German Scholars Organization

GSO* German Scholars Organization

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- Angebote
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Über Uns

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- Mission

- Team & Gremien

- Struktur & Finanzen

Unsere Angebote

Wir beraten und vernetzen. Für gestärkte Wissenschaftler*innen und wirksame Institutionen.

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Ask an Expert

Academia and Entrepreneurship - A case for more academic founders

How can you spin your research into a startup? We asked Dirk Riehle, professor of Computer Science and advocate for founders with an academic background, for insights and advice. Before becoming a professor, Dirk has worked in industry, always in close connection with startups. His passion for entrepreneurship has become a big part of his professorship and Dirk has been developing, guiding, and supporting startups from research.

1. You are a professor of Computer Science and support researchers in turning their scientific work into a startup. Which were the most significant milestones or turning points on your career path that led you to your current position?

Thanks for asking! Let me tease apart becoming a professor from becoming a professor who creates and supports startups.

To become a professor I took the usual career steps: High school, college (German Diplom still), and doctor title in that succession with little delay in between. **After my Ph.D. at ETH Zurich in 2000, however, I moved into industry rather than becoming a Postdoc**, and I worked in industry for ten years. Only the last three years in industry did I prepare for academia by starting to publish research articles again. For this, I switched jobs from a startup to a research position at an industrial research lab, SAP Research at SAP Labs in Palo Alto.

> The combination of an originally strong research record, substantial industry experience, and a restarted academic publishing track record was enough to get me a professorship at a German (research) university. I believe this is still possible today, at least in the engineering disciplines.

My interest in startups precedes my first degree. Already during highschool did I program video games and sell them through resellers. BAFöG (German student loan) rejected me and my parents couldn't pay for my studies either. So I kept programming during college, to earn a living.

Fast forward to Skyva, the first startup that I joined after my Ph.D. I joined as an early employee and it was a transformative experience, both from a business perspective and from a social perspective. **The friends and network of that startup are still with me today, twenty years later. The desire to have others, now my students, experience a similar feeling of energy, purpose, and bliss, is driving me today.** Skyva also taught me that as an engineer, I need to learn more about business, so I moved to California and got an M.B.A. from Stanford. More startups, then SAP Research, and finally the professorship in Erlangen that brought me back to Germany.

After initial excitement about my research and its societal implications, I'm now more focussed than ever on turning our research into startups, and I'm also helping outside teams to get started. I also invest in startups through my company, Bayave GmbH.

2. According to the 8th German Startup Monitor 83,9 percent of German founders have an academic background – even 14,2 percent have a PhD. Which skillsets do scientists & researchers already bring to the table that are helpful when starting a company? And what else does it take for a researcher to build a startup?

I think the entrepreneurial drive that turns someone into a founder is sparked early in life, before college. German colleges can help with a good education and giving students time for personal development. Such personal development is critical: **Founders are leaders who lead by example and authenticity.** Some colleges offer extracurricular education for budding entrepreneurs, which can be helpful.

Master student startups are very different from doctoral student startups. Master students, who just graduated, usually have little actual innovation at hand to turn into a product. Hence, all **they have is energy and hopefully speed for the search process**. ("A startup is an organization in search of a viable business model", paraphrasing Steve Blank.)

Freshly minted Ph.D. students often have deep domain expertise (their dissertation topic), and this is typically what they are trying to turn into a product. This is the main skill they are bringing to the table. However, they need so much more (leadership skills, business skills, networks, etc.) Too few professors help their intellectual offspring develop these skills. I'm the only professor I know who works with their people to help them define and reach their personal development goals.

For the individual, of all the skills needed, social skills, team building skills, relationships skills are probably most important.

Since we are talking about **early-career entrepreneurs**, their experience is limited, so they **need a founding team**. In a team, you can complement and help each other and together master the various challenges. Solo entrepreneurs are usually only successful much later in life (age 40-50), but this is not who we are talking about here. Needing a team makes social skills even more important.

3. Nine out of ten startups fail within the first five years and the start-up sector is often described as risky (so is academia!). Would you say entrepreneurship is a solid career path for scientists besides other options beyond academia? And if yes, how so?

