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CEOs and Scientific Founders: Tips for a Long and Successful Marriage

OPINION

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Xconomy New York — It seemed like the perfect match: A scientist founder from a top-tier academic institution; A technological innovation based on years and millions of dollars of federally-funded research in a university lab; And a successful entrepreneur and industry veteran named as the CEO of the startup that would take the work forward.

But soon after the scientist and CEO began working together, problems began. Feelings were hurt over who should serve as the public face of the company when talking to the press and potential funders. Bitter disputes emerged over each change to the product being developed. Worst of all, mismatched expectations about how to split the equity in the startup ended in shouting matches, from which neither party was willing to back down. Within months and well before raising any venture funding, the company had fallen apart in acrimony.

Unfortunately, I have seen this story unfold far too often. Of the 25+ startups that get launched each year based on cutting-edge scientific inventions emerging from Columbia University's research labs, most launch successfully and go on to raise venture financing. But a disappointing number fail quickly due to these fundamentally avoidable misunderstandings and misalignments.

In 2016 alone, over 1,000 startups were founded over innovations emerging from U.S. research institutions and medical centers, according to the Association of University Technology Managers. Historically, academic startups

Association of University Technology Managers. Historically, academic startups have led to some of today's most successful and well-known companies and products: Google, Akamai, Genentech, Duolingo, and more. In many cases, matching scientific founders with venture-backable CEOs is one of the most critically important steps to getting promising science-based startups out of the lab and into the market. Scientific founders often have the insight, tech chops, and passion to launch the company. But without a founding team that has successful business and startup experience, the company is often not fundable (and hence never gets to market) or fails in avoidable ways in the early years.

Unfortunately, CEO/founder matches too often fail over miscommunication, misunderstandings about norms, misaligned interests, bruised egos, or other avoidable issues. If these issues could be systematically addressed up front, many more of these matches could lead to great CEO/founder harmony. Here are seven of the most common sticking points and some expert advice for how to avoid them:

1. **Look before you leap**: Scientific founders and CEOs may feel pressure to rush into a formal relationship before they have spent enough time and effort to determine whether there is truly a good match. Given all the ups and downs that startups go through, founding teams need to both like and respect their partners. According to Marc Singer, Managing Director at Osage University Partners:

"Initial impressions can be misleading. If you are a founding principal investigator, you need to evaluate potential CEOs not only in terms of 'hard' skills (quality of thinking, product orientation, experience) but also 'soft skills' (communication style, how collaborative they are, fit with the founding scientists). Don't rush it; this takes time. Work with them as an advisor first, with no pre-commitments. After three months, decide if this is a worthwhile partnership."

Sal Stolfo, Professor of Computer Science at Columbia and serial cybersecurity entrepreneur (Red Balloon; Allure), agrees:

"For my recent company, I interviewed more than 16 CEO candidates until finding the one who fit the opportunity best. The key characteristics were clear reputation for integrity, breadth of relationships in the venture community as well as the business community, and a strong network of professionals in sales and marketing. But even more critically, the CEO candidate needs to be well steeped in the specific target market, not just business in general. Startups don't have time for the CEO to 'learn on the job.'"

In addition, Stan Reiss, a general partner of Matrix Partners, comments:

"Unfortunately, I have seen way too many technical university startups preyed on by low quality 'leeches' who are really good at negotiating their equity package, but aren't and will never be stellar performers. Invest the time to get to know them, do thorough reference checks, and ask, 'If this was a technical co-founder, would they be good enough?'"

