets. Equally, if you'll need multiple investment rounds, you want a lead investor that can support you through each of them.

Due diligence

Interested investors will carry out their own due diligence on you, the team, the market and the innovation. This process can take months, during which time you will be expected to be available and provide detailed information as requested. When there are multiple investors, the lead investor (who is proposing to invest the most money) may conduct the bulk of the negotiations and due diligence and share it with the rest.

The TTO will lead with the lawyers, but there are several key points for you to consider and keep up to date during this time. These include:

1. **Your corporate documentation. All accounts, legal filings, employment contracts and other essential documents must be kept updated and be on-hand when requested. Not having your house in order will slow process down, and is a red flag to any potential investor.**



2. **Website and marketing materials. Investors will look at your website, as well as social media accounts such as LinkedIn and Twitter. Make sure all material is accurate, up to date and consistent, so there aren't any discrepancies to explain. An out-of-date website indicates a potentially dead company.**

3. **Diaries and planning. Ensure critical members of your team are available as much as possible through the fundraising process. Investors may raise many additional questions and you want to respond quickly and clearly.**

4. **Investment costs. In addition to the equity you're giving up, investors may charge for arrangement fees (up to 5% of the total raised). They may also levy legal and due diligence fees, with ongoing monitoring and non-executive director fees paid annually.**

Documentation and completion

Once you have completed due diligence and your term sheet is in place, your investors will expect to move onto finalising the rest of the documents required for investment.

Your TTO will typically lead on negotiations with the investors and legal teams. It will create a body of documentation that sets out the rights and obligations of investors, the company and its management.

This will comprise:

1. **The due diligence pack:**
   Finalised and approved just before investment
2. **IP license agreement:**
   Signed after incorporation, but before investment
3. **Share subscription:**
   When a shell company is formed with the academic founders as shareholders
4. **Articles of association:**
   Adopted on completion of this process
5. **Subscription and shareholders agreement:**
   Signed on completion of this process
6. **IP option (pipeline) agreement (if applicable):**
   This can be created at any time
7. **Investment agreement:**
   Signed when investors come in, replacing the original shareholders agreement

"Good investors are incredibly supportive throughout the venture development process, through the good times and the bad. It's important to identify investors who are competent in your domain, have had experience in it before, and can understand your business. The road will be bumpy but when there's turbulence, a good investor will remain calm and look for solutions. Look for signals the investor is competent and a good investor – do due diligence on them as much as they do on you. Ask to speak to some founders they've backed, and specifically ask to speak to founders they've backed where things didn't go so well. If the company folded or the founder was sacked, this will give a good indication on how well they handle challenging situations, how principled they are, and how supportive the investor is."
Academic entrepreneur

When the new investor becomes a shareholder, the existing shareholders' agreement will need to be amended, or a new one put in place.

This will likely contain the following additional provisions:

Warranties
Essentially promises by the management team as to the accuracy of key statements and facts made to date.

Restrictive covenants
Investors may expect key individuals to commit full-time to the company. They may also impose non-compete clauses on the university and any employees who leave the company. Negotiations can become difficult if the investor attempts to restrict further academic activity using the IPR, as the university will want to continue research unhindered. You need to make sure that any investor realises this.

Reporting
Investors will require regular updates on progress, probably at a much more detailed level than you're used to. It is important to consider the practicalities of producing the required level of information within the timescales expected by the investor.

Good and bad leaver
If you cease to be an employee or director of the company, you may be required to give up all (or a proportion) of your shares. Negotiations with the investor on what constitutes a 'good leaver' can be protracted. A bad leaver may well end up with next to nothing.

Negotiating terms

Warning – iceberg ahead! This stage may be difficult or run smoothly; it varies greatly, and is hard to predict. The negotiation of spinout and investment terms is one of the key stages at which you'll begin to see and hear very different interpretations of what each stakeholder thinks, feels and considers to be fair. Talk to other people who have been through the process already. Your experience may end up completely different to theirs, but it would be useful to get some first-hand insight regardless.

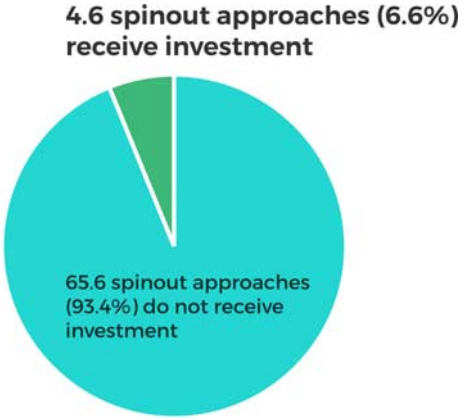
Our survey found that views vary wildly. With investors, the average expectation of university equity holding varied from 5% to 50% (with the stated expectation that this would drop), achieving an average of 23%. The TTO group expected upon founding to own an average of 35% equity, with the range varying from 20% to 60%. Interestingly, many investors stated (VCs in particular) that they would absolutely refuse to invest in any spinout with a university holding of more than 10%. Although this sounds obstructive at first, when you understand the numbers of companies you are competing against for investment, you begin to understand this is a luxury some investors have, given how choosey they can afford to be.

Our survey found that investors see a huge number of approaches each year but only support a very small minority. Some of the larger VCs are sifting through approaches from two or three thousand companies in an average calendar year, hundreds of which are spinouts. The number of investments these firms go onto make in spinouts varies; on average, they see a success rate of approach to investment of around 6.6%. This is significantly higher than the anecdotal 1% for investment trends in general, implying you will need to approach about 15 investors. However, complicating this is how investment rounds often involve more than one investor, thereby increasing the number you will need to approach.

Your university's policies will likely dictate whether a spinout is initially formed between the founding team and university only, or if a spinout will only be allowed to be formed when investment is secured. Each case will impact the negotiation process, as it impacts on the number of parties engaged. It's important for you to understand how their core opinions and stances contrast, as ultimately you will be required to negotiate with both.

"The accelerator experience was incredible, as I was amongst several others who were venturing out of their university or institute. It was helpful to share stories and feel part of a community that was supportive. It was also an eye-opener into other institutes, their terms and issues; it seemed like there were consistent issues across a lot of institutes. The training and mentorship at the accelerator came from entrepreneurs who had done it before, which gave very practical advice that supported the venture tremendously."
Academic entrepreneur

The success rate of spinouts approaching investors
Average number of university spinout approaches received annually by investors in our survey = 70.2

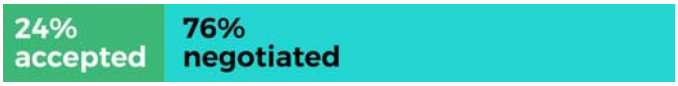


Negotiating with your university

Many investors consider spinouts to be entities created and run by the founding team, and that universities deserve little to no stake as they are not adding future value. This may seem an attractive point of view as it means the founders take a higher stake, but it won't go down well with the university. It also ignores an inescapable fact – you ultimately need something the university owns, be that access to IP, people, or facilities. This creates the need for negotiations.

Universities may refer you to internal policies on equity and suggest that such policies are non-negotiable. However, in practice this is rarely the case: you should assume that everything is negotiable and you can always walk away if it doesn't work for you. Our survey shows negotiation is actually the norm, with 76% of respondents having negotiated their terms. Your aim here is to negotiate terms that work best for your longer-term ambition, whatever that may be.
Do you just want the experience of running a spinout, to get the technology used, to make money or to raise investment? Different goals will require a different approach.

Proportion of academic entrepreneur survey respondents who accepted or negotiated terms of equity deal offered by their university:



In response to "What principles should govern the distribution of returns/rewards including equity, licencing and royalties between universities and spinouts and the academic team at point of spinout" the top three themes in the TTO responses surrounded recognition of the university's contribution (60%), fairness and consistency (56%), and equity to the individuals and founders involved in the future of the spinout (40%). Several aspects of the university contribution were discussed in responses: resources contributed to technology development and technology transfer, providing the environment for research and innovation to thrive, and covering IP costs. There was recognition that the extent of these different contributions varies substantially by institution, and the staff and resources they have available. In terms of fairness, this related to the university contributions, but also the desire to ensure fair returns for the public sector and other third parties such as funders and collaborating institutions. An undefined sense of fairness is the main theme for universities.

There were a smaller number of themes within the responses:

- **Consideration of external management teams and future staff (16%)**
- **A majority stake for founding academics (12%)**
- **Consideration of returns to the tax payer or public sector (8%)**
- **That rewards should reflect risks taken (8%)**

A single response emphasised the importance of having discussions around these issues early on in the spinout process. From the experience of our own programme, we would strongly advise you to have these discussions early on. You will not reach a conclusion in the early stages, but it's essential to assess early if reaching alignment is possible, or if the terms on offer from the university and founding team are not conducive to success.

Shares in the new company can form part of the final agreement. So could licensing fees, the sale of IP to the company, a revenue share model or any combination of these. Your university should have an established policy that determines the starting point of a negotiation, and these vary significantly. Some are known to begin negotiations at 60/40 in favour of the university, others will begin negotiations at 20/80 in your favour, and many smaller institutions deal with negotiations on a case-by-case basis. See our Spotlight on Spinouts reports (2020 & 2021) for more on the policies of different universities.
Any agreement between yourself and the TTO will need approval from a chain of individuals, ranging from the head of your department to the university's executive board, and you should consult your TTO to understand the process and timelines.

> **"Large percentage shareholding claims by a university at the start reduces investor appetite."**
> *Academic entrepreneur, managing director at a spinout for over ten years*

Negotiating with investors

Investor responses around what principles should govern the distribution of returns and rewards such as equity, licencing and royalties focused on a minority stake for universities (mentioned by 50%), a fair stake for the universities (mentioned by 31%), and the chances of future spinout success (mentioned by 31%).

The implication with many of the investor responses talking about universities receiving minor stakes was that the respondents had previous experience or knowledge of the process. Answers reflected both positive and negative experiences with this part of the process in the UK, and saw respondents talking in theoretical statements on what universities 'should' do, and concerns around the implications for the future of a spinout. In some instances, this was explicit; "...my own experience is that universities often value their own IP 'too much', i.e. that it's 'oven-ready' for success and just needs a push. That's rarely the case in fact."

The concept of 'fairness' to the investor respondents is linked strongly to the chances of a spinout being successful, and ensuring that key staff will be sufficiently motivated through equity distribution. Their views on what constitutes a fair stake for the university cluster around several different factors, such as the amount and kind of support being given by the TTO or whether the IP was being transferred to the spinout. There is recognition that the universities and TTOs can and do contribute to the process (especially in the early stages), but that this varies quite substantially by the university or the type of technology.

