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Intellectual Property: Commercializing in a University Setting

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Commercializing in a University Setting

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Topic Relevance by Timeline

Summary

- An academic entrepreneur must clarify ownership of their invention and establish an intellectual property protection plan before commercializing.
- In most cases, a university employer will own the invention created by its researchers and faculty in conjunction with their employment, and will make intellectual property protection decisions.
- A university may either license out the entrepreneur's invention to a third-party company to further develop and commercialize, or may license the invention back to the entrepreneur so that they may commercialize it themselves through a start-up.
- Such license agreements will assign responsibility for paying for patent coverage to protect the invention, set a fee or royalty schedule, and clarify ownership of further improvements or developments.
- Should the entrepreneur decide to commercialize the invention themselves, besides licensing the invention from the university, they should also be mindful of disclosure issues, contract clearly with founders and other interested parties to clarify issues of equity and intellectual property ownership, and consider whether they need to establish freedom to operate.

Introduction

Once they create an invention, the academic entrepreneur needs to take two preliminary steps: ascertain, and if necessary, clarify who owns the invention (as between them, their employer university, any collaborators and their universities or companies, and any sponsoring bodies); and

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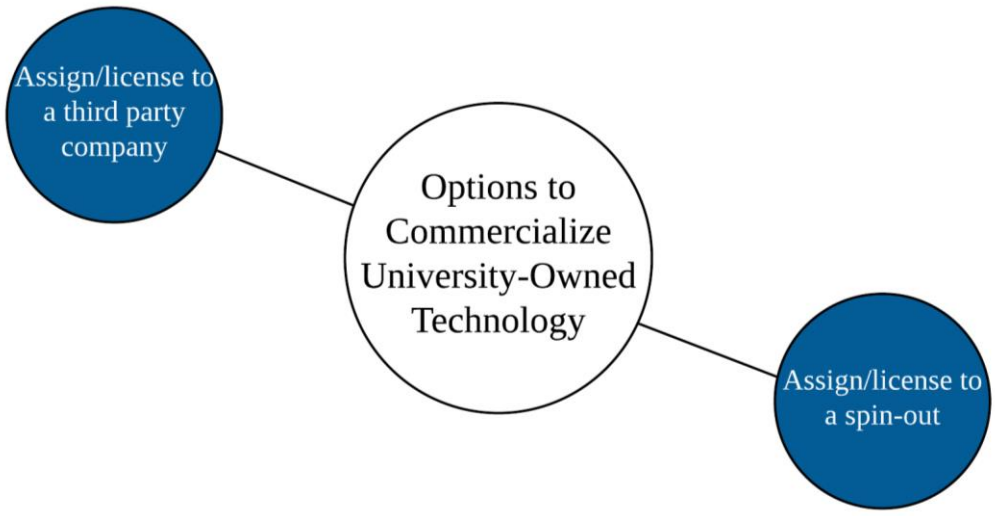
then, as necessary, decide if and how the invention should be protected (see the chapter "Intellectual Property: Ownership and Protection in a University Setting"). Often, these decisions will be made with the help of the university Technology Transfer Office (TTO)[1] because if the entrepreneur invented on the job, there is a presumption that the university will own the invention and make all protection decisions.[2] However, regardless of ownership, the inventor has a role to play in the next important step, namely, commercialization.

Commercializing Intellectual Property

Although there are situations where the academic entrepreneur invents outside of the University IP Policy, in the vast majority of cases, their invention is assigned to the university (Figure 1). This chapter will assume this to be the case. In such a situation where the university is the owner of the invention, what is the necessary first step to commercialization?

Two options are generally available: the university can assign or license the invention outside to a third-party company to further develop and commercialize; or the entrepreneurs can try to form a company to commercialize it themselves. Either option requires an assignment or license of the invention from the university. To restate, although counterintuitive, the inventors do *not* have the right to commercialize their own invention without an assignment or license from the university, because the university owns the invention.

Figure 1. Options to Commercialize University-Owned Technology.



Is there a difference between assignment and license? What are the licensing options?

An owner of IP controls the entire bundle of IP rights. This entire bundle may be transferred all at once, called an assignment, or the owner may negotiate away single rights through a licensing

contract. Whereas an assignee (the recipient of an assignment) has complete control over exploitation of the IP, a licensee (the recipient of a license) has only as many rights as the license conveys. Those rights can be exclusive, where the licensee is the only party allowed to exercise those limited rights, even *including* the owner, or nonexclusive, where the licensee is only one of potentially many that can exercise those rights. Rights can be conveyed broadly or narrowly; for example, they can be limited to use during a certain time period, in specific fields, over specific territories, or only for so long as there is not a breach or other condition after which the licensor may revoke the rights granted.

