

Venture Capital - University Interface: Best Practices to Make Maximum Impact

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Abstract

Entrepreneurial start-ups – whether in biotechnology, clean energy, or telecommunications – have left an indelible mark on much of the United States’ recent economic history. As hotbeds for technological innovation, university research labs create groundbreaking innovations that have been at the heart of many successful start-ups. But powerful ideas don’t automatically beget successful companies. Great ideas must be identified, acquired, and developed into successful businesses using a unique blend of skills.

Venture capital funds exist to perform this valuable – and lucrative – role in the economy. Some venture capitalists try to scour the campuses of major research universities in search of the next big idea, but it’s not as straightforward as discovering an inventor at a lab bench. A range of practical, personal, and legal hurdles must be cleared before an idea can begin to transform into the core of a new company.

With these common hurdles in mind, the USC Stevens Institute for Innovation conducted 94 in-depth interviews with geographically and commercially diverse venture capitalists in order to better understand the relationship between the academic and venture capital communities: what motivates the various stakeholders; which are the most pressing problems facing university-venture relations; and what can be done to improve the process for everyone involved.

While many factors play into startup success, five main focus areas emerged for universities looking to improve the university-investor interface: understanding investor motivations, supporting entrepreneurs, streamlining bureaucracy, improving access and visibility, and fostering a culture of innovation on campus.

Introduction

Venture capitalists are eager to share stories of their successes, but they are also vocal about their disappointment dealing with universities. They view academia as a rich potential source of lucrative deals, but are often frustrated by how difficult it is to identify, extract, and develop those ideas into thriving businesses:

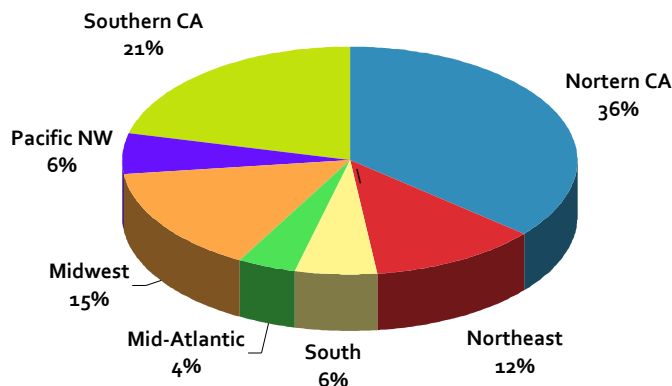
“Even though the academic and his co-founder CEO were in agreement on the deadline terms, once it got caught up in the endless cycle of university bureaucracy we literally lost nine months, plus a lot of sweat equity. But I’ve pushed our limited partners into dealing with universities anyway because I feel like research lab ideas are really interesting and often worth the hassle.”

- *Managing Partner, Life Science Venture Fund*

With this in mind, the USC Stevens Institute for Innovation set out to explore the issues affecting university–VC relations in an effort to better understand – and ultimately improve – the spinout process for all of the stakeholders involved. The goal was to understand how universities can better serve the investment community by more effectively connecting innovations bred in university classrooms and labs with venture capital funding.

From November 2007 through February 2008, an independent research team conducted 94 in-depth interviews among a geographically and commercially diverse sample of venture capitalists to gain deeper insight into the current model for academic spinouts, and which elements of that process help or hinder the efforts of venture capitalists to develop those ideas into thriving businesses. All of the interview subjects were senior managers of active venture funds (partner or managing director level) that invest in seed and early-stage companies.

Geographic Distribution



The research identified many areas where investment professionals think universities can improve, from internal education and training within tech transfer offices about the investment world to better packaging and marketing of ideas for VCs to review. This paper presents the major findings from the research and offers recommendations for ways to improve university-VC relations.

The recommendations can be summarized into five key areas:

- Know your VCs
- Support your entrepreneurs
- Make it easy: streamline the bureaucracy
- Get out there: improve access & increase visibility
- Foster a culture of innovation

Know Your VCs

Understand how you fit into a venture capital fund's business goals.

