

Spinouts UK

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Foreword

At this year's Praxis Auril conference in Harrogate, which took place 12-14 June, I was pleased to be part of one of the parallel sessions about Global KE and Investment, chaired by Nicola McConville of Penningtons Manches Cooper. I presented our data on investment into spinouts, in the context of the wider investment landscape for early-stage businesses.

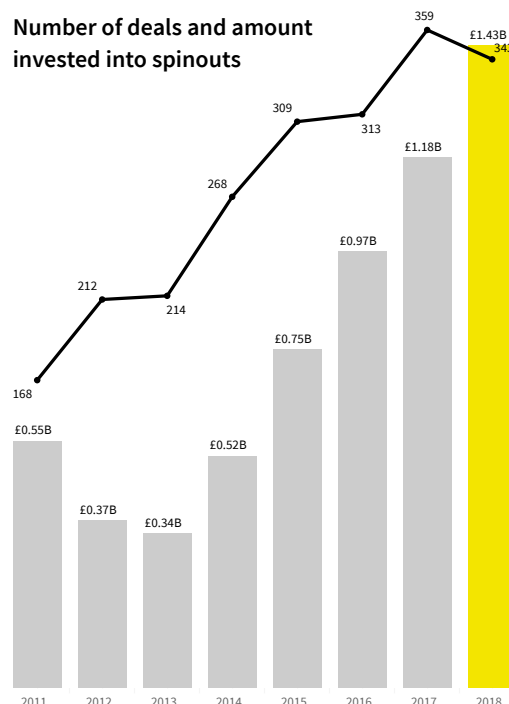
A record amount – nearly £1.5B – was invested into spinouts from academic institutions in 2018. Over £250M more was invested in spinouts than in 2017. This growth bucks the trend that we've seen across the UK's business population as a whole. Private businesses generally saw a fall in the amount of investment they received.

The number of investments in spinouts in 2018 fell a little to a total of 343 deals, roughly in line with the decline in deal numbers experienced by the UK's private businesses. For the rest of the UK, the fall in deals was concentrated at the seed-stage. For spinouts the decline in deal numbers was evenly distributed at every stage.

As the average size of investments climbs – the average seed-stage investment into a spinout neared £2M in 2018 – this fall in activity might not actually be a problem; companies can raise more in one go, so raise fewer times overall, whilst still getting the capital they need. This has been possible thanks to improvements in the overall supply of capital for these earliest-stage and riskiest businesses: whether its the EIS exemptions for Knowledge Intensive Companies or the greater resources being deployed by institutional investors committed to supporting IP-intensive businesses – with honourable mentions for funds managed by Parkwalk, Oxford Sciences Innovation (OSI) and Cambridge Innovation Capital (CIC).

It is impossible to overestimate the importance of the right kind of patient equity finance to the UK's spinouts so it is very heartening to see the level of investment climb and climb. Here at Beauhurst we will continue to track all of the UK's spinouts and the various kinds of investment and support they receive: equity investment, innovation grants, venture debt and more. And we will continue to provide this data to investors, advisors and policy-makers so they can continue to help this important sector of the economy to thrive.

HENRY WHORWOOD
HEAD OF RESEARCH & CONSULTANCY
BEAUHURST



Recent spinouts

These Spinouts are new to the Beauhurst platform. Further details on the companies can be found on page 19.

QUEEN'S UNIVERSITY BELFAST has two recent spinouts:

CIBUS ANALYTICAL

Cibus Analytical has developed methods to allow the food industry to detect food adulteration in a way that allows it to increase efficiency and protect consumers from unsafe food. The company is