The advantage of an IP assignment—which conveys complete ownership—is that often it commands an upfront payment, which makes a payout certain. In contrast, licensees usually pay for the license through periodic fees, or even royalty payments attached to eventual profits from the commercialization, which can be stretched out over time. The downside of an assignment is that the original owner relinquishes control over the commercialization of the invention because they no longer retain any rights to use the invention. On the other hand, a license leaves the licensor more control, as they can impose restrictions on the licensee linked to performance.

Practically speaking, the TTO licenses far more often than it assigns. This allows the university to maintain control over its inventions and potentially license them out to different parties for different fields or purposes. The TTO uses a variety of model licensing agreements, although the terms are often negotiated (see the chapter "Working with the University Technology Transfer Office"). Such agreements almost always require the licensee, whether a third party company or the academic entrepreneur inventor, to pay for (or reimburse) the cost of patenting the invention. The agreements also usually cover the terms of ownership of any further developments or improvements made to the invention. As for payment, the university may structure the fees in a variety of ways depending on the licensee.

Especially when dealing with third party companies, the TTO will often attempt to design an arrangement that takes advantage of the flexibility of a license, while minimizing the inherent risk of being compensated through delayed payments. Fees may include one or more of an upfront lump sum payment, minimum royalties regardless of commercialization success (either an annual fee, or a percentage-based royalty), or even a bonanza clause, which would allow the TTO and the company to share in any extraordinary success with the commercialization. To guarantee further development and commercialization, the agreement might mandate that the company meet certain development or sales benchmarks or risk having the license rights revert. Once the money comes in from the company, the University IP Policy's provisions will address what percentage of such license payments, fees, and royalties the inventor, their department, and their school may net from that license, after TTO costs are subtracted.

If the university licenses back to the inventor for them to commercialize themselves, they are still subject to license fees and terms, but they are generally less onerous. For example, the university

may defer licensing fees until some point in the future, or even take equity in the company to compensate for at least a percentage of the fee in order to help the company with cash flow at the earliest stages. The university may be open to an option right at first, or to limiting the granted license rights to only a particular field or time period that the entrepreneur most needs in order to keep the fees as low as possible. Similarly, the university will likely not impose development or sales benchmarks. Once the fees come in to the university, the University IP Policy usually addresses how to distribute the licensing fees among non-equity inventors, after TTO costs are subtracted.

Using a third party to commercialize the invention

There are advantages to depending on a third party to commercialize the invention. The TTO and the inventor share in the upside of the commercialization without assuming the risk and work involved in building a company and bringing a product to market. These risks are magnified by the fact that the invention is often early stage and the timeline to market may be long and unsure, particularly if the market is untested, and the population of potential consumers must be created. The obvious downside is a loss of control over the pace and path of commercialization, along with the fact that the TTO and inventor only share in a percentage of the profit. However, the TTO can use some of the license drafting strategies described above to guarantee payments, counteract some of the downside, and minimize risk.

Even if the university licenses to a third party company, the inventor still has a critical role in ensuring the success of their invention's commercialization. First, the inventor can best identify the most promising licensees. With their knowledge of prior art, the other universities working in the same space, and the companies that have productized similar inventions, the inventor can make introductions and explain the value of the invention to potential business partners (see the chapter "Forming and Maintaining Meaningful Partnerships Between Academic Scientists and Corporations"). If their residual knowledge is crucial to implementing the invention, their time and expertise might be a valuable part of the deal. Their willingness to help the licensee to further develop the invention might also pay future dividends. Not only might it guarantee better commercialization success, but it might also lead to a broader relationship between the inventor and the licensee and future sponsored research agreements to develop related inventions (Reingand).

Commercializing through a spin-out

If licensing to a third party for commercialization is infeasible or the entrepreneur is interested in bringing the invention to market themselves, they can choose to spin out their own company. This option allows them to maintain control over the commercialization and benefit from all the upside of their invention's success. However, if they decide to go this route, they will need to play new business roles, assume much more risk, and be sure to resolve a few remaining IP issues (Figure 2).