The structure and goals of VC funds determine what types of inventions will be of interest to them. In the broadest sense, a venture capital fund is a pool of private equity used by third-party investors to grow new businesses. Funds are composed of general partners, who make decisions about where to invest, and limited partners, who contribute capital to the fund. Like other alternative investment vehicles, venture capital funds have a fixed lifespan in which to provide the venture and the limited partners with a cash return on their investments.

Venture capital funds make investments in growing businesses in the interest of generating above-market returns for their partners. These returns depend on a successful exit strategy through a “liquidity event” – typically an IPO or acquisition. Venture partners generally receive 2% of the fund’s committed capital as an annual management fee and an additional 20% of the fund’s net profits, a so-called “2-20” arrangement. This creates heavy incentives to make successful investments.

To VCs, universities are a potential source of truly unique innovations and inventions that, if given capital and strong management, can become successful standalone companies within a reasonably short period of time. These are the *only* types of ideas from universities that are relevant to VCs. Unfortunately, the pitches they get from academic settings are rarely filtered through this lens.

Be aware of the ticking clock.

A venture fund has a finite lifespan of only a few short years to identify investment opportunities and guide their portfolio companies to a successful exit event, and venture capitalists are always mindful of the ticking clock – the faster a company matures, the quicker to exit and the higher their internal rate of return (which affects their ability to raise money for future funds). Venture capitalists look at a company’s likely time to market, time to profitability, and time to exit through a liquidity event.

8 out of 10 VC investors interviewed said that university-generated business plans miss the mark when it comes to addressing the question of timing, and that VCs typically add on 2-3 years to the stated time to market for a university venture. Our interviews revealed that in terms of investment horizons, venture capitalists consider university technologies longer-term bets than industry investments, which makes them less attractive and riskier.

Expectations vary by industry verticals.

Venture funds can be loosely grouped into categories based on a fund’s industry focus, and they have very different expectations for university relationships depending on the area of the investment they are making. For instance, venture capital firms specializing in software and technology expect a relatively low initial investment and quick time to market, with a clear path to exit within 5 years. Funds that manage life sciences portfolio companies expect to participate in multiple investment rounds as the idea matures and is proven over a longer investment horizon on the order of 7-10 years.

“Deal flow” comes from the VC’s network.

In our research, the opinion was unanimous among VCs that their preferred source of deals is a trusted person in their network – not showcases, over-the-transom business plans, or bulletins. As a result, venture capitalists want better personal networks and continual access to new investment opportunities. These networks may encompass technology transfer office professionals, faculty members, and other external advisors, but they rarely include students, even at the graduate level.

VCs assess investments in terms of risk.

A venture fund takes a gamble that a small number of its portfolio companies will do exceedingly well, many will do reasonably well, and some will fail. VCs assess ideas by calculating the likelihood of these outcomes, and once the deal is made they spend the next several years managing and mitigating known risks (such as inexperienced management teams.) According to VCs surveyed, this point is often lost on would-be entrepreneurs and tech transfer professionals. Understanding a potential company’s risk profile – including the possibility of failure due to competition, inaccessible markets, and other factors – creates a stronger pitch for investors who too often hear unrealistic claims like, “We’ll get to \$10 million in revenues in two years and \$100 million in three.”

Venture capital funds are not ATMs.

VCs are not an endless source of cash for unproven or infeasible inventions, nor are they in the business of writing blank checks – they expect to be highly involved in their portfolio companies. This is especially true of the early or “seed” stage investments that characterize the majority of ideas originating in university labs.

Support and Educate Your Entrepreneurs

The person behind the idea is as important as the idea itself.

