

Advanced Material Development

15:31 06 Apr 2020

Advanced Material Development re-writing the rule-book on commercialising academic research

Recent data from the start-up tracking service Beauhurst revealed that university spinouts struggled to secure investment last year despite a record £12bn of equity backing for fledgeling companies.

The problem, it seems, can be traced to the fact that academia is attracted to esoteric and exotic areas of research seen as riskier than applied innovation that receives a financial leg-up from venture capital and pension funds.

And the funding gap is only part of the problem. While nine out of ten spinouts survive beyond five years, which is far better than the average for start-ups, many of these businesses struggle to punch through to commercial success.

The sad fact is the end of the line for some companies led by academics can be an ignominious one rather than a financially successful exit.

Brain drain?

It can mean surrendering on the cheap intellectual property that has taken years of blood, sweat and tears to develop - often to an opportunistic foreign entity — a 2020 reboot of the 1970s brain drain.

According to John Lee, a City veteran who is now chief executive of intellectual property specialist **Advanced Material Development** (AMD), there is a 'survivor bias' which highlights the success stories but also masks problems inherent with the current blueprint for commercialising academic research.

"I'm generally sceptical about spin-outs, but academia will always come up with a case study for a successful one," he says.

"They tend to be single-technology companies run by an academic who does not have the experience or understanding of the need for good corporate governance or the vital need for good cash control."

Research Excellence Framework

The government has tried to address the need to be commercial with the Research Excellence Framework (REF), which introduced a requirement that university research should show "impact".

However, the failure to translate academic funding into business success persists, according to AMD's Lee.

He and his management team work in close collaboration with the universities of Sussex, Surrey and Texas at Austin in the field of nanotechnology. But they have ripped up the old rulebook and replaced it with a research framework agreement, which, Lee explained, "governs the ongoing relationship between the company and the academic body as a collaborative effort".

So, while the university receives the academic kudos of publishing papers on the research the teams are working on, the company guides the focus of that work and retains the intellectual property with the aim of commercialising it. This,

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Code: AMDEV

Listing: PRIVATE

Sector: **Hardware & electrical equipment**

Website: **www.amdnano.com**

Company Synopsis:

World-Scale Challenges & Nano-Scale Solutions

Advanced Material Development (AMD) invests in and develops applications based on its proprietary nanomaterial platform technologies.

action@proactiveinvestors.com

Lee said, enables AMD to "focus on potential commercial outcomes, while avoiding bridges to nowhere".

Nimble, asset-light business

The AMD commercial team is aiming to conclude licensing deals with end-users, receiving milestone payments and sales royalties for the intellectual property rather than moving wholesale into manufacturing and sales. This keeps the business asset-light and manoeuvrable.

"We've put together a board of very experienced people with complementary skill sets who can operate with the university under this research framework agreement and communicate in the language of both academia and business," said Lee.

In the period since start-up, AMD has hit the ground running with patents applied for a materials production methodology, a radio frequency identification (RFID) technology and highly conductive printable inks that are "state-of-the-art".

"There are many claims by companies in this area but we are actually now progressing our work with RFID companies to commercialise our technology, which is the best corroboration of a new technology we can have," said Lee.

International partners

AMD has recently announced it is working with several global business names, including Walmart and various government defence agencies, as it looks to licence the innovations created by its battery of academics. The company also recently incorporated in the US and opened an office in Washington state.

The business is not wedded to using a single material, such as graphene, in its innovations, and its discoveries have applications across a wide range of industries.

So, as well as creating RFID devices for antennas and a stretchable rubber RFID technology that could bring us 'smart tyres', the firm is responding to "challenges such as stealth management" by working with the Ministry of Defence and the US military.

It has also pushed into life sciences in its complementary work in soft matter science at Surrey and in pharmaceutical nanotechnology at the University of Texas at Austin.

"Both the materials the teams from Sussex and Surrey have worked together before, so the collaborative effort is magnified," said Lee.

Talks with other universities

AMD expects to expand its network further by adding other academic skill sets from other universities to work with its current teams.

It is in talks with an unnamed Mid-West university in the US as it seeks to replicate its successful UK model, and closer to home there is significant interest in the paradigm-shifting business model.

"We are having ongoing conversations with UK universities that have specialities we want to access. They are keen to talk to us because we have proven we can raise money to fund research and commercialise it, and that should lead to a sustainable business model," said Lee.

So perhaps AMD is onto something.

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