The first set of IP issues are internal. As discussed above, the entrepreneur will need to obtain rights to the technology from the university and any other owners, all of which can be handled through the TTO (see the chapters "Intellectual Property: Ownership and Protection in a University Setting" and "Working with the University Technology Transfer Office"). As to whether they should ask for an assignment or a license, practically speaking, there are only a few situations where an academic entrepreneur must own their invention in order to exploit and control their invention fully. Usually, a license will suffice.[3] An attorney can be extremely helpful in helping the entrepreneur ascertain what rights they need to include in the license, in particular whether the license should be exclusive or nonexclusive, and whether it must be unlimited or may be limited to certain fields or time in an effort to limit the license fees owed.

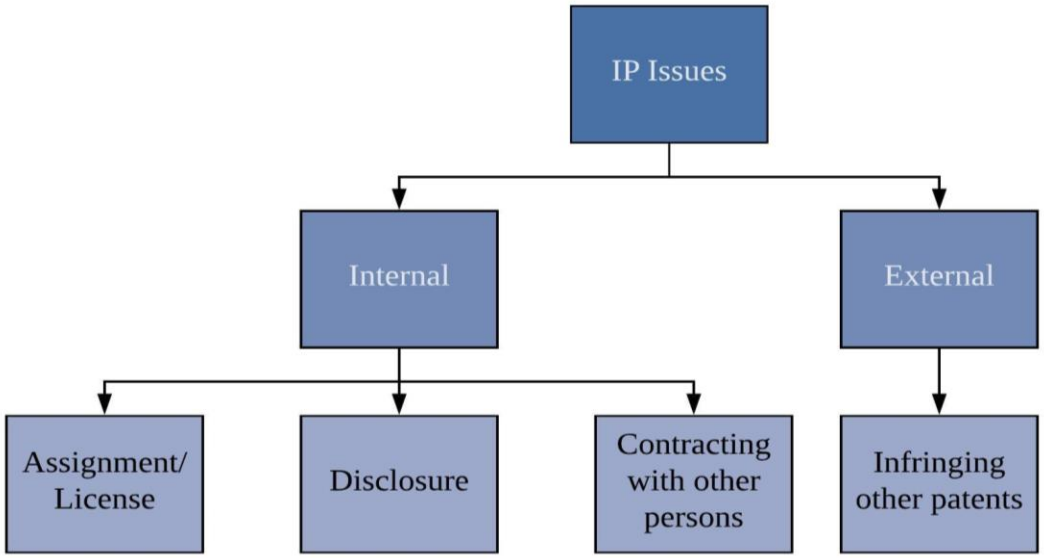
A second internal issue involves disclosure. Any activity through which the inventor makes the invention public, including discussing the idea with a potential investor who is not under a non-disclosure obligation, can compromise an inventor's ability to protect their technology through patent or trade secret. When the academic entrepreneur is commercializing the invention themselves, disclosure cautions are even more relevant. As the person responsible for raising cash and building the product, they may have occasion to speak to more parties, not only about the invention, but also about the underlying supporting data and know-how that may never be covered in a patent application. Until the entrepreneur can execute a nondisclosure agreement with potential funders and other third parties, they should keep discussions of the invention at a high level, and limit disclosure of data and know-how.[4] The academic entrepreneur may also consider consulting the TTO to consider other ways to protect their invention if patent is not possible, such as filing applications for copyright registrations, or putting formal protections into place to keep the knowledge secret if they must protect it through trade secret.

A final internal issue involves contracting with other persons related to the spin-out. The entrepreneur should be sure to carefully contract with all founders, consultants, and employees to clarify issues of equity and IP ownership over both the current invention and its further development. The contracting itself will provide protection, but merely engaging in the negotiation process will also force all parties to clarify their positions and needs clearly at the beginning of the relationship, which may prevent conflict and misunderstandings later.

The second set of IP issues are more external facing. Once the entrepreneur has developed a plan for commercialization, they might consider if they would need to practice any other patents in order to productize their invention. In other words, would they infringe other patents on their way to creating a product from their invention as conceived? This is an especially important consideration when the field of use is crowded. A search for such patents is called a "freedom to operate" search, and it examines the claims of related patents to determine if the entrepreneur is in danger of a potential claim of infringement (see the chapter "Does My Invention Already Exist? Conducting a Patent / Prior Art Search").[5] Commissioning an attorney to run a freedom to operate search can be very expensive, but the entrepreneur can do much of the legwork themselves by

searching, at least on a basic level, for any close patents and then bringing any questionable patent claims to an attorney's attention for a closer analysis (Pressman and Tuytschaevers). There is a risk that having knowledge of a patent and proceeding to infringe it anyway can bring about a claim of "willfulness," should the entrepreneur get sued for infringement. However, knowledge of potential infringement can also allow the entrepreneur to plan to avoid future confrontation; they can design around the other patent, change their plans for production or their commercialization strategy, or even approach the other party for a license to avoid infringement claims. In addition, by sharing potentially problematic patents with counsel, the counsel may be able to offer assurances in writing that the entrepreneur does not infringe,[6] which can be helpful both for their piece of mind and for their prospects for outside funding.

