My experience with university spin-outs – its role in innovation, the barriers to successful commercialisation and my success

As a serial technology and property entrepreneur for the last 40 years and an angel investor for nearly 15 years, I have invested in over 75 start-ups. I am also a President Emeritus of the European Business Angel Network (EBAN) and have written two books under the Invested Investor brand.

I am lucky to live in Cambridge, UK, which is a hotbed of technology start-ups and I have invested in 17 university spin-outs. In all cases, the technology has been researched and developed by doctoral, post-doctoral and professorial academics within universities, funded by the university and by grants. Some research is pure, some part-funded by corporate partners and some is focussed by governmental industrial strategy.

I tend to think of these investments as late stage "science experiments" where a market has not yet been identified, or even if it has, a pivot to another application of the technology commonly occurs.

So, what do I believe are the barriers to successful commercialisation of frontier research from universities?

Primarily, early-stage investors, including angel investors, always invest in an entrepreneurial team, which I class as investing in "people with a plan" rather than a "plan with people". This can lead to a significant problem, as most great academics do not make great entrepreneurs, hence an academic co-founder almost always needs a commercial co-founder, who can raise external finance, can identify markets and sell the product/technology and, of course recruit and manage a team and create a positive culture. The pool of experienced start-up managers is small, hence it can be really difficult to find the right commercial partner. In addition, most spin-outs will need to reform their management team as they develop.

Another issue -although one which may potentially be outdated in the UK - is the attitude of those within the university itself, both in terms of commercialising the research and the barriers to raising equity finance. Many academics and members of university management believe that research should be in the public domain, through research papers. This makes it difficult for investors, who need to see defined defensibility (usually filed, although not necessarily granted, patents), otherwise it may be easy for a competitor to develop similar products.

A further problem lies in converting academic ideas and research results into a working commercial product. Simply transferring the technology from the lab to a spin-out company can create major hurdles, compounded by the very early stage of the technology. It commonly regularly takes a University spin-out 7 to 10 years to mature, which can mean a substantial amount of funding is required from patient investors.

Finally, in the UK, many universities recognise the UK Patents Act 1977. The research has been undertaken by employed researchers in university owned laboratories and therefore the university owns a significant share of the spin-out company. This is thought to hinder entrepreneurship, as it affords less room for shareholder ownership (and hence motivation) for the academic founder(s). In some cases universities take 30% or more of the initial equity (75+% is not unknown).

Because of my location, I have extensive experience of the workings of the Technology Transfer Office (TTO) at Cambridge University, although I have investigated and invested in spin-outs from other universities. Cambridge does not take any shareholding of the spin-out company, but commonly purchases shares by investing in the spin-out, using their own funds and buying equity at the same valuation as other investors – either angels or VCs.

In addition, the university takes a licence fee for any intellectual property rights (which may sometimes have an equity component), with any cash payment commencing only once commercial traction has been achieved. Pre spin-out, the university funds the patent application process and allows academics to elect to develop ideas without university ownership, although the University may still invest in these companies.

Other universities are gradually taking notice of this model (especially as it has worked well for Cambridge University and its spin-outs) and its advantages in terms of commercialising research for societal and economic benefit.

To conclude, a large proportion of frontier research is absolutely essential for innovation, but there are many obstacles on the road between the lab and the market. These are generally problems in product development when turning research into a commercial proposition, often caused by insufficient funding and inexperienced management.

I have been told, I am one of the most transparent angel investors in Europe – please see my website – www.petercowley.org. As of early 2022, of the 17 University spin-outs, I have had three positive exits, three are in an exit process and one failure, leaving ten. By any standards, these results are excellent, as if the other ten all fail (pretty unlikely), I hope still to have a success rate of over 40%, which is generally regarded as high for an angel investor.

I leave it to the reader to work out how and why, I have had so much “luck”.

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