2. **Splitting the pie**: Scientific founders often feel strongly that the company is being built on their insights and years of work in the lab. CEOs, meanwhile, believe the company's future depends largely on their efforts, like raising venture funding. Issues often arise around starting equity percentages, how these should change over time, based upon what milestones, and whether equity can be revoked. Osage University Partners analyzed thousands of university startup cap tables from 2009 to 2018, and provide the following guidance for an "average"

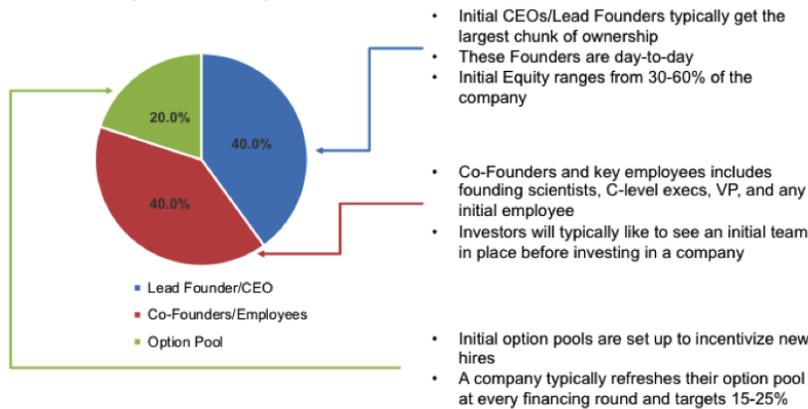tables from 2009 to 2018, and provide the following guidance for an "average" startup:

INITIAL FOUNDER SPLIT

Example Initial Cap Table

- Lead Founder/CEO
- Co-Founders/Employees
- Option Pool

- Initial CEOs/Lead Founders typically get the largest chunk of ownership
- These Founders are day-to-day
- Initial Equity ranges from 30-60% of the company

- Co-Founders and key employees includes founding scientists, C-level execs, VP, and any initial employee
- Investors will typically like to see an initial team in place before investing in a company

- Initial option pools are set up to incentivize new hires
- A company typically refreshes their option pool at every financing round and targets 15-25%

TYPICAL PRE-FINANCING EQUITY

Position	Range %
Founding CEO	30-60%
Active Founding Scientist	**20-40%**
Passive Founding Scientist	**1-5%**
University Founding Equity	2-20%
Professional CEO (Series ~A/B)	5-10%
C-Level	2-5%
Lead Engineer / Scientist	1-2%
Engineer (5+ years)	0.66-1.25%
Engineer (Junior)	0.2-0.66%
Ind. Board Member/Advisor	1%

- Titles range from CTO, CEO, Chief Scientist
- Many are part time, but spend at least 30% of their time at the startup
- Get 20% median and 25% mean initial equity
- The most highly compensated are founding scientist CEOs, which is rare
- Active Founding Scientist are more typical in tech companies (less common in biotech)

- Titles range from nothing, Advisor, Scientific Advisory Board to Chief Scientist
- Spending very little time day to day at the startup and some are not in touch with their companies at all
- Get less than 5% initial equity

Unfortunately, these ratios will often vary based on who leads the fundraising, how much time each founder is investing, and how far the product is from commercial launch. Local startup-centric attorneys and university tech transfer offices may be able to provide guidance based on their own experiences. According to Carlo Rizzuto, a partner at Versant Ventures:

"I advise academic founders to recognize that it will take many highly-skilled people and much capital to translate an academic discovery into a successful product. It is far better to own a small piece of a large (valuable) pie than a large piece of a small pie."

3. **Focus**: In most university startups, senior faculty members rarely leave their university positions, instead becoming part-time (<20 percent) scientific advisors on the scientific advisory board. It is also not uncommon for successful serial entrepreneurs to work with multiple early-stage startups concurrently as they gain momentum. Accordingly, CEOs can sometimes get frustrated by slow progress by the scientists, and scientists can become frustrated finding their CEO's attention divided. Gordana Vunjak-Novakovic, a serial VC-backed scientist and entrepreneur (Tara Biosystems; Epibone; East River Bio; Immplacate) and Professor of Biomedical Engineering at Columbia, says:

"In each of my four startups, one or more graduate student and postdoc

inventors have taken leadership positions in the company (CEO, CSO). I really like this model—invention and patent application, followed by a high-impact paper, and intellectual ownership of technology by trainees that they continue to develop by transitioning into the company. I am also very happy being available as a scientific advisor whenever needed, while leaving freedom to the CEO to build the business."