Conversations around proportions and fairness of university stakes shouldn't be prioritised over thinking about the overall success of the spinout. Chances of future spinout success (31%), sufficient founder team equity (28%), and motivation of the founding team (22%) also featured among the responses. These are all closely related but subtly different themes.

Considering how often the following controversial points are raised anecdotally (of which the quotes below are representative), a surprisingly smaller number raised the themes of the importance of speed (13%) and simplicity of the processes and negotiations around licensing and equity agreements (13%). The same is true for the sentiment that rewards should reflect risk taken (13%), and that there should also be consideration around the management and commercial expertise being brought into the spinout, and how these individuals can be rewarded and motivated (9%).

"My experience with helping companies spinout from universities is that the process is too complex and bureaucratic. TTOs have historically placed too much effort on protecting universities, rather than enabling spinouts to succeed."
Angel investor

"Assuming the business concept is viable and has potential, the biggest barrier is the university itself. In my local experience, unrealistic expectations in terms of equity are set, and internal processes are very bureaucratic and take a lot of time. This can discourage investors and entrepreneurs alike."
Angel investor

"[Barriers include] risk appetite of the university. There are still about five layers of bureaucracy for approval, all who see spinouts as a high risk activity rather than a driver to impact. Secondly, seed investment for often very complex technologies is not a particularly well-served area for the UK outside the golden triangle. Of the last three spinouts I have supported, only one has received significant UK investment; the rest have all had to go to the States/Europe/China to find people with both the technical understanding and the risk appetite for the project."
TTO employee

What will be negotiated

The previous two sections have given you an insight into what the investment and university community generally think, but what does their opinion mean for you? The three issues you will need to negotiate when spinning out are respective equity stakes, IPR and company valuation. These are intrinsically linked, and each stakeholder will make arguments summarised below on why their stance is 'correct.'

Remember there is no objective 'right and wrong' answer for these issues; it's all a matter of opinion, and you are unlikely to change anyone's opinion significantly. Understanding the opinions you will likely encounter may help the process run more smoothly, particularly if you find yourself as a go-between for the investor and university (which the entrepreneur often can be, at least in the initial stages of discussion). The key is to ascertain how much wiggle room or margin of error there is in each stance, and to find common ground.

> **"The overarching principle should be to conclude an arrangement between the company and the university that does not fetter the chances of building a significant business, i.e. creating an uninvestable cap table at an early stage."**
> *VC investor*

The closest you can get to an objective answer about what constitutes 'fair' equity distribution is to look at what's currently happening in other investment deals. Ask your TTO to see deals they have done recently, preferably in your sector, and approach other academic entrepreneurs for input. The investor may also be willing to share info, and much of this data is available online, here. The Academy's latest Spotlight on Spinouts report with Beauhurst includes a wealth of data; the average stake taken by universities in the year of spinning out was 23.8%, and the average stake of all founders combined in the year of spinning out was 53.4%.

Always remember this is a business relationship that will last for years, so it's worth taking the 'principled negotiation' approach, which teaches that the best outcome is one where everybody wins. Following 'the customer is always right' mantra, if the product doesn't sell, there is something fundamentally wrong with it. Investors see many offers and can easily go elsewhere; the ultimate test of whether the deal you offer is any good is whether an investor takes you up on it. If the business idea is objectively great but no one is willing to invest on your terms, then something else is the problem – your communication, the team, or the terms you are offering.

It's easy at the point of failure to blame the university terms if a deal falls through, but remember you're a team. You sink or swim together, and blaming university policy is not productive. Get feedback from the investor on what killed the deal, and see what changes can be made.

Founders vs university equity stake

A common sticking point is the relative equity stake of the founders and the university. For the founder, they are interrupting a potentially rewarding academic career to take on an even more precarious situation, but with the potential for a larger pay-off many years down the line. Swapping relative certainty (or at least a more well-known and defined career path) for high risk and long working hours, the potential pay-off has to be worth the risk to get them on board and keep them motivated through dilution rounds.

Aspects of academic culture and structures were the most frequently cited barriers among the responses from academics (29%). A range of issues emerged; precarious job security, lack of time and balancing workloads between spinout activities, teaching and research, through to the incentives for these other activities sometimes directly conflicting with one another. Core perceptions in the responses were that to spinout is a job in itself, in addition to a full-time role. It's also a complete career change, going against the grain, and not something that is truly valued or promoted as an option to academics. Alongside time concerns, there was recognition that this isn't really a situation where it's easy to do both.

> **"For a full-time academic, you need to decide whether to jump to the spinout, perhaps a one-way career change. You need to be really sure, and that's hard for an established academic. I never did, so had to be content with handing over some control."**
> *Academic entrepreneur*

These barriers relate directly to pressures and incentives from the wider research and innovation system; what are universities valued on in terms of what constitutes 'success'? This trickles down, meaning the success of university spinouts and other entrepreneurial endeavours aren't always valued the same way as other outputs in academic career progression. Comments we received included *"patents not as valuable as papers"* and *"My promotions... were based purely in research income, papers, PhDs, teaching. Having 30 patents and helping bring in £15 million from a spinout counted for nothing."*

A lot at stake

For the investor, equity should be decided predominantly based upon continuing contributions rather than past contributions. A good team is essential to success, and the founder is the cornerstone of a good team. The founder needs a healthy stake to stay motivated, even after several investment rounds dilute them. Both the founder and investor are aligned in the founder having a high stake. One mistake to avoid that is commonly made by academic entrepreneurs is being overly-generous in allocating equity to colleagues who have contributed to the innovation in the past, and yet plan to commit minimal working time to the spinout in the future. The investor will view their contribution as having been largely rewarded in the past through salary and status, and so deserves less equity than those joining the team.

Not everyone can have a high stake, so investors often expect the university stake (and that of any peripheral staff) to be lower than their own. They see the university contribution as complete once the IPR exists and is transferred to spinout, so the university doesn't need any motivation to act further. It's often unflatteringly referred to as 'dead equity' (equity owned by people who will contribute little of value in future), and investors hate it.

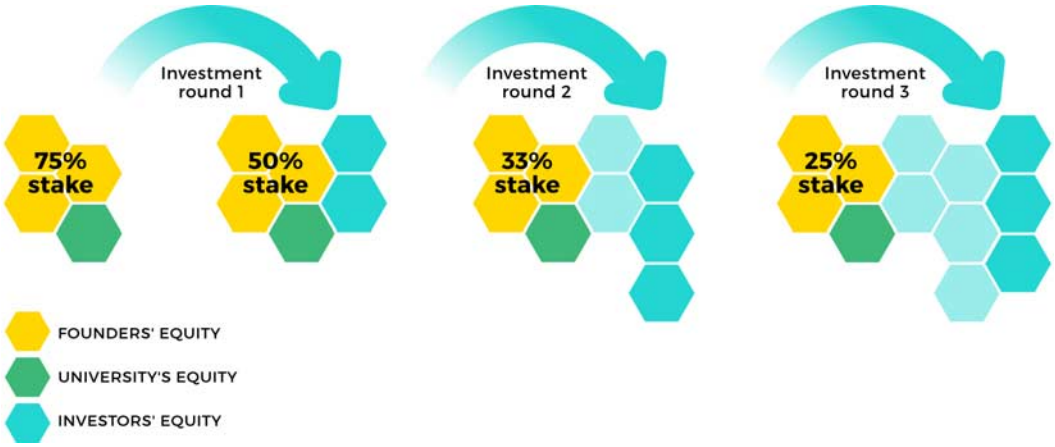
From the university's perspective, they have the law on their side as the IPR is legally theirs. They paid for it and their employees came up with the idea, so they expect a decent share of any potential profit resulting from it. Knowing they will be diluted by future investment rounds, and given the amount of time and funding they put into it, they want a decent share. Nobody would argue with this stance if the university was a company.

Both universities and investors have their reasons for wanting healthy equity, but they are not the only parties. You should do the maths at this point. If a spinout takes five years until sale, and three investment rounds reduce your stake by 25% each time, ask yourself if it's worth your time to take a lower salary and work long hours for the potential rewards of an exit. Consider what your overall income would be in various scenarios, and how likely you think each scenario is to occur. Do the scenarios motivate you to carry on and accept the deal on offer, or do you pull out now before too much of your time is wasted? A lot of praise is heaped on those entrepreneurs that keep going in pursuit of their dream, but a lot more should go to those who realise early on it's not going to work out, and that it will be better to pursue another opportunity.

"Company founders need to have a very honest discussion on what's needed to make the company a success. In my opinion, anyone that is not greater than 0.8 FTE working for the company should not have a large equity stake."
Academic entrepreneur

"The founders – and by founders, one means those who will operate the business on a full time basis – must have a meaningful percentage of the equity (+70% at the time of spin out). Otherwise, it is problematic for equity investors who will be coming later on and dilute the founders. Investors in general do not like 'dead equity' on the cap table and they tend to try and find ways to dilute it by introducing options pools for founders/operators. In my experience, the most common problem with spin out is 'messy' cap tables."
VC investor

Founders' equity share can reduce with each investment round:



"The university proportion should relate to the value of the founding IP (e.g. multiple patents based on seven-figure research vs three months' coding by a PhD student), the resources invested by the university in technology development and technology transfer, the market expectations and if the company value is built by ongoing research or by entrepreneurial drive/endeavour... The founders should receive a majority stake, but with consideration for how complete the founding team actually is. In most cases, I would expect to leave a significant amount of equity on the table for recruitment of other managers/late founders. This can be as an option pool (10-20%) or shares in treasury. Finally, historic funders, particularly charities, might expect to have a similar shareholding to the university, so this needs to be factored into the cap table."
TTO employee (runs a TTO)

From the Academy's perspective, we do not accept applications to our programme where the university wants to take more than a 50% stake. That's because we know the uphill battle they will face in seeking investment, and prefer to support those applicants with a better chance of success. This doesn't mean we believe the university or investor view to be correct, it's just being pragmatic as to what works for the types of spinouts we support – normally ones that require significant investment.

