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What Entrepreneurs Should Know About University Technology Licensing

Kathleen Allen (University of Southern California)

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Entrepreneurs can build startups around university inventions, but tech transfer deals bring legal, financial and development risks that must be managed carefully.

Universities can offer just what entrepreneurs need to build a great technology business: scientists, engineers, and researchers in a variety of fields. For those who know how to navigate the tech transfer office and negotiate for intellectual property, a university can be a hotbed of opportunity. But the technology transfer process can be a minefield for the uninitiated.

Harsh Vathsangam recognized opportunity when he started Moving Analytics, a digital healthcare company, at the University of Southern California using an evidenced-based program licensed from Stanford University. Vathsangam and his team discovered Stanford's 20-year old MULTIFIT care management program, a paper-based home cardiac rehabilitation program that enabled nurses to handle up to 200 patients, compared to 40 in more traditional cardiac rehabilitation settings. Clinical evidence from MULTIFIT showed that home-based rehabilitation is as effective as hospital or clinic-based programs. Building on the MULTIFIT program, Vathsangam designed a digital application that would make cardiac rehabilitation more accessible for patients and increase revenues and scalability for rehabilitation centers. Moving Analytics was born, and now has its own issued patent and a validated prototype that is being tested in two pilot studies.

Vathsangam's story demonstrates how licensing an existing technology from a university can be a great way to build a business whose product is unique and time tested from day one. But entrepreneurs must approach this process with eyes wide open.

The Good, the Bad, and the Ugly

Licensing a technology from a research university produces many advantages. Here are a few of them.

- Associating with a major research university and its resources makes your startup appear more substantial and credible to potential investors.
- Technology developed in a prestigious university has a perceived quality.
- Universities offer talent and new knowledge that is hard to find outside that setting.
- Students can serve as interns in your company.
- You can participate in the university's innovation events and benefit from its marketing.

While these benefits are undeniable, so are the challenges of partnering with a university. These challenges fall into four categories: 1) what you get when you license, 2) the transfer process, 3) resources, and 4) the economic life of the technology.

1. **What you get when you license**. It's important to realize that much of the technology at universities is still in a very early stage. You will likely need to develop it further before it can actually become a product. Ideally, you should engage the scientist or engineer who invented the technology to help you do this. Unfortunately, this can be costly and time-consuming. Many researchers may be bristle at new ideas because they are "not invented here." They may have moved on to other projects that leave little time for your needs, especially if the university lets them take on new projects once a technology is deemed ready for licensing.
2. **The transfer process**. Even if the technology is ideal for your purposes, officers in the university's tech transfer office (TTO) may be

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reluctant to license to you. If you can't prove that you have a plan and can bring this technology to market, you will not get the license. If anyone tells you that the university tech transfer process is smooth and quick, don't believe them. It's difficult and time-consuming, especially during the legal procedures. While prestigious research universities have a more efficient process than most, it's still not as efficient as that found in industry.

3. **Resources**. While a university may offer a promising early-stage technology, it typically doesn't have the resources to develop it into an actual product, especially if the original inventor has been redeployed to other projects. You must have those resources yourself or acquire them. What the TTO will likely require from you is a performance agreement; that is, you will need to agree to a timeline to bring the technology to market. The university is protecting itself from an unscrupulous entrepreneur who might acquire the technology simply to keep it out of the hands of a competitor, or in a more likely scenario, the entrepreneur simply doesn't have the resources to turn the technology into a product fast enough.
4. **Economic life**. If the technology you're seeking to acquire is patented (and that's likely the case), the patent laws will specify its patent life —for example, 20 years for a utility or functional patent. However, the technology also has an economic life (the time during which you are able to make money from it) that is typically shorter than the patent life. Many developments, some of them unforeseen, can impact the your technology's economic life. Competitors could design around your patent or challenge its validity. The costs to develop the technology might be significantly higher than expected. New legislation or regulation can cut off a market; for example, faulty batteries caused some cheaper brands of the highly popular hoverboard to explode, and prompted talk of consumer regulation to prevent some manufacturers from selling in the U.S. Other risks include price escalation in the market or loss of supply, both of which cut short the potential income stream.

With a firm grasp of some of the negatives to dealing with university technology, let's consider some tips that will help to ensure that your experience with technology licensing is more positive than negative.

Licensing Tips for Entrepreneurs

If you decide to license a technology from a university, it's important that you go in with your eyes wide open. The following tips will smooth the path for you.

Prepare Yourself

Remember that licensing a technology involves a negotiation. Both sides (the entrepreneur and the university) have put their own interests at the forefront, so don't assume the university wants to give you a good deal. They want a return on their investment in the technology, by ensuring that it ends up in good hands and generates at least enough money to offset their costs. Naturally, they also want to create an ongoing revenue stream for the university. Some universities who are new to research may be focusing on a short-term gain from any technology they help develop; others are more willing to look long-term. Make sure you understand their priorities before you sit down to negotiate.