Without exception, the VCs we spoke to said that people – innovators – are a central consideration of venture deals; and that universities don’t always understand this or create the right support and incentives for student and faculty innovation. One venture capitalist from the Northeast put it best, saying that “it’s not about the technology alone; at the end of the day it’s about people and it’s about the business team surrounding these technologies – you have to have people who are thinking through the technological and business sides of things.”

Too often technology licensing offices get so caught up in managing the spinout of compelling new technologies that they lose sight of the *people* who bring these ideas to life. Introducing venture capitalists to talented people can be more powerful than showcasing specific innovations. It’s possible that a faculty member will be invited by a venture capitalist to serve in an advisory capacity for another portfolio company, regardless of whether or not he was involved in the formulation of the original idea behind it. This type of entrepreneurial “cross—pollination” can broaden a university’s professional network and increase its visibility in the venture capital community.

The role of the innovator will depend on the maturity of the company.

Although there certainly are successful, high-profile companies that are run by CEO/inventors, this is not the spinout norm. The people behind an idea are expected to go with it – they will leave the university to actually start the company and be highly involved in the early stages – but they will probably not run the company through its maturation.

VCS stressed it is important that inventors understand their likely role in a start-up in light of their scientific expertise and business experience. Researchers should be prepared to take time off to follow their technology from the lab to the start-up. If they’re unable to or unwilling to make that commitment, they should be prepared for the departure of graduate students familiar with the technology who can help guide it to market. They should also expect that their board will begin to recruit a management team around them from day one, which may include an experienced CEO at some point.

Provide business education for students and faculty.

At the outset of this research project, we anticipated hearing a lot about “ivory tower” academics who are out of touch. We were surprised to learn that this old stereotype has been put to rest – venture capitalists mostly deal with academic entrepreneurs who are reasonably sophisticated about the markets they propose to enter. Still, faculty and students’ relative inexperience at founding, growing, and managing successful companies can impede the smooth execution of a VC deal.

Our interviewees had a number of suggestions for ways that technology transfer offices can mitigate potential delays and misunderstandings during the spinout process. They fell into two major categories:

Education.

Prepare entrepreneurs for the pace and probable terms of the deal. The VC will want it to move very quickly – often more quickly than the inventor is comfortable with – and will come to the table with aggressive ownership and equity demands.

Venture capitalists have been through this process dozens of times, but the majority of academics have not. One angel investor in California was quick to segment faculty members into “*entrepreneurial dynamos, ivory tower academics, and a grey middle.*” To his thinking, it was absolutely critical that universities support and educate the grey middle, since dynamos are entrepreneurially self-sufficient and the “ivory tower”-types are a “*lost cause.*”

Team Support.

We repeatedly heard variations on the same theme: “*We don’t trust a lone wolf inventor – it makes us wonder whether he will be able to build a management team around him.*”

Encourage faculty members who are experienced in the spinout process to reach out to their peers to serve as a resource and sounding board. Don’t confine the search for a “peer mentor” to one university alone. Take proactive steps to reach out to faculty members at other universities whose particular experiences bear a close resemblance to the inventor’s situation.

Make it Easy: Streamline the Bureaucracy

Technology transfer and technology licensing offices (TTOs), much like venture capital funds, are home to staff with myriad professional backgrounds, including legal staff with a strong orientation around intellectual property protection. In addition, many TTOs have a stronger history of licensing than connecting capital to ideas for standalone companies. This means they are more oriented around controlling the use of an innovation than spinning off innovations that may grow in unpredictable ways.

Act as a business intermediary, not a partisan legal team.

Our research confirmed that venture capitalists are extremely understanding about universities' need to protect their investment in promising technologies. They are accustomed to entering into negotiations with counterparties who have very divergent points of view, then finding mutually agreeable deal terms in short order.

Once venture capitalists decide to make a deal happen, they are impatient for it to move ahead immediately, and many have an aversion to IP attorneys who can get in the way of a deal that they are very eager to execute. *“Technology transfer should screen and package the technology, make the introduction, then step back and get out of the way.” -Partner, Technology Venture Fund in Southern California*

Be ready to make a deal.