Assured profit now vs risky large profit later

Often referred to as 'double dipping,' sometimes a university will want an equity stake as well as one or more of the following:

- **A royalty agreement**
- **A license agreement**
- **Milestone payments**
- **Patent costs**

Each of these are technically different, but essentially they all do the same thing; they require the company to make payments to the university when a specific event occurs. These might be one-off payments or regular, time bound or cash-limited payments as per contract specifics. The university likes such arrangements because it lessens the potential impact of dilution in future rounds. Even if the university stake is diluted dramatically, they can be assured they'll still get some income through the other payments.

Investors strongly dislike such systems. One-off payments take money out of the company which could be used to aid growth and so increase its value for everyone. Investors argue that regular payments such as royalty arrangements are a 'tax' on profits, and subsequent investors will use this to argue for a lower value of the company, reducing the profit for the original investors and founders. The answer is to try and find a balance between the two; the higher the payments expected, the lower the university's equity stake should be. On patent costs specifically, remember a patent costs about £15,000, and universities hold many. It's understandable they may want to recoup some of the costs incurred.

Overall, the investor wants a simple deal, and everyone benefiting in the same way so all parties are aligned and risk is reduced. The university wants multiple routes to income, minimising the risk that they don't see much of the future profit. Getting agreement here can be tough, but all parties want the same thing – a successful company that value can be derived from. Don't let any disagreements distract from that shared goal.

Assignment vs license

The investor and entrepreneur typically want the IP rights assigned to the company. If ownership is transferred to the company, there are no potential conflicts in future and no ability for the university to withdraw access. This increases the value of the company. For the university, remember that research is likely their primary or secondary goal (the other being teaching), and the university has many other researchers working on the same or related areas. They may want to build upon the research, so will want unhindered access that only comes with outright ownership. Transferring it to the company may not be an option to them.

A key factor here is how a successful company will typically move on from the initial research, superseding it with their own. Consider what the company truly needs to establish itself. Will an exclusive license suffice, and satisfy both sides? The university wants the company to succeed too, and to increase in value, so how do you structure a license agreement to best enable that?

"There should be some recognition of the inputs (grant funding, commercial support, IP costs, etc), but the emphasis should be on the future of the company and its ability to raise appropriate investment, offer appropriate incentives to founders and future employees. Therefore, the equity share and royalties should reflect that."
TTO employee

"There should be a standardised and simple template for licensing and equity agreements across all universities for spinouts. The university should have no more than 1-5% in ordinary shares, should charge no more than 1% royalty on net sales, and the IP/patents should always be assigned into the company before an exit / acquisition."
VC investor

"Fees and royalties should be modest and weighted to later stages and success. Few or no fees before the company is cash positive. IP assignment fees are acceptable because there is a significant risk for future opportunity to gain from IP that is no longer owned if the company should fail."
TTO employee

Normal shares, preference shares and golden shares

Preference shares are a special type of share that come first in the queue upon a sale. There are variations, but in effect, the owner gets their money back first on sale. Any money remaining is then distributed in accordance with the equity distribution in the normal way. If the company did poorly, the investor may get their funds back entirely but everyone else gets little to none. If it does well, the investor gets everything back, and then receives their share of the increase.

Once one investor gets preference shares, subsequent investors will want them too, reducing the likelihood of ordinary shareholders seeing any profit at all. Investors like them as it minimises risk in that they can get a return even if the company performance is lacklustre. Conversely, entrepreneurs and universities dislike them because it reduces and potentially wipes out any profit they can make.

"All too often, venture-based investors will create share structures that seem reasonable and equitable. However, if the business runs into challenges and/or at future investment rounds, the value of the former can be wiped out entirely at the expense of the latter. As someone once said to me 'you can end up swimming with alligators when you take investment from some of these people'; i.e. the investment share structure can often be heavily biased towards the investor in a manner not immediately obvious to a logical and scientifically trained founder."
Academic entrepreneur

Share and share alike

A counterpoint to preference shares is to use anti-dilution clauses, or golden shares. A university might stipulate their stake is 10%, and this will not be diluted by any rounds up until a valuation of £3 million. After this point, these golden shares would become ordinary shares and so are dilutable. Universities like this because it satisfies investors about being a low stake, but it also reduces the risk of significant dilution without corresponding growth in value. Investors and entrepreneurs dislike it because their stake will initially be diluted faster as any dilution is applied to them alone. However, the cap until golden shares apply tends to be quite low by the standards of company valuations, so it may have little impact on a fast-growing company.

Many argue for just having normal shares so that everyone is always in the same boat, with their interests aligned. However, as a first-time entrepreneur, you may struggle to get agreement for this, and these methods can be usefully deployed where an impasse is reached.

"Academic and university stakes should have equal rights. Particularly, universities should not insist on non-dilution policies which make it very challenging for a start-up to raise funding."
Academic entrepreneur

"Never agree to take funding with an anti-dilution clause attached to it, no matter how attractive this might seem."
Academic entrepreneur

Company valuation

At this stage, you will begin to discuss the value, or more specifically the pre-money valuation of your company. You will be seeking to extract as much money from investors for the smallest percentage of equity you can; conversely, the investor will be aiming for a shareholding that matches their risk appetite and return on investment goals.

When entering negotiations, you should seek to establish comparables. The best source of these will be valuations of businesses like your own who have also taken on investment. This information may be difficult to find, but Companies House records are a good first point of call, as are press releases and databases such as Beauhurst. You are looking to find sizes of funding rounds, seeing how cap tables develop.

It's important to understand that the driving force behind your investors will probably not be the same as yours. Any investor needs to be confident they will be able to make their target return, which could be as high as 10-20 times their investment over the coming five to ten years. The investor needs to be confident that the determined valuation will facilitate this sort of a return.

> **"The very best investors add industry and market insight, and under those circumstances, the university is happy to be completely hands off while seeing the value go up despite dilution."**
> *TTO employee*

The pre-money valuation of an early-stage company is generally difficult to determine, but the more novel and innovative it is, the more difficult this will become. There is no generally accepted methodology for determining a company's value, but there are a few key questions an investor is likely to ask:

- **Have you spunout before, and if so, was this ultimately successful?**
- **How strong is your IP, and are there barriers to entry in place to stop competitors?**
- **Are you generating any revenue?**
- **What is the track record of your management team? Have they managed similar businesses or had relevant experience before – if so, were they a success?**
- **Are any existing investors following on in this next round?**
- **What contracts/deals with customers and other companies are presently in place, and what are the details of these?**

If you're equipped to navigate these questions when they come with a well thought-out plan, you stand a better chance of improving the valuation of your business and thus minimising your dilution. At the same time, it's important to be realistic and well informed when negotiating, and not lose track of the additional value potential investors can add to the business.

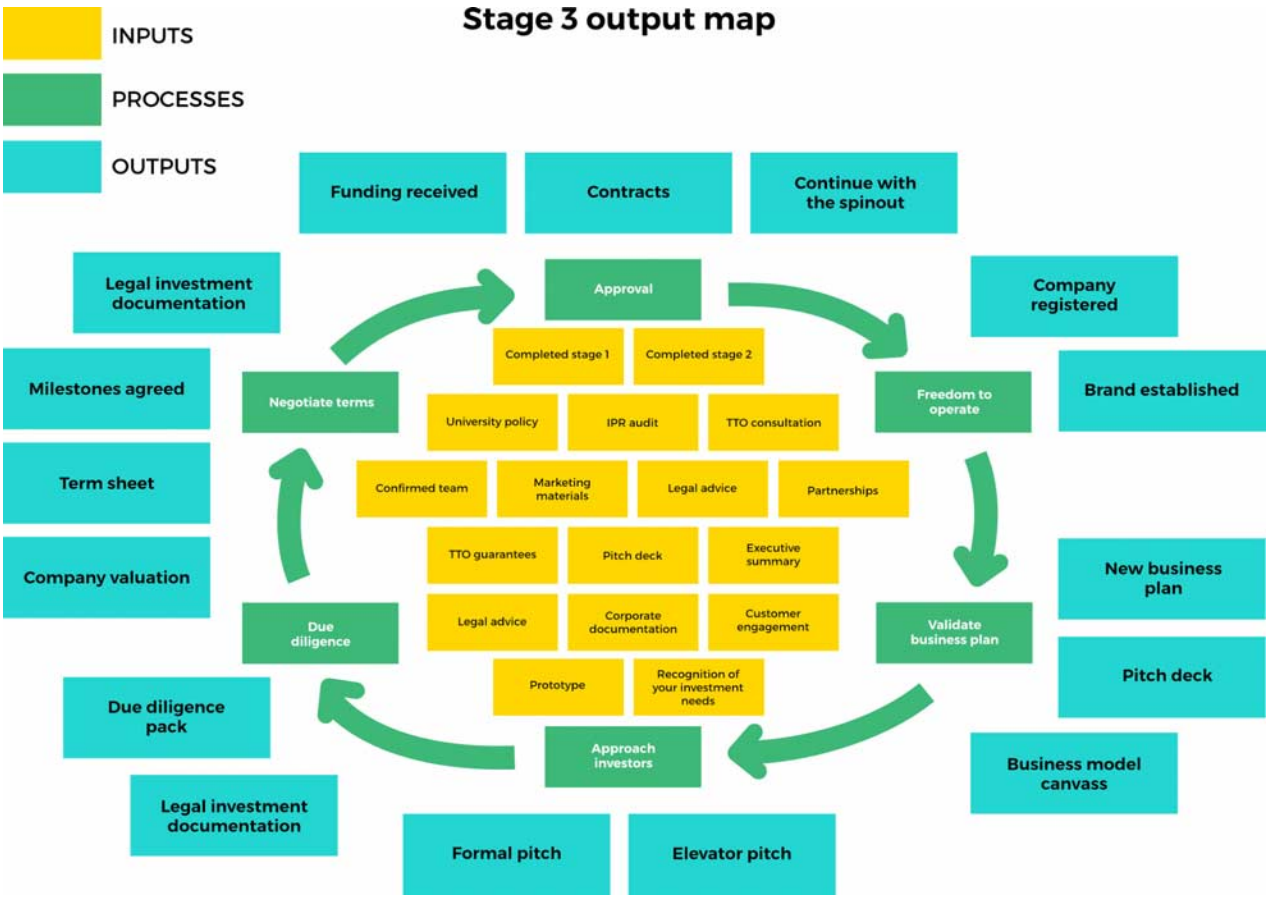
Key takeaways

This chapter shows that there are significant points of contention that can arise throughout the negotiation process. Getting all parties to meet early will be helpful, but if you can't get them in the same room, you should at least be aiming to get them to express their needs to you before looking to move towards a common footing. You need to understand what you, your founding team and each other stakeholder wants to achieve to move forward as a collective. It's not just about you getting on well with the TTO or investor – you must also be the linchpin that binds all parties.