Define solid? I think there is little certainty in the job market any longer, and the idea that you achieved a final desired position and can relax now is plain wrong. (Even if some professors may give that impression.) Large corporation loyalty is long gone, so whereever you go, you need to review your current work as positioning for future work, whether you like it or not.

Startup experience on your resume is a definite plus! At a younger age, it makes you more rather than less employable by a large company, if that's what you mean by solid career path.

It may sound surprising, but startups are easy! The problem is knowing what to do. There is a lot of confusing and outright wrong information out there. Before you accept advice, ask about the background behind the advice or program you might be joining. Who created it? Based on what experience?

4. Eureka! Let's say I have a great idea for a startup.
What is important to get started?

Are you sure it is a great idea? Of course you are! But the world may not agree. Therefore, key is to validate your idea and develop a business model for it in line with building your company.

Viable business model

The lean startup movement has given us good methods and tools to structure the **search for a viable business model**, so take a look at Lean Startup by Eric Ries or The Startup Owner's Manual by Steve Blank. If you are into software startups, you may also find my course [Commercial Open Source Startups](#) on the topic helpful.

Team

The common needs typically are (a) a team, (b) a financial runway (funding to go for a while), and (c) team, (d) team, and (e) team again (if you were to ask a venture capitalist about young founders). If you are a scientist, you probably will need an entrepreneurial businessperson on your team. For pretty much any startup funding, you'll need a business plan, and unless you already built the skills you'll probably need help from a more experienced person to create one.

Funding

With team and business plan in hand, you can go for funding. I'd first try the public options, most notably the [EXIST Gründerstipendium](#) or the [EXIST Forschungstransfer](#) . For these, you'll need university support: Both from a professor and from the university itself. The university will typically have a person or organisational unit tasked with technology transfer, and they can help you; if they are any good, they can also give you advice, education, and pointers to further public funding sources. The EXIST programs only apply if you haven't founded yet.

Keep the professor warm, because you'll need them again after incorporation, if you want to file for more public grants in association with the university.

After public funding, you'll probably need professional funding, through business angels or venture capitalists. There are various ways of getting in touch. You can try the [German BAND](#) (business angels) or go international right away with [Band of Angels](#) or [Angel List](#). Your professor may have an opinion. There are really too many opportunities too count.

Mentoring

Finally, depending on your level of experience, I'd look for mentoring. This could be coaches, or they could come in the form of business angels. You should try to get more than one mentor!

Thank you very much!

Learn more about Dirk's work on his personal website [dirkriehle.com](#) or his [institutional website](#) for Open Source Software at Friedrich-Alexander University Erlangen-Nürnberg. You can connect with him via [Twitter](#) or [LinkedIn](#).

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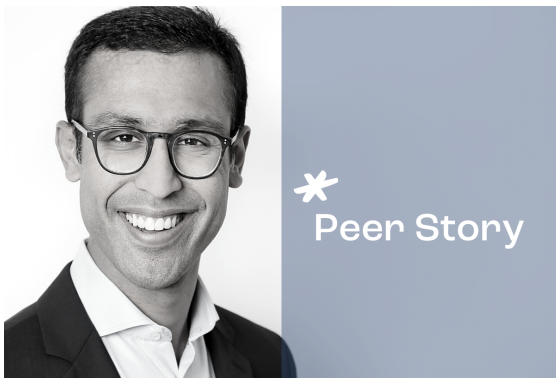
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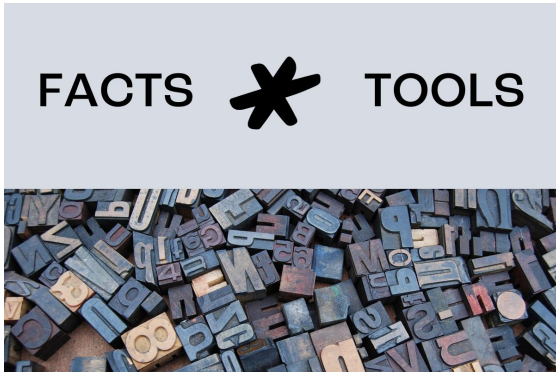
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