It's critical that universities chart a course away from the defensive or “fortress” mentality that characterizes many TTOs managed by overzealous attorneys. Technology transfer offices must strike a balance, maintaining a business-like relationship without sacrificing legal protections for the university and its entrepreneurs. What investors would like to see from universities is a genuine effort to make the deal process as smooth and expedient as possible, including a *standardized, transparent deal process*.

Get Out There: Improve Access & Increase Visibility

Package ideas in VC-friendly ways.

One of the most clear and consistent opinions that emerged in the research was that universities need to get better at gathering, translating, and packaging new ideas. This involves more than simply eliminating “academese” from business plans presented to VCs – it means coaching would-be entrepreneurs on how to discuss their ideas in business rather than technological terms. Prominent investors receive hundreds of solicitations for capital each week, many of which are highly professional business plans written by entrepreneurs with a good working knowledge of finance.

Unfortunately, the opportunities that come out of universities are not usually as well-developed in terms of what matters most to venture capitalists. This includes a strong understanding of the potential business’ capital requirements, path to market, and expected ROI.

Technologies without markets aren’t attractive targets for VCs. Investors are frequently frustrated by “solutions in search of problems” coming out of research settings that are simply too far removed from the markets.

It’s important that entrepreneurs understand that VCs aren’t in the business of finding customers for esoteric technologies. Every idea that gets presented to a potential investor should include a clearly identified existing market need and a plan for capturing meaningful market share.

Technology transfer offices can help entrepreneurs chart a very basic commercial trajectory.

Be Proactive.

Universities can’t wait for the VCs to come to them – investors don’t have time to scour the halls of your university in search of new technologies. Instead, proactively approach investors with succinct, summarized information about potential deals. Building strong professional networks will allow universities to target the distribution of potential spinouts to the appropriate VC firms.

A number of examples of this were cited in our interviews: Some universities regularly send a senior staff member to meet with VCs who are interested in their university’s potential investment opportunities, some have quarterly newsletters tailored by industry focus, some have professors employed as entrepreneurs in residence at venture funds, and some have excellent showcase events. These initiatives send the message to VCs that the university is actively thinking about providing them with good deals.

Develop Relationships.

Venture capitalists value their networks and see value in anyone that can make quality introductions at the right time.

Seed stage venture funds covet exclusivity, so targeted offerings that aren’t perceived as having been blindly “shotgunned” to every VC in the surrounding four states will be better received.

Distinguish licensing deals from spinouts.

In our interviews, we repeatedly heard venture capitalists voicing the opinion that the vast majority of technologies coming out of universities are not appropriate as standalone businesses – they are licensing deals, not startups. VCs appreciate tech transfer offices that understand their business model and filter out the ideas that will never work as venture-backed spinouts.

Employ a “deal flow” benchmark.

In addition to tracking the number of successful ideas that are either licensed or spun out from year to year, keep tabs on the number of potential leads on campus. It’s understood that the overwhelming majority of raw intellectual property on campuses is unsuitable as the foundation for a new company. TTOs should keep track of deals that fold on account of unworkable technologies.

These failures, as much as the spinout successes, are a testament to the health and vibrancy of entrepreneurship on campus and provide a more complete picture of the “deal flow pipeline” at your university. This ultimately goes hand and hand with keeping a fresh pipeline of innovations visible to VCs, and once there is a deal to be made, do everything possible to streamline the process.

Foster a Culture of Innovation

Support the creation of an “ecosystem of entrepreneurship.”

Venture capitalists talk about universities that have an “ecosystem of entrepreneurship,” which is a top-to-bottom culture that breeds and fosters innovation. This doesn’t start and stop with what happens in the technology transfer office; it goes through every part of the university system. It has implications for admissions, faculty promotions, grants and fundraising, and of course technology transfer and licensing. Faculty members and graduate students are increasingly inclined to pursue entrepreneurial opportunities.