There are a number of significant takeaways you should take from this section, but we would suggest you focus on the following:

1. There is no right answer to the equity split discussion. However, assess early what you will accept for yourself and determine whether or not that is achievable.
2. Will the core team be motivated by the offer and is each of the proposed shareholders really committed to making a future contribution that's commensurate with the equity that they will receive? Consider this early, including what role each member will play in the long term, and what each needs to motivate them.
3. It helps if both sides have experience in such negotiations and can take a pragmatic approach. Ultimately you all want the same thing (a successful spinout), so keep the focus on that.
4. Rightly or wrongly, the lower the university's stake, the higher proportion of investors that will be interested. Try to confirm the university's standard policy and processes early, so you can focus your time on approaching suitable investors.
5. Understand what support your TTO is offering to continue to provide, gathering feedback on how effective that support has been elsewhere by talking to previous spinouts. This evidence may support the TTO's or the investor's position, and you should be open to each.
   Gather evidence on previous spinout deals.
6. Understand how your proposal is similar or dissimilar to them, and how that factors into the TTO's desire for fairness and consistency.
7. Try to recognise what will happen next with your founding technology, and to what extent you will you continue to need it in years to come.

The entire stage 3 process – How do you get approval to spinout?



Stage 3 checklist

This list is indicative only and should be adapted both to your needs and the university's process.

1) **Incorporate a company:**
   - ✔ **Company name**
   - ✔ **Articles of association**
   - ✔ **Create a basic website and dedicated social media profiles**
   - ✔ **Obtain a dedicated phone number and email address**
   - ✔ **Build company email accounts and order business cards for yourself and other founders**
   - ✔ **Buy software packages required for business operations**

2) **Secure office and / or lab space**

3) **Open a business account and register for VAT**

4) **Select which forms of finance you will look to raise:**
   - ✔ **Seek grants and/or investors, aiming to gain interest from competitive parties**

5) **Speak to as many sources, financing bodies and individuals as you can**

6) **Prepare your executive summary**

7) **Prepare your pitch deck**

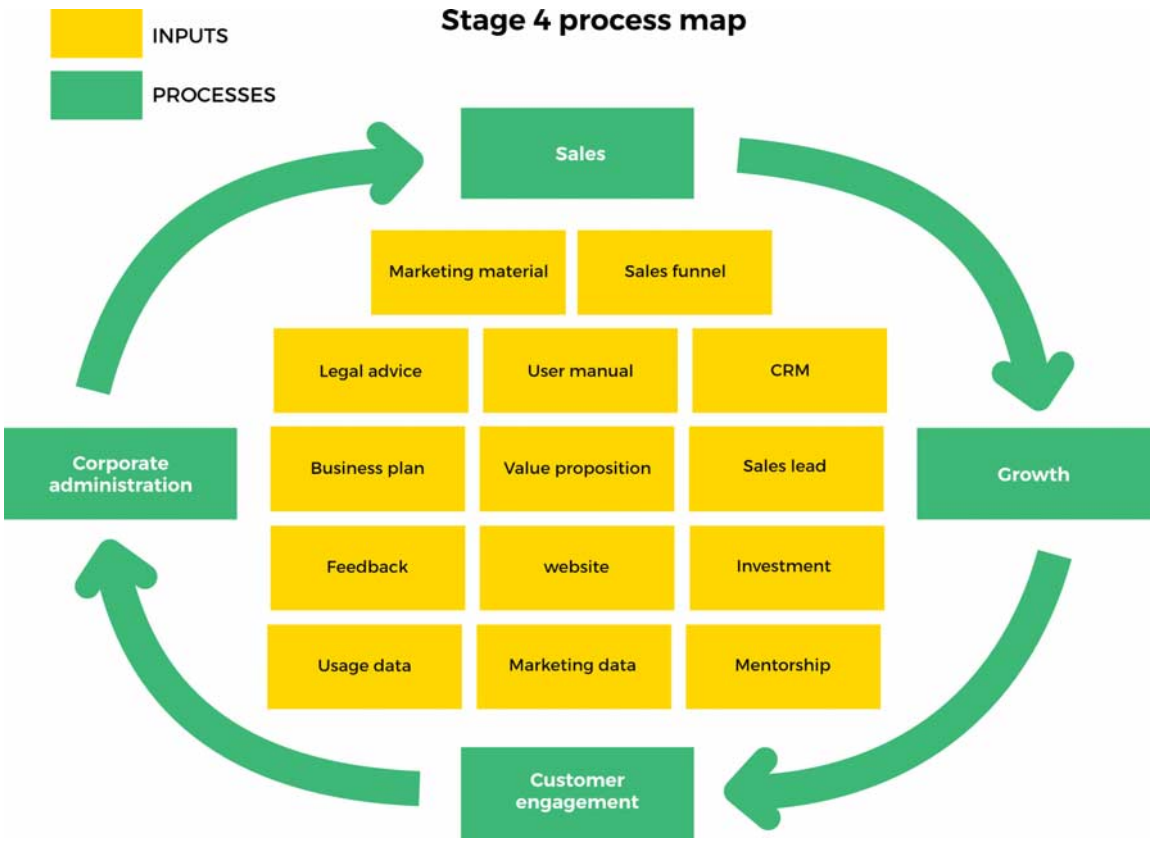
8) **Determine which investors you will look to approach:**
   - ✔ **Develop due diligence pack**
   - ✔ **If VCs or angels are being approached, develop and rehearse a pitch**
   - ✔ **Negotiate your term sheet and valuation**
   - ✔ **Finalise the terms and ensure all investors are happy with the performed due diligence and due diligence pack. This should include:**
     - **Business plan**
     - **Patents, status and warranties on their viability, including information on any licenses to this IP that have been granted or are in negotiation**
     - **Board minutes, and any special resolutions passed**
     - **Financial accounts**
     - **Details of current shareholdings**
     - **Existing contracts/relationships with external parties (if any)**
   - ✔ **Finalise investment documentation and secure money transfer**

Resources

For a full set of resource links, visit the online version of this handbook:
https://reports.raeng.org.uk/entrepreneurs-handbook/resources

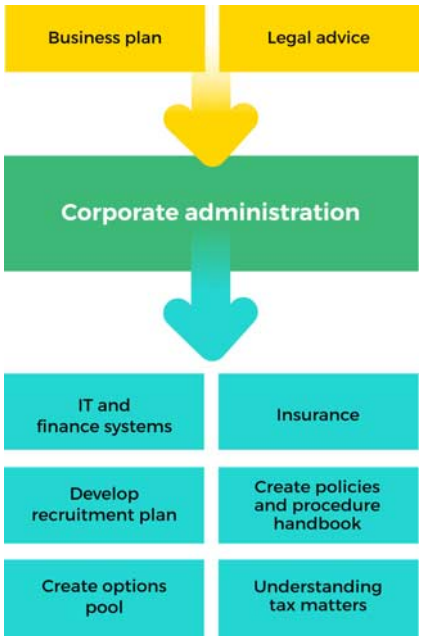
STAGE 4

How to grow the business



Corporate administration

At this stage in your journey, if cashflow is sufficient, you might be looking at hiring managers to take care of expanding responsibilities in areas like human resources, IT and finance. You will have considered these topics earlier in the journey, and it's now time to implement them.



IT and finance systems

Essentials like a website and payroll should already be in place. In addition to this, you're going to need to register for VAT, purchase licenses to the various software packages your company will use and then look at financial obligations. You will need to register as an employer for PAYE (Pay As You Earn) and NIC (National Insurance Contributions) in relation to your employees, more information on which can be found on the HM Revenue and Customs website. To do all of this, you're going to need to implement appropriate bookkeeping and accounting support to ensure you're fully compliant with current legislation. In short, seek advice.

Human Resources (HR)

Until you have a dedicated HR manager or equivalent service, you're going to have to make yourself aware of all relevant government regulations that exist. It is recommended you compile a company handbook comprising all your policies and procedures, and a workplace pension must be in place. One extremely important area that must be implemented and policed will be your health and safety policy. The law places responsibility on organisations and employers, which means directors can be held personally liable for any H&S breaches. More information can be found here.

Plans for ongoing recruitment will also need to be considered. This process can be time-consuming, expensive (if you use a recruitment agency), and even more expensive if you get it wrong with a bad hire. Be sure to include a submission deadline in your adverts, which many of our awardees neglect to do. Many applicants wait until the last minute to submit, so you must instil a sense of urgency within them.

As a small company, you can't compete on pay and benefits, and can only offer so much equity. Instead, compete on company culture, impact, and an inspiring vision. To establish the desired culture, some leaders participate in the interviews for all of the first hires, and design the interview to test culture-fit rather than just skills. You'll need an onboarding process for new hires to get them up to speed quickly – with your small size and low cashflow, you need them to become productive team members quickly.

"One of the largest challenges is to find C-suite managers that bring commercial skills into the business to drive it forward and get the company to market. This is why efforts should be placed on finding these people. A large options pool should be put in place for these hires, so that they are able to work in the business from an early stage. Exploring interim roles is also a possibility."
VC investor

Insurance

Any new company is going to have to consider taking out insurance to protect against the impact of loss or damage to assets or liabilities incurred through daily operations. Investors may insist certain insurances are in place prior to their investment. There are certain types of insurance (such as employers' liability) that are compulsory for any business, and there will be a handful of others that investors might insist you have in place depending on your sector. Examples include public liability insurance, equipment insurance, buildings and

contents insurance, goods in transit insurance, product liability insurance and so on. More information on insurance types and providers is available here.

At an early stage, you will want to compile an inventory of assets and areas of liability exposure, seeking guidance from a professional regarding an appropriate level of protection given your situation.

Three core insurances you will be expected to have include:

1. **Key Person Insurance – covers the costs of incapacity, illness and death of essential team members such as a CEO, founders or key researchers. Often requested by investors.**

2. **Employers Liability Insurance – protects against claims from employees for accidents and sickness suffered as a result of working for you, or on one of your sites.**

3. **Directors and Officers Insurance (D&O cover) – Protects directors and officers from loss resulting from claims made against them in relation to their duties in their roles. Any company director will want this to be in place.**

Personal tax matters

It is important to understand HMRC are likely to consider the shares you acquired at spinout to be a benefit by reason of your employment, and therefore subject to income tax if their market value rises.