Figure 2. IP Issues Regarding Commercializing Through Spin-Out.



Conclusion

Even if the university owns their invention, an academic entrepreneur may face the decision whether they would prefer to have the university license out their invention to a third party or prefer to commercialize it themselves. Whichever the option, the TTO of the university will draft a license that will assign responsibility for patent prosecution, the structure of the payment of fees and royalties, ownership over improvements, and the boundaries of the rights granted. Should the entrepreneur choose to commercialize the invention themselves through a university spin-out, they should also consider entering agreements with founders, consultants and employees early to clarify equity stakes and intellectual property ownership, and consider their "freedom to operate" given the proposed business plan. By educating themselves about intellectual property issues, they can play a more active and interested role in the commercialization process, increasing the chances that their invention will move into the world, benefit society, and return a financial reward.

Endnotes

1. A university technology transfer office is the arm of the university charged with protecting (usually through patent) and commercializing (usually through licensing to a for-profit venture) university-owned inventions.
2. An academic inventor generally assigns all rights to their inventions to their university employer through the terms of their employment contract. Which inventions are covered and the circumstances around when they are assigned are set forth by the terms of the university IP Policy. These IP policy statements have various titles, such as Patent and Tangible Research Property Policies and Procedures of the University of Pennsylvania, and Guide to the Ownership, Distribution and Commercial Development of MIT Technology, etc. For simplicity's sake, I will refer to them all by the general term "University IP Policy." Sometimes there are separate policies for patentable inventions and copyrightable works; sometimes the policies are combined.
3. Rights usually reserved only to owners include the right to sue a third party over the technology and the right to control the prosecution. If these are important rights to the academic entrepreneur, perhaps because they fear that the owner may not protect or enforce the IP with the same strategy or diligence as they would, then the entrepreneur should consider negotiating either an assignment (unlikely in an academic setting), or an exclusive license, where the relevant rights are specifically transferred.
4. Most funders will not enter an NDA with an entrepreneur upfront, but may do so once they are interested in potentially doing a deal.
5. A "freedom to operate" search differs from a prior art search in both why and how it is executed. A prior art searcher asks if the subject matter of a new patent application has been disclosed before. As a result, a prior art search must include all information in the world, which includes but is not limited to patents. Furthermore, when the prior art searcher considers a patent reference, all sections of that patent are relevant, since inventions can be disclosed in the specification as well as in the claims. Prior art searches are also date limited in that all prior art must come before the filing date of the new application in order to be "prior art." And a prior art search must be related to the subject matter of the new patent application, since the question is whether the new patent may be granted. In contrast, a freedom to operate search asks if practicing an invention could infringe another patent. As a result, a freedom to operate search is only focused on patents, and even then only the claims of those patents. Freedom to operate searches only consider non-expired patents, and focus only on the jurisdiction where the party would likely commercialize, since patents are territorial. And a freedom to operate search does not necessarily involve an inventor's patent; the analysis is on whether practicing an *invention* in a certain way – whether or not patented – infringes another's rights. It is possible to both own a patent on an invention *and* infringe another patent, if the inventor's patent does not cover all aspects of how to practice the invention.

6. When merited, counsel will sometimes prepare a "freedom to operate opinion letter" setting forth the argument for why there is no infringement. An entrepreneur can use such a letter in court to defend against a claim of willful infringement.

References

Pressman, David, and Thomas J. Tuytschaevers. *Patent It Yourself: Your Step-by-Step Guide to Filing at the U.S. Patent Office*. 18th ed., NOLO, 2016, https://www.amazon.com/Patent-Yourself-Step-Step-Filing/dp/1413317197.

Reingand, Nadya, editor. *Intellectual Property in Academia: A Practical Guide for Scientists and Engineers*. 1 edition, Crc Press, 2011, p. 204, https://www.amazon.com/Intellectual-Property-Academia-Practical-Scientists/dp/1439837007.

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