However, these opportunities aren’t formally supported at many universities; the time a faculty member might dedicate to turning ideas into businesses competes with the time it takes to teach, publish, and pursue tenure. At some point this is a strategic question about a university’s identity and mission – whether or not and to what degree it wants to function as an incubator for venture capital funds’ portfolio companies.

Capitalize on existing strengths. Find new avenues and sources with which to fund research, because external funding is incredibly attractive to venture firms. VCs love ideas that have been heavily supported by university and government funding – it means they don’t have to bear the costs of early development.

Offer university resources to spinouts.

One of the most frequently mentioned items on the VCs’ wish lists was continued access to cutting-edge laboratory facilities for start-ups. This sweetens the creation of new companies by reducing the capital expenses associated with building laboratory facilities from the ground up.

For many VCs, an innovation that requires a multi-million-dollar lab for R&D is a non-starter, but with access to existing infrastructure the deal makes sense. They suggested implementing a charge-back model to drastically reduce a fledgling company’s capital expenses while compensating the university at the same time. That said, these sorts of arrangements are tricky for universities and issues such as conflict of interest and tax code can make these arrangements problematic, or impossible, for most non-profit academic institutions.

Draw on the experiences of other TTO professionals.

Some universities have been more successful at facilitating spinouts than others. In any discipline, it pays real dividends to study what has made similar organizations successful in an effort to establish some baseline best practices. Since venture capitalists typically operate within a small geographic region, it’s worth reaching out to your peers at other institutions to share information and to leverage your university’s visibility and reputation by partnering with others in order to expand your own reach.

Universities should not be competitors in this regard and can build on each other’s successes and connections. A number of VCs with whom we spoke were impressed by joint conferences organized by universities in Southern California. The “culture of innovation” shouldn’t stop where the campus ends.

Conclusion

Venture capital and universities can gain a great deal from working together as long as each party understands the other's needs. The suggestions in this study, from insights shared by venture capitalists, uncovered five key factors on the university side: understanding investor motivations, supporting entrepreneurs, streamlining bureaucracy, improving access and visibility, and fostering a culture of innovation on campus.

Although this paper isn't a roadmap for spinout success or a comprehensive set of solutions to some of the issues facing technology transfer professionals, our hope is that this research sparks a productive, long-term dialogue within and between the university and venture capital communities, and serves an important first step toward refashioning university technology transfer as a more straightforward, more productive, and more mutually beneficial process to maximize the impact of university innovations.

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Krisztina “Z” Holly is vice provost for innovation at the University of Southern California and executive director for the USC Stevens Institute for Innovation, where she spearheads the development of programs and approaches to help faculty and students make maximum impact with their ideas. USC Stevens, a university-wide institute in the office of the Provost, harnesses the creative thinking and innovative work at the University of Southern California's college, 17 professional schools, and research programs to build a multidisciplinary approach to innovation. Holly brings to USC her experience as an engineer and serial entrepreneur. Before USC, she was founding executive director of MIT's Deshpande Center for Technological Innovation, where she oversaw the distribution of \$5 million in grants, engaged more than 250 faculty and students, and spawned nine startup companies that successfully raised \$40 million in capital. An avid surfer, mountain biker, and backcountry skier, Holly earned master's and bachelor's degrees in mechanical engineering from MIT.

About the USC Stevens Institute for Innovation

The USC Stevens Institute for Innovation (<http://stevens.usc.edu>) is a university-wide resource in the Office of the Provost at the University of Southern California designed to harness and advance the creative thinking and breakthrough research from USC for societal impact. USC Stevens Institute identifies, nurtures, protects, and transfers to the market the most exciting innovations from USC, and in turn, provides a central connection for industry seeking cutting edge innovations in which to invest. Furthermore, USC Stevens Institute develops the innovator as well as innovations, through educational programs, community-building events, and showcase opportunities.

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