It's also worth noting that the value of IP transferred into the company is essentially ignored on the basis of a Researchers Tax Exemption. Talk to your TTO and tax advisors, as they can assist with how best to set up the company. Getting this wrong can be very costly to you personally.

Company tax matters

The company you register is a separate entity to you as an individual, and it will need to pay tax on its profits. These are calculated from a self-assessment tax return, which you must submit within 12 months of the end of your defined accounting period. When starting out, the allowable expenses of the company may be more than its turnover; it will effectively have tax losses rather than profit, and no corporation tax will be payable.

R&D tax credits may also be available to research-intensive companies paying tax in the UK. There is also Patent Box, which can offer tax breaks for companies commercialising patented inventions, as well as a range of other available schemes. This is another area in which you will benefit from (and should seek out) specialist tax advice.

Share options / Options pool

This is where you set aside a certain number of shares, and define rules governing how employees can buy or earn a specific number of shares at particular points in the company's life. Examples might include after working for the company for a set period of time, achieving a particular goal, or at point of sale or exit. These can be used to either entice new senior employees to join you, or reward existing employees for good performance.

This can be a good method to break equity stake deadlocks between academic founders, who often expect to receive equal shares but are not necessarily committing the same amount of time to the project. Asking everyone to take 5% less and allocate the remainder to an option pool (to be earned for reaching specified value-creating milestones) can be more agreeable than a direct request for them to reduce their stake and allocate it elsewhere. Options pools won't dilute the existing shareholders' stakes if you bring new staff on board and give them shares, as those shares had already been earmarked.

Sales and marketing

Selling is a skill, and like all skills, it takes time and practice to become good at it. As an academic, you are likely used to collaboration and the free exchange of knowledge, so the mindset of only releasing your knowledge for payment is potentially unappealing. However, this is a mindset you must embrace. It's highly likely that the initial sales will be made by the founding team members, rather than sales professionals who you are yet to hire, so you need to learn the process and become comfortable with it. Additionally, if you understand the process, you will be better able to hire the right people and know how to manage them.

A classic error we often see academics make involves taking their objectively better product, and significantly undercutting the competition with the intention of capturing a large section of the market. This massively reduces your potential for profit and shows a complete lack of commercial acumen. If it truly is better, why sell it for less than the customer has demonstrated a willingness to pay, or deliberately make less profit? Less profit means you grow more slowly and deliver your product to fewer customers, reducing your impact. This may seem greedy to an academic used to the free exchange of knowledge, but it's a change of mindset you may have to make to succeed in business. Investors will certainly see this approach as a potentially fatal flaw.

To market, to market

Before you can even start selling, you need to engage in marketing. While few people say they like being marketed to, the reality is you have probably heard about almost every type of product you've ever bought before you bought it – even if you ultimately bought a different brand. If you ever wondered how a company with an objectively worse product is still in business, it may well be good marketing.

Marketing is a fairly broad term whose most obvious component is advertising, either through paid promotion or passive advertising via a website. As few spinouts have the funds for an advertising campaign or marketing team, a good website clearly articulating what problem you are solving (and for whom) is a great way to start. Even if you don't have a product ready to sell yet, give potential customers a way to get in touch or register their interest. Not only will this give you a contact list once you're in a position to start selling, it provides great validation to investors that people are interested and seeking your product out. Potential customers lining up for more information is much better proof of a product's desirability than you saying it's desirable!

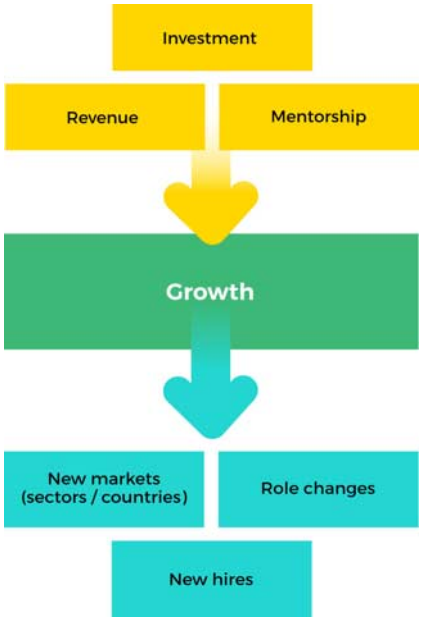
Sales involves related areas like contracts, supplier management, manufacturing, aftercare, customer management, returns policy, user-manuals, training and learning from feedback. Each of these stages costs money that will influence your sales price. It's a complicated world in and of itself, and you should look to hire an expert fairly early on in your journey. Be sure to examine what you learned during your market research, proof of concept and customer engagement activities. They will all feed into your approach, which will be different for each market and generally evolve over time.

"My more successful companies bootstrapped, so one lesson would be to think carefully what investment is needed and for what, and is there any way of getting customers to pay in advance."
Academic entrepreneur

Growth

The growth phase of a company is very different to starting up. We won't cover it in any detail, except to say that as your business grows in size and reaches new markets, the skills required at management level will change. It's important to understand you will need to move people on, and bring in new staff according to the demands of the business.

Business skills differ from research skills, so once the initial founding team is confirmed, future appointments should be based on identified skills gaps rather than simply drawing from the wider research team. This may include the evolution of your own role and position, according to the needs of the business. Bearing this in mind is important throughout your journey; there may come a time when it's right for you to take a step back for the good of the business.



"Get a good mentor – someone who has done it before, has lots of experience and is prepared to meet with you regularly, say every couple of months, for a proper sit down and a look at what you are doing."
Academic entrepreneur

The growth phase is a good time to reconsider any mentors you may have as well as the makeup of your advisory board – does is still contain the right mix of skills and experience for this phase of the journey, and are they all fully engaged.

The top tips we've identified for building your team are:

1. **Don't work alone. Use your network of partners, mentors and coaches to help you find a team.**

2. **Carefully consider the chemistry of your team and their complementary skills. You don't want a group of people all good at the same things, such as all academics.**

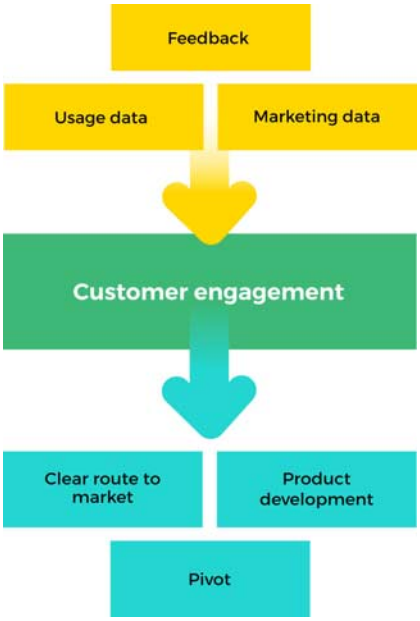
3. **Hire the best talent you can. This will cost money, but so will an unproductive team.**

"Get as much help as you can. Be determined. Have faith in yourself. Take all advice with a pinch of salt. De-risk to create value. Try to be realistic about timeframes and resource requirements. You must ensure that there is a market for your product, but ultimately when you are pre-revenue, you will be judged on how far you are on the product development journey. Take as much free stuff as you can. Hire people – they are the best. Good luck."
Academic entrepreneur with three fundraisings of over £3.9 million

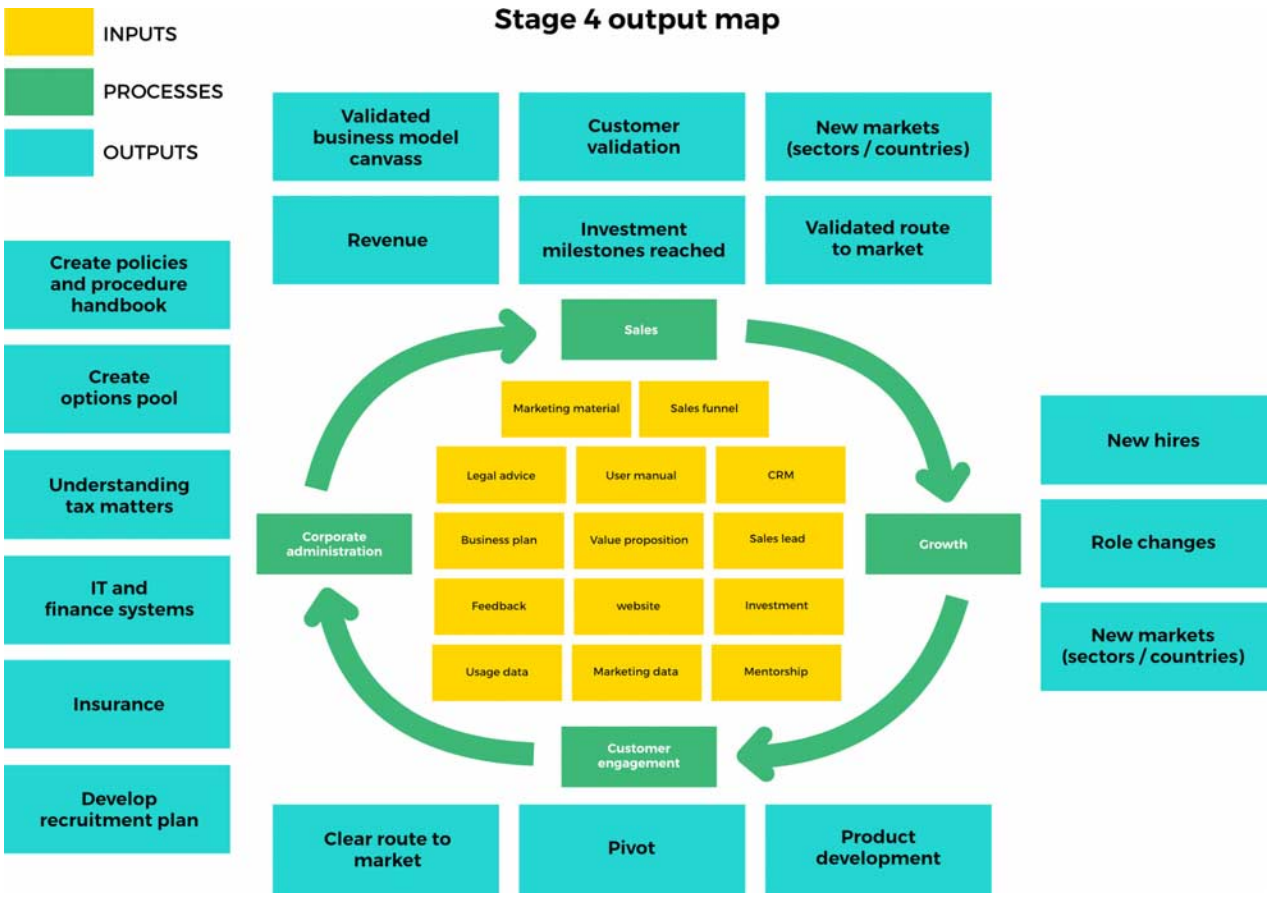
Customer engagement

This ties in closely to the work through early customer engagement, sales and proof of concept, so we won't repeat those ideas. The key point is to keep an open mind, gather data and feedback wherever you can, and be prepared to pivot the business accordingly. This is where you learn what is valued by your customers about your product; what marketing, sales and aftersales processes are effective; and if there is a viable business here.

