

University spinouts: a British success story

UK universities are world leaders in commercialising their technology. Their cutting-edge innovation and approach to technology transfer means they punch above their weight in producing successful spinout companies. In 2020/21, businesses spun out of the 24 Russell Group universities alone created 33,000 jobs and brought in £4.9bn of investment to towns and cities across the country.

University technology transfer offices (TTOs) are focused on making a positive impact in the world, which is why most do not make a profit. Instead, UK TTOs provide a much wider range of support for fledgling tech businesses than their counterparts in the US. This includes filing patents, helping form business plans, hiring CEOs, negotiating licences, finding investors, and often providing vital proof of concept funding. Given the UK's less well-developed private-sector support for these activities and its lack of early-stage investment, TTO support is vital to high spinout success rates.

The equity stake UK universities take in spinout companies reflects this heightened level of support. Unlike many US universities, UK universities' equity is usually dilutable, meaning it reduces over time as new investors come into a spinout. Importantly, this means British universities typically end up owning comparable shares of a company to their US counterparts.

How are UK universities performing in technology transfer?

Technology transfer is the process of taking an idea and turning it into a real-world product or service. University technology transfer is high-risk as it is dealing with new, often unproven technology. As charities, universities do tech transfer to benefit both society and the economy: TTOs usually do not make a profit.ⁱ

Instead, successful commercialisation ventures help support further investment in new ventures and continued TTO activity. Without that income, much less funding would be available to invest, leading to a fall in spinout rates or an increase in spinout failure.ⁱⁱ **Currently, only one in ten university spinout companies fail, compared to the wider start-up environment where less than half of start-ups succeed.**ⁱⁱⁱ

UK universities are world-leading in tech transfer. Their spinouts attracted £2.5bn in equity investment in 2021, up from £1.5bn in the previous year and a five-fold increase on investment in 2012.^{iv} UK universities produce a similar number of spinout companies to those in the US per million pounds of research funding.^v UK universities also attract a higher share of their research income from industrial sources than those in the US. **University commercialisation and tech transfer are a striking British success story.**

Northern Gritstone, focused on university spinouts in the north of England, was launched in July 2021. It was founded by the Universities of Leeds, Manchester and Sheffield to support the commercialisation of science and IP-rich businesses. Many of these opportunities are in the most exciting emerging sectors, like advanced materials, health technology, cognitive computation and AI. By May, Northern Gritstone had raised £215m. It plans to raise £500m overall, with a huge role in supporting innovative growth and levelling up.

What are the main elements of spinout deals?

The parties involved in spinouts – academic inventors, company founders, the university and other investors – each take shares in it, known as founder's equity. Universities' share may depend on individual researchers' role in the company, the intellectual property (IP) involved, pre-company formation project-specific investment, and their role in making a spinout possible. A negotiating starting point is not the same as a final agreement.

University of Birmingham • University of Bristol • University of Cambridge • Cardiff University • Durham University
University of Edinburgh • University of Exeter • University of Glasgow • Imperial College London • King's College London
University of Leeds • University of Liverpool • London School of Economics and Political Science
University of Manchester • Newcastle University • University of Nottingham • University of Oxford
Queen Mary University of London • Queen's University Belfast • University of Sheffield • University of Southampton
University College London • University of Warwick • University of York

A 2022 report from the University Commercialisation and Innovation Policy Evidence Unit,^{vi} based on a detailed survey of universities covering the majority of UK spinouts, provides the best picture of how technology transfer works in the UK today. It found that **most respondents offered more than one approach to equity depending on the needs of particular spinouts, and that most had reviewed their spinout policies recently or were about to do so** – meaning that conclusions from old data should be viewed with caution.

The report also showed that, as a group, universities' share of equity was linked to how much support they provided to spinouts – and significantly lower than some claim. Where spinouts were built around significant university IP and benefited from university resources, initial median university equity was 33% – and when pre-agreed equity for incoming CEOs, employee options or other purposes was factored in, the median equity position ended up at 20%. Where universities made a smaller contribution, their median equity was 10%, falling to 5% once pre-agreed equity was accounted for.

Furthermore, **additional equity dilution means universities' share reduces further over time** as new investors take shares, often to less than 10%. An example of dilution is included as an appendix to this briefing.

Not all equity universities hold is founder's equity: they may buy extra shares, hold shares in trust for others (e.g. academics), or hold shares to create future options for executives and attract the best managers. Headline equity figures are therefore misleading.

An apparently high share of equity for a university may also reflect significantly smaller, and later, charges in licence fees, milestone payments, royalties or other revenues. US universities generally negotiate for payments of this kind at an earlier stage and/or at a higher rate than UK counterparts.