So how do you prepare yourself for this negotiation? Preparation begins long before you head out to talk to anyone in the TTO. It begins with your search for a technology that meets the needs of the your business or one you want to create. Consider starting with the Association of University Technology Managers' (AUTM) Global Technology Portal, which shows university technologies worldwide that are available for licensing.[1] Choosing the right technology from the right university can make all the difference in how smoothly the process goes.

Do your homework. Does the university have a good track record licensing technologies that actually go to market? Can you talk to people who have licensed from that university about their experiences? Has anything been written online about the university's TTO? Unfortunately, tech transfer offices have no rating systems like Yelp or Angie's List, but you can find some information on the best TTOs for specific types of technologies. For example, the highly regarded journal *Nature* has a website dedicated to nature biotechnology, where you can find the top 15 TTOs for output of life science technologies.[2] You'll learn that the top three universities are the University of California system, the University of Pennsylvania, and the University of Washington.

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Next, build a strong business plan. The university wants to feel comfortable that you know what you're doing, so providing a well-conceived plan to develop and commercialize the technology will increase their confidence in you. You must prove to the TTO that the market needs your product; you have a business model that makes sense; you have a plan and timeline for product development and launch; and you have a team that can execute on this agreement.

Understand the License Agreement

The license agreement is the document that arises out of the negotiation. Consider engaging an experienced licensing attorney at this stage -- preferably one who has already worked with the university's TTO.

Most universities have a standard document that gets modified depending on the outcome of the negotiation; however, any license agreement has four parts, described below.

1. **The grant clause**. This clause conveys what is being delivered by the agreement (the specific technology and/or know-how), whether this is an exclusive or non-exclusive agreement, and whether you have the right to sub-license to someone else, among other things. Getting an exclusive license is difficult because it means that the TTO is putting all its eggs into one basket: you. Risk-averse universities typically don't want to do that. So it's more likely that you will get a non-exclusive license or an exclusive license for a particular market or use.
2. **Confidentiality Clauses**. These clauses can restrict access to the technology to specific people, and typically specify the term for secrecy. They also address things like terminating the agreement and the ability to transfer information to foreign governments.
3. **Payments and Fees**. The agreement will deal with the licensing payment structure, whether it's a lump sum based on the usable life of the technology or, more commonly, some type of royalty stream as a percentage of sales. A licensee (you), whose ability is verifiable and faces no threat of imitation, can get a royalty-only agreement. If, however, the threat of imitation is credible and the cost significant, the TTO may require a fixed fee in addition to the royalty. Royalties are always negotiable, so bring your attorney and come prepared to document your strengths so you can get the best deal possible. This part of the agreement may also address currency hedging (for cases where you're dealing in foreign currency) and research funds if further research is required.
4. **Other Clauses**. Other issues addressed in the agreement include whether the university will take equity instead of royalties (or both), whether cross-licensing is permitted, and whether you can get a first licensee concession because you're taking on more risk than a subsequent licensee. You should definitely explore this option if you are a first licensee.

Insider Tips

Understanding the basics of the licensing process is not enough. Here are some often-overlooked strategies that could tip the scales in your favor.

- Become an "insider." Cultivate a strong working relationship with one of the transfer officers or case managers, and with the inventor of the technology.
- Secure rights to technology advancements that the university researchers might make to the original technology. That way you don't risk the technology becoming out of date or even obsolete before you can capture the economic value.
- Tie license payments to performance in a way that keeps you from paying royalties before the technology is actually making money. If you have some additional product development to do after you acquire the technology, you don't want to pay royalties when you're not generating revenue.
- Check on the impact of any secrecy obligations that might affect your ability to get the technology to market. Are you free to share information with the people who need to have that information to do their work?
- Check in with other licensees to gauge their level of satisfaction with your licensor. Recognize that complaining about the TTO is the raison d'être for many researchers, so do talk to several to develop a more even-handed perspective.
- Ask some critical questions:
    - How much technical risk does this technology have, and what are the data

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that support that conclusion?
    - Is the technology completely owned by the licensor? Things could get very complex if the university shared research efforts with another university. In that case, you would need to work with both TTOs.
    - How much will it cost to develop and manufacture this technology? Are special manufacturing techniques required?
    - How big is the window of opportunity to commercialize the technology? If the product development timeline is long and the market won't wait, this may not be a good investment.

If it seems like you're going to be at the mercy of the university if you do a licensing deal, keep in mind that the university wants to continue to receive federal research dollars, so they have to demonstrate that the research they conduct actually benefits society. If you pitch them a well-thought-out, market-driven plan that helps them make this case, they will be very excited to work with you.

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