This feedback influences the product development roadmap – not your own ideas of what the customers should want. Unlike many of the activities described in this guide, this one will be a permanent feature of the business – you should never stop engaging with your customers. The data gathered here will be crucial in any fundraising attempts or growth strategies. It's never too late to change the direction the business is heading in if that's the best course of action – if a different market, use case or technology is identified.



The entire stage 4 process – How to grow the business



Stage 4 checklist

This list is indicative only and should be adapted both to your needs and the university's process.

1) **Set up company IT:**
   - ✔ **Website**
   - ✔ **Social media platforms**
   - ✔ **Email addresses**
   - ✔ **Purchasing software packages**

2 **Proceed to build out company branding:**
   - ✔ **Design a logo**
   - ✔ **Develop PR and engagement strategy**
   - ✔ **Build out the website**

3) **Set up insurances for areas including:**
   - ✔ **Liability**
   - ✔ **Key person**
   - ✔ **D&O (Directors & Officers)**

4) **Compile a company handbook covering:**
   - ✔ **H&S policy**
   - ✔ **Grievance procedures**
   - ✔ **Disciplinary procedures**

5) **Implement a workplace pension scheme**

6) **Timetable regular boardroom meetings**

7) **Begin forward planning for areas such as:**
   - ✔ **Your yearly budget, seeking approval from key stakeholders**
   - ✔ **Your fundraising timetable, including which types of finance you are seeking**
   - ✔ **Recruitment requirements:**
     - **This will include writing employee contracts and non-executive director contracts**
     - **Future recruitment timetable**
   - ✔ **Appoint a long-term company secretary**
   - ✔ **Recruitment requirements**

8) **Ensure all legal documentation is in order, including:**
   - ✔ **Report to Companies House and HMRC as required**
   - ✔ **Make sure you understand your responsibilities as a director**
   - ✔ **Carry out H&S risk assessments, and establish procedures to comply with issues raised**
   - ✔ **Select IP agents, planning ongoing IP development and protection**

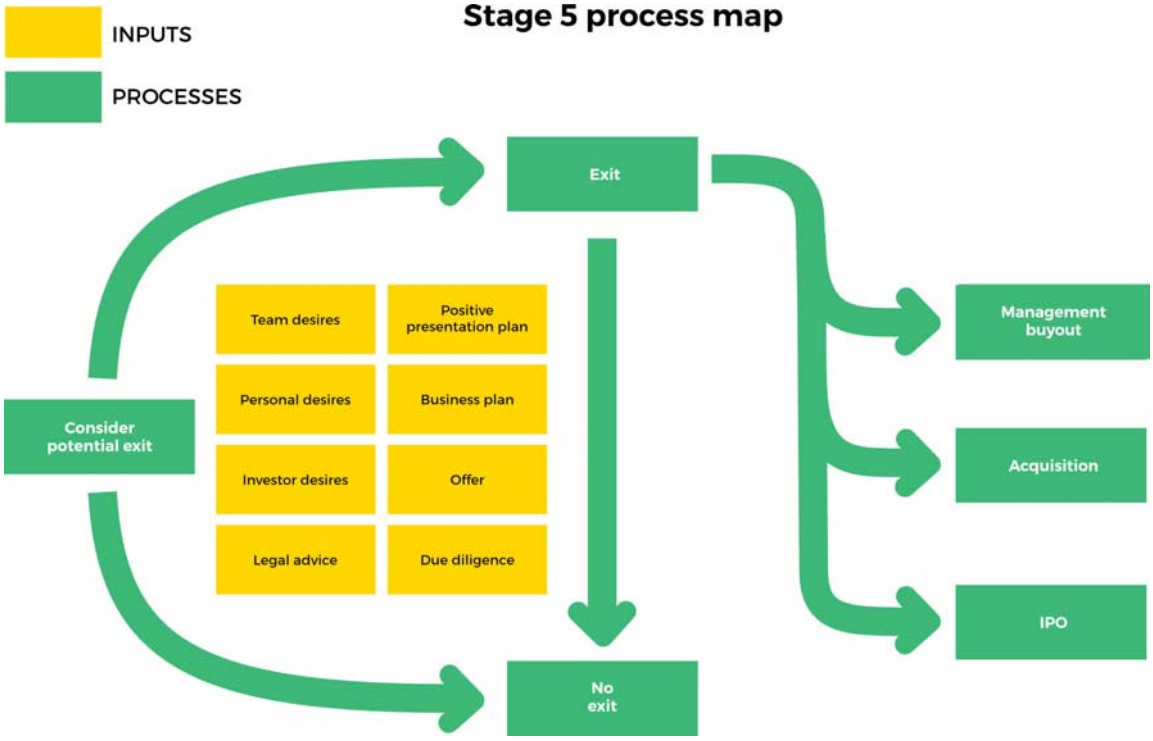
Resources

For a full set of resource links, visit the online version of this handbook:
https://reports.raeng.org.uk/entrepreneurs-handbook/resources

STAGE 5

What comes after success?

Stage 5 process map



Why so keen to leave?

As soon as you mention to people you're starting a business, they'll start asking 'how do you plan to exit?' What they really mean is 'how will you get the profit out of the company and into your/my bank account?' It may seem a little demoralising to be asked about leaving before you've really got started, but the 'exit' doesn't actually have to be the end. It's good to know the final goal of a journey before you set out, so you can best prepare for it.

The first point to note on exits is that it's not the only option available to you – it's entirely possible to stay with the company forever, as an owner or employee. As with many decisions, there's no right or wrong answer as to which path you take. There isn't much useful advice we can offer here if you choose to stay, other than being aware that your role may change significantly over time to best meet the ambitions of the company and make best use of your skillset. The following section will cover what happens when you do exit.

There are several forms an exit may take, each of which can result in you remaining an employee of the company. An exit can be better thought of as a change-of-ownership-event – the moving of money and power, rather than of people.

Much like the rest of your journey, each stakeholder will have their own hopes as to what exit type to pursue. This will largely be governed by the ambitions of each stakeholder and their motivations for becoming involved. These are briefly summarised below:

Investors are interested in a financial return, normally within a specified timeframe and for a target multiple of their initial investment. For them, an acquisition or IPO is the likely preference. Angel investors in particular may also be motivated by seeing a new entrepreneur emerge at the end of it all, and any investor may be interested in societal benefits that result – typically (but not always) a secondary concern.

Universities have a broader definition of 'impact', which can take many forms. As with investors, additional income is a goal, and any income received would be free from the normal restrictions that public money comes with. A portion of the income will likely go towards covering the expenditure incurred in commercialising the technology – patents or the TTO's administrative costs. They also want to demonstrate the successful adoption of technology for submission to REF as an impact case study, which can be worth £300,000 in additional funding. Adoption also creates societal impact, job creation and a positive impact on the local ecosystem; as charities, all of these are of interest to a university. In the longer term, it creates strong links with industry, role models for other academics, case studies with which to improve teaching and potentially graduate placement schemes.

On a personal level, rewards and returns may include any of the above. You can also include job satisfaction if you believe you will find the role enjoyable, enjoy learning new skills or if the technology addresses a problem you're passionate about. To date, 79% of Enterprise Fellowships end up leaving the university to join the commercial world. Some people clearly prefer it to academia, although our programme is unusual in that we seek out those who specifically want to be the CEO.

"Investors are important in the process; however, they can drive the spinout to be something the founders do not want it to be. They both want an exit, but the path the investor sees is different and that can cause conflicts. On the other hand, an investor that spends time to understand the founding team and supports them in realising their vision is the basis of a successful relationship."
TTO employee

Minority report

You are likely to hit a point where it's not your company any more (if it ever was), so the decision to exit may be completely or partially out of your hands. If investors own more than 50% of the business and they want to exit (subject to the articles of association and any drag along rights), it's going to happen. With exits being inextricably linked to money, bitter disagreements can arise. While not the most exciting work at the time, the legal documents put together prior to this point will save a lot of hassle by preventing unnecessary disputes and friction, or establishing rules to handle them.

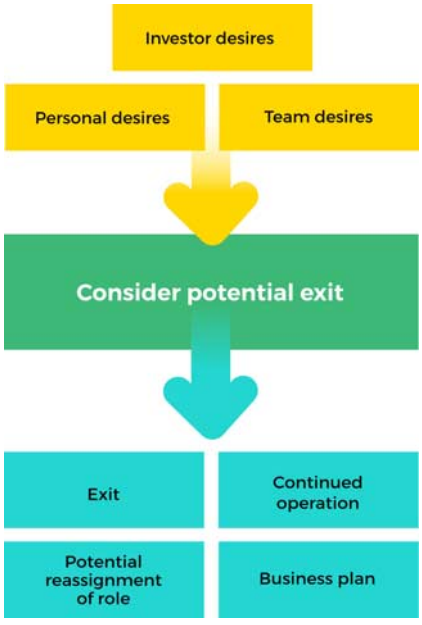
Worth considering in any exit is where the real value lies. It might be in the people, the brand, or the IPR. If it's the IPR or brand, then it's probably well documented already. If it's the people and their knowhow, it becomes more complicated. You should guard against yourself or anyone else becoming indispensable to the company as a single point of failure, lest they become a liability. This can give the individual too much power in any negotiations, a risk investors will look out for, as they could leave or fall ill. At the other end of the spectrum, this can make you feel obligated to stay, or work long hours and suffer burnout.