Why is the UK approach to spinouts different from the US?

UK universities invest more heavily in commercialisation than their US counterparts. Their TTOs analyse an idea or invention's viability, file patents, help form business plans, hire CEOs, negotiate licences, find investors, and often provide proof of concept funding. Their approach to equity reflects their much larger role in supporting spinouts, and greater focus on not taking money out of fledgling businesses early on.

US universities like Stanford, Harvard and MIT are embedded in the well-developed entrepreneurial ecosystems of Silicon Valley and Cambridge, Massachusetts. US universities can generally licence IP to new companies without offering other business support, as venture capital firms, law firms, accounting companies, business advisors and others can provide it. **Because these ecosystems are still in development and early-stage investment sources are lacking in the UK, university TTOs step in.** This is vital in an ecosystem where, according to the British Venture Capital Association, only £108 million out of £4.7 billion in private equity and venture investments went to seed, start-up and early-stage investments.

The **Universities of Glasgow, Bristol and King's College, London** established the Easy Access Innovation Partnership in 2011. Joined by 27 universities and research institutes worldwide, including the **Universities of Birmingham, Bristol, Exeter and Durham**, this is a world-leading collaboration pioneered by Russell Group universities. It allows **free access to university IP** for companies best able to accelerate tech transfer and ensure new products and services are developed to benefit society and the economy.

British universities can and do adapt their business support packages, and the IP offers attached to them, to their own local ecosystems. They also usually offer different support packages depending on the support they provide to spinouts, with equity shares reflecting the support provided:

- **Imperial College London** offers a 'basic support package' with a 5%-10% equity stake, or the traditional full package of support, where negotiations begin at 50% equity
- Where the **University of Cambridge** provides more spinout assistance it takes a larger equity stake; where it provides no assistance with the process, it takes either a small (5%) or no equity stake
- Where an inventor at **Queen Mary, University of London** neither draws on significant internal funds (around £50,000 of QMUL's funding streams or its patent or legal expenditure) nor agrees that Queen Mary Innovation will deliver on a strategy for commercialisation, they keep 90% of net revenue; where they do one of these, they keep 70%; where they do both, they keep 50%.

Imposing a one-size-fits-all approach to IP could result in universities reducing their commercialisation activity or offering a reduced package of support for new spinouts, which would likely lead to an increase in spinout failure.

Appendix: equity dilution in practice

In order to raise new capital, spinouts will go through funding rounds where they issue new shares in exchange for funding. Each time a spinout issues new shares, the share of equity each current owner holds will be reduced as new shares are issued, unless otherwise agreed (which is not usually the case in UK spinout deals).

An example will help to illustrate how this works in practice. This is a real-life example of a spinout from a Russell Group university:

Stage of company's development	What happened at this stage	Equity ownership at the end of this stage
Incorporation (2020)	<ul style="list-style-type: none"> Company was legally incorporated 	<ul style="list-style-type: none"> Founders (academic and commercial): 75.0% University: 25.0%
Seed funding round (February 2021)	<ul style="list-style-type: none"> Company was valued at £3.4 million £1.3 million of funding raised 	<ul style="list-style-type: none"> Founders: 52% University: 18% Investors: 31%
Second seed funding round (March 2022)	<ul style="list-style-type: none"> Company is valued at £11 million £2.15 million of funding raised Some of this funding comes from the university 	<ul style="list-style-type: none"> Founders: 44% University: 15% Non-university investors: 41%^{vii}

As the table shows, both founders' and universities' share of equity drop rapidly as new investors buy shares in each round, whether or not the cash value of that equity goes up. The university's share reduced by just under 40% (from a 25% stake to a 15% stake) even at the seed stage, and this would have gone down further had it not chosen to invest some more money itself.

ⁱ https://www.praxisauril.org.uk/sites/praxisunico.org.uk/files/2016_McMillan.pdf

ⁱⁱ https://www.praxisauril.org.uk/sites/praxisunico.org.uk/files/2016_McMillan.pdf

ⁱⁱⁱ <https://www.praxisauril.org.uk/sites/praxisunico.org.uk/files/Anderson%20Law%20University%20Spinouts%20report%20-%20April%202018.pdf>

^{iv} <https://parkwalkadvisors.com/2022/03/parkwalk-record-funding-for-university-spinouts-in-beauhurst-report-2022/>

^v Ibid.

^{vi}

https://www.ifm.eng.cam.ac.uk/uploads/UCI/knowledgehub/documents/2022_UCI_University_spinout_equity_approaches_report_vExecSumm.pdf

^{vii} Adds up to 100.1% due to rounding