On the investor side, Jim Demetriades, founder and managing partner of Kairos Ventures, says:

"We love scientific founders to remain actively involved as the invention evolves from the scientific bench to a full commercial offering. However, scientific founders need to appreciate that their startup's success critically depends on having an experienced CEO who allocates 100 percent of their time and efforts to achieving such success. While keen technical insight and passion about the technology are excellent attributes, it is rare (but not impossible) for a newly-minted PhD student to make up for the company's lack of business acumen and years of startup experience."

4. **Letting go**: As mentioned above, scientific founders have a clear sense of the best roadmap to develop their products, but also want to be free to pursue their own unrelated academic interests. They also may want to put their time into basic research that may end up in prominent publications (one of the core functions of the modern research university), rather than using those hours to further develop their existing innovations. Meanwhile, the new CEO will likely be getting direct feedback from potential customers, industry partners, and venture investors about critical product features that must be developed. Tensions can arise in either direction: CEOs can become frustrated when the scientists won't adjust their university research to meet the company needs (and they shouldn't); and scientists can be offended when the CEO insists on pivoting away from the scientist's original vision. According to Kathy Ku, the former longtime director of Stanford University's Office of Technology Licensing:

"Faculty should focus on pushing the boundaries of knowledge, authoring important publications, and teaching the next generation. That means CEOs shouldn't expect them to divert their research, but also means that faculty need to allow their CEOs (whether a former postdoc or external entrepreneur) to set the direction of the company's commercial efforts."

5. **Launch velocity**: One founder may prefer to raise small amounts of capital from friends, family, or angel investors (or even rely on non-dilutive funding like SBIR grants) to avoid having their shares diluted or ceding ownership. Another founder may want to raise as much money from venture capitalists as quickly as possible, or even partner with industry to benefit from their experience with manufacturing, marketing, and sales. While there is no one right answer, according to Jon Soderstrom, Managing Director of the Office of Cooperative Research at Yale University:

"Wise founders recognize the difference between smart (e.g., professional venture capital) money that brings credibility, contacts and value to a new venture and 'friends and family' money that may not dilute the scientific founders as much but does not help create value in the venture beyond the dollars themselves. Founders have to choose between controlling a large stake in a venture that may not be able to later raise additional capital for growth or a smaller slice of a venture that has the possibility growing dramatically if the technology is successful."

6. **Public face**: Different people may have varying comfort levels and expectations around who will become the spokesperson for the company, in terms of press interviews, meetings with potential backers, and discussions with local government officials. These issues can lead to difficult conversations among the founding team, given the need for frank feedback about sensitive topics (charm, relatability) and interest in sharing the publicity. The same debate can occur around titles, which, especially in the early years, can be amorphous.

7. **Changing of the Guard**: While it can be uncomfortable, it is also worth being explicit upfront that even the new CEO may not stay at the reins forever. Steve Blank, senior fellow at Columbia, and creator of the **Lean Launchpad** entrepreneurship methodology, makes the point that:

"At each phase of the company you need to grow the team's skill set. If you want to build a traditional startup powered by venture capital, the team would initially start with the Innovator – the person with the insight/invention. For science-based startups, this is typically a professor in a research lab. Think Steve Wozniak at Apple, Paul Allen at Microsoft. The entrepreneur is the person who can create the reality distortion field around the product and company. Think Steve Jobs at Apple, Bill Gates at Microsoft. The entrepreneur's job is to raise money on just a demo and/or sparse data set, convince others to quit their good jobs to join a small team with nothing more than an idea, convince early customers to pay for and love an early, buggy, unfinished product, and most importantly hit the growth milestones that investors want. Ultimately, though, the entrepreneur is usually replaced by the executor, the person charged with scaling the company.

Each of the transitions implies a change in company culture, process, and trajectory. Each requires a different skill set. Bottom line: there is usually no single 'right' person to lead the company; the answer depends on the company's needs at that moment."

Launching a successful startup is incredibly difficult, requiring singular focus, years of hard work, and comfort with all of the challenges these scrappy companies need to overcome. Doing so without the right combination of technical and business founders lowers the odds of success, and also makes the journey even harder than necessary. We hope that by following the guidelines above, more startup teams will find themselves with the best chance of a great outcome and a team of which they can be proud!

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