You will need thorough documentation and a succession plan to de-risk the company, thereby increasing its valuation. Any exit negotiations may well stipulate the continuation of certain key staff, to ensure a smooth transition period.

Finally, although it's good to have a plan at the start, you don't have to stick to it. You are free to adapt to the circumstances as they present themselves. The reason you should consider your exit strategy now is because it's such a common question to hear, particularly from investors. If you say "I don't know, I haven't really thought about it", they are unlikely to be impressed – let alone give you millions of pounds to put an incomplete plan into action.

Consider potential exit

There are four primary reasons why you need to know your preferred exit strategy early, and to begin planning for it:



1) You must consider your skillset and experience, as well as what you enjoy doing for work

As a company grows, the skills required to run it change. Managing a close-knit team of five colleagues is radically different to running an organisation with hundreds of people spread across multiple locations. You probably don't have those skills (yet), so be prepared to either learn them, ask for help, or step aside and let someone else take over. Investors will be aware of your experience thanks to that extensive due diligence process; if they don't believe you are currently capable of running a large company, they will be keen to hear your plan to address this. Know your weaknesses, and surround yourself with a diverse team that compensates for these deficiencies.

2) It's essential to get the team aligned

You may well be a founder, but as you now know, this is a team effort. You all need to be on the same page and aiming for the same exit, or at least narrowing down the possibilities, as the end goal permeates much of what you do. You don't want board disputes (or office politics) interfering at crucial moments, or progress will suffer. Different routes to exit can benefit from different approaches; for example, if you want to be acquired, you want to stay on good terms with potential acquirers and insert yourself into key positions within the market.

By becoming a key supplier to the ecosystem, it becomes more attractive to buy you out rather than the alternatives of reducing their profit by repeatedly paying for your services or undertaking an expensive process of trying to replicate your expertise. An acquisition also prevents competitors benefitting from the edge you provide, so strengthening your acquirer's position. The IPO route suggests a focus on increasing revenues and product lines and demonstrating the potential for rapid growth. Having an agreed vision gives you a single lens to consider all decisions through, and what strategy to take.

3) The business plan itself will be heavily influenced by the exit strategy

The timing of the exit and expected returns on investment will dictate the required growth, what products you release first, and in what markets. Different tasks have a greater and lesser impact on valuation, and involve greater and lesser risks, so will dictate what you pursue and when. Any investors will have strong views on this, as they will have broad deadlines and a desired return on investment. You don't want investors trying to pressure you towards an early sale to meet their deadline if this doesn't align with your own expectations.

Do you want the 'quick win' of proving the product works in an easy to reach market, before letting the acquirer handle perfecting the product and delivering at scale? If so, you potentially don't need to plan for raising investment for scaling, or manufacturing it yourself. You may not need to sort out how to export to new markets, and so forth. This route might sound unambitious, but in some sectors it's the most sensible route if scaling yourself is prohibitively expensive. If your exit is further off and will require multiple investment rounds, you'll want to choose a lead investor who can also lead on following rounds, who has a long-term horizon and who you can happily work with for many years.

4) Investors want their money back, for which an exit (or dividend) is essential

A common fear for investors is that the company will take the initial investment to grow and become a self-sustaining successful company, at which point the management team are content with their lot and allow the company to plateau or grow relatively slowly at single-digit percentage figures. Without sustained and strong growth, the company valuation is unlikely to beat investing in the stock market; the investors may as well have invested there instead. The founders may well be happy in their stable and fulfilling job, but investors will be sorely disappointed that their funds are locked away and for all intents and purposes unreachable to them. Having a genuine and ambitious exit plan will go a long way to assuage their fears.

Which exit you want is entirely up to you and your co-founders at first; there is no correct answer, and everyone has their own preference. Your answer may well change over time for a variety of reasons, so be sure to check in with the core team periodically. What's crucial is that you have thought it through and are proceeding accordingly – you won't inspire confidence in an investor or new hire if you haven't even thought about this. If you want to sell a company for ten million pounds, that doesn't happen without a plan. Gather data on other exits by similar companies so you can best make your case to the team and investors, then record suitable metrics to assess if you are on the correct path. There is no need to narrow it down to a single plan as they are not mutually exclusive, but make sure you know what the options are and if you are on track.

"Talk to others who have done it; expect to do everything yourself (including the bits you know nothing about); make absolutely sure you've understood the potential market, what share you can expect to capture and how quickly (or how quickly you can exit). These are the only things investors will really care about. Try to get advice from entrepreneurs in residence as to whether you really have an attractive BUSINESS proposition, as opposed to a really good invention. Just because there is large potential societal benefit doesn't necessarily mean it is commercially attractive."
Academic entrepreneur

IPO

An initial public offering (or IPO) involves listing your company on a stock market. It's a commonly discussed form of exit, while also being the least common occurrence by a significant margin.

For reference, there are currently just over two thousand companies listed on the London Stock Exchange, so they are almost as rare as spinouts themselves. Despite being well-established in popular culture, this is the least likely outcome, so stating it as your aim from the outset may come across as naive.

In an IPO, a privately owned company is turned into a publicly traded one. Any shareholder will then have the option to trade their shares on the open market. This is a complicated and lengthy process with significant due diligence involved and expert advice is a necessity, but it's a long way off for now.

Acquisition

This is where another company, usually larger and more established than yours, buys your company. This could be to gain access to your IP or your team, to remove a competitor, insert themselves in a new part of the supply chain, or simply to gain access to your sector.

Displacing a major multinational corporation is going to be a hard business plan to sell to investors, but inserting yourself into an ecosystem by solving an unaddressed market can make you an attractive acquisition target. Acquisitions can often be in pursuit of a top-notch team, as much as a product. Make sure you've been hiring the best talent you can, and that each member of your leadership team is adding tangible value. In any case, core personnel would typically be expected to continue working for the new company to ensure a smooth integration, and there are laws protecting employees.

If this is a route you'd be interested in pursuing, engaging with someone to help market and sell the business could be an option. However, this is rare and may not deliver the strongest return. It probably won't be your call on when this happens, as a third party may approach you.

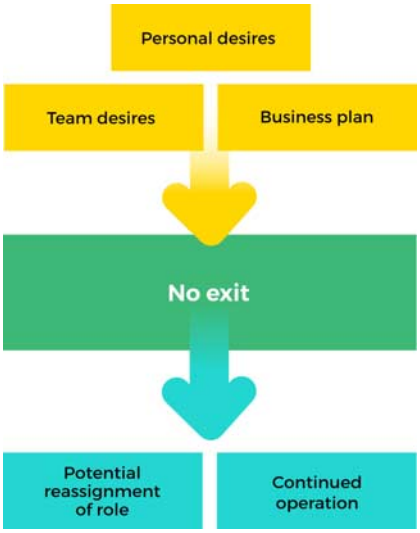
A management buyout is similar to an acquisition, but the buyers are the senior staff currently working at the company. Part of the existing leadership team would purchase your equity stake from you and take over the running of the company. The investors can sell their shares to other investors, but that has less immediate impact on the management team other than corresponding changes to board membership.

No exit

The final option is to not exit at all, whereby you stay with the company from initial conception through scaling and growth to national and international success.

While this is an entirely possible outcome, you should be prepared for your role within the company to change dramatically over time. A lifelong career in any organisation would involve changes of role; just because you're a founder doesn't mean you would stay in the same role or be part of the leadership team forever.

Another potential outcome could be a profit-sharing or dividend-based approach. This is not strictly speaking an exit as such, but we mention it here for completeness. This is a method for all shareholders to profit from their investment without selling any shares. The board chooses to redistribute a percentage of the company's profits to the shareholders in proportion to their stake, normally on a biannual or yearly basis. The downside is that it removes profit from the company which it could use to grow further.



Yet more due diligence

Whichever exit mechanic you take, more due diligence will be required, and naturally the amount of work involved will be commensurate with the purchase price.

The process will almost certainly be conducted by a third party, and they will be using an even finer tooth comb than the university and early-stage investors. This process will be measured in months, not weeks. It's extremely important that you seek help at this stage, and ensure it's not the same help you used previously.

Depending on the exit route, there may be an intermediary to facilitate the exit, which is especially likely for acquisitions. This third party will conduct initial due diligence, and will only let each party know who the other is when this has been completed. This is a step taken in an event where one competitor is taking over another, preventing the competitor conducting comprehensive due diligence and learning everything there is about their rival before pulling out of the sale and going away to carry out the work themselves.

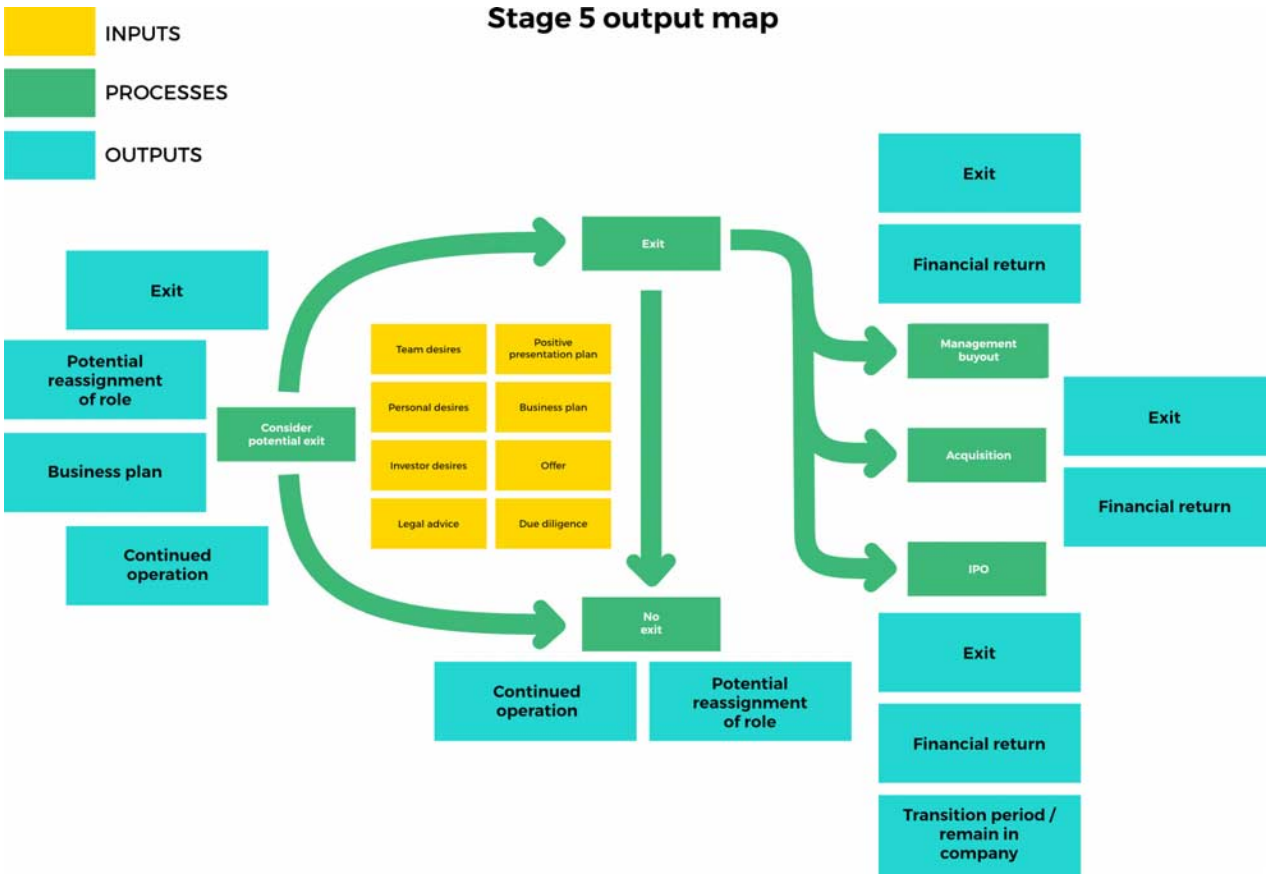
Agents that offer such services include lawyers and small-scale investment banks.

Transition period

Regardless of the exit route you choose, this process will take time. Even when you're selling the company directly, a clean break is rare.

Your business is more than a collection of people, patents, offices and documents. It's also undocumented know-how and relationships which the acquirer will want to fully understand before you leave, as they only have one official chance to capture it all. You and other key staff will likely be expected to remain in post for a period to ensure a smooth transition, quite possibly in a different role as you take more of a back seat.

The entire stage 5 process – What comes after success?



Stage 5 checklist

This list is indicative only and should be adapted both to your needs and the university's process.

1) **Consider exit strategy and understand the efforts required for each route:**
   - ✔ **Understand the exit desires of any investors, co-founders and other significant equity holders**
   - ✔ **Know who could acquire you**
   - ✔ **Know how competitors have exited**

2) **Update business plan according to exit strategy**

3) **Contact relevant legal experts to assist with required due diligence**

Resources

For a full set of resource links, visit the online version of this handbook:
https://reports.raeng.org.uk/entrepreneurs-handbook/resources

Glossary

Articles of Association
These form the constitution of the company. The Articles govern the internal workings of the company, and set out the rights attached to shares in the company.

Business Angel
A high net worth individual who is seeking companies in which to invest with a view to making a large capital return.

Business Model
The road map giving an overview of the business proposition, how it will be achieved and sustained.

Business Model Canvas
A tool used to visually represent a business model and its key components.

Business Plan
A plan including financial projections and market information relating to a company. This will be one of the principal documents an investor will rely on in deciding whether to invest in a company.

Cap table
Also known as a Capitalisation Table, this depicts the share ownership in a company, so the types of shares, who owns them, how many they own, and the value of those shares.

Chair (Chairman/Chairwoman)
The director appointed by the board of directors to act as its chair. In practice, this is a position of great influence. They will be involved in determining the agenda for board meetings and ensuring the board operates in an efficient manner. In public companies, the chair is expected to be someone different from the Chief Executive/Managing Director, and this is widely mirrored in spinout companies.

Chief Executive (CEO), Managing Director (MD)
These are terms for the director of the company who has day-to-day responsibility for company management.

Chief Financial Officer (CFO) or Finance Director (FD)
Terms for the company director who has responsibility for financial management and reporting of the company, including the production of financial information required by investors such as management accounts and cash flow forecasts.

Company Secretary
The individual who has various obligations relating to the duties of the company to file documents with Companies House. A private company does not necessarily need a company secretary.

Copyright
An IP right which arises automatically. It does not protect ideas, only the means by which such ideas are expressed. Copyright may arise in and protect a whole range of works, including items such as publication papers, reports, notebooks, tables, databases, computer programs, source code and diagrams.

Designs
IP rights protecting 3D objects or designs applied to them. Design rights arise automatically if the design is not commonplace within the design field in question. Designs can also be registered if the design is new, and has individual characteristics.

Design Rights
Provide protection for the visual appearance of products. There are also registered rights which confer a monopoly, as well as unregistered rights which give lesser protection.

Drag Along Rights
Rights available to shareholders holding a specified majority of the equity share capital, which require other shareholders to sell their shares whenever the majority sell their shares (provided the same terms are made available). These are also sometimes known as "come along" rights.

Due Diligence
Detailed analysis and appraisal of a company's background, its IP, its management and business plan.

D&O
Directors and Officers, usually in reference to liabilities insurance.

ICURe
Innovation to Commercialisation of University Research is an Innovate UK-funded programme that partners with early career university researchers with the aim of providing support, guidance, feedback and up to £30,000 in funding to help conduct market research and customer discovery.

Incubation Stage
A phrase that can be used to describe the early phases of a startup or spinout's life. Can also refer to the part of the startup process where a spinout's principal activities are no longer appropriate for location in the research institution, and have to physically move to a dedicated startup support premises (called an incubator).

Intellectual Property
A category of property that includes intangible creations of human intellect that comes in many forms. The best-known types are copyrights, patents, trademarks, and trade secrets.

Intellectual Property Rights, or IPR
Rights given to legal entities over intellectual property they created or own. They typically offer the owner an exclusive right to the use of the creation for a certain period of time.

Invention Disclosure Form
A confidential document specific to your university, submitted to the Tech Transfer Office describing a new invention, its advantages over existing tech and who the inventors are.

Investment Round
Any time funding is raised from investors, of any type, its called a 'round,' and is often preceded by a drisptor indicating the stage the business is at, e.g. pre-seed, seed, A, B, C.

License
Permission granted by the owner of intellectual property (IP) that allows another party (licensee) to act under some or all of the owner's rights, usually via a written legal document (the license).

Memorandum of Association
Sets out the intention of each of the first shareholders to form and take shares in a company.

Non-Disclosure Agreement (NDA)
A legal agreement which protects the exchange of confidential information between two or more organisations. This is typically a bilateral agreement.

Non-Executive Director
A director who has no role in the day-to-day operation of the company but usually attends board meetings and becomes involved in the strategy for the business as and when required. An investor will normally appoint at least one non-executive to the board, for which they usually receive a fee.

Observer
Someone appointed by a third party, such as your institution or one of the investors, to act as the eyes and ears of the appointer. Depending on the company's Articles of Association, they may or may not have the right to speak at board meetings. As they are not a director, they will not have the right to vote at board meetings.

Patents
Registered rights protecting inventions for products or processes, within a specific country or region. Details of all UK patents (or applications for patents) are held by the UK Intellectual Property Office.

Pivot
In the commercial world pivot means to change the business model, product or service in some way, normally off the back of learning some new information that demonstrates the current plan is not optimal.

Preference Shares
A class of share to be paid which is entitled to a dividend of a fixed amount with priority over any other dividend. Such shares may also be redeemable, where the company will effectively buy them back at a fixed price over a period of time.

Proof of Concept (PoC) Principle (PoP)
The activity which takes an idea (usually expressed in a development proposal format) to a state whereby the idea can be demonstrated in some way. An example might be a prototype that can generate sufficient data to show the idea has merit, meaning further funding to develop proper working proposals is justified. This is regularly called Proof of principle (PoP), although PoP customarily describes a slightly later stage. PoP and PoC are sometimes used interchangeably.

Pre-Money Valuation
The negotiated value (usually determined during term sheet negotiation) of a company prior to any investment being made.

Post-Money Valuation
The sum of the pre-money valuation and the money being invested.

Seed Funding
Money sought to carry out and complete seed stage activities. The amount can range from modest sums up to approximately £1 million, depending upon the nature of the business and its underlying IP.

Seed Stage
The stage at which a business idea is being translated into working proposals. In practice, this means the production of a business model and supporting plan, the development of a prototype, the initiation of relevant IP searches and registrations, and the initial market research activities to validate the business proposition.

Serviceable Addressable Market (SAM)
The segment of the Total Addressable Market (TAM) within the geographic reach that can be targeted by a companies products/services.

Smart Money
investment funding from Angels, Venture Capitalists and Corporate Venture Capitalists in reference to their relevant knowledge of the sector and the insights they provide.

Sneakout
Only possible where the IP is purely knowhow based. The founders elect to start the company without the university taking an ownership stake. This needs to be done carefully to (a) avoid using IP you cannot rightfully make a claim to, and (b) to avoid damaging the relationship with the university.

Spinout
An academic spinout is a company that meets condition 1 and at least one condition out of 2-4:
The company was set up to exploit intellectual property developed by a recognised UK university or research institution. (This is broadly in line with the Higher Education Statistics Agency (HESA) definition of a spinoff).
The institution owns IP that it has licensed to the company, and/or
The institution owns shares in the company, and/or
The institution has the right (via an options or warrants contract) to purchase shares in the company at a later date.

Stakeholders
Individuals or organisations who are not shareholders but who are likely to be affected by the company's activities and objectives. Stakeholders may include banks and other loan or credit providers, customers and debtors.

Total Addressable Market (TAM)
The total market demand for a product and/or service.

Term Sheet
A term sheet is a nonbinding agreement that shows the basic terms and conditions of an investment. The term sheet serves as a template and basis for more detailed, legally binding documents. Once the parties involved reach an agreement on the details laid out in the term sheet, a binding agreement or contract that conforms to the term sheet details is drawn up.

Trademarks
Any sign capable of being represented graphically. It may consist of words, designs, letters, numerals, colours or even smells or shapes. Trademarks exist in the UK as both registered and unregistered IP. Registration offers a cost-effective and easy way to protect brand images.

Unique Selling Point
What characteristic or quality differentiates your product/technology/innovation from that of your competition. So how is your product objectively better (from the perspective of the customer or end user) than everyone else's.

Venture Capitalist (VC)
An institution which provides equity or risk capital (money) to businesses with a view to making a large capital return.

Contact

If you have any comments on the Handbook or some resources to submit for consideration please get in touch with us at **enterprise@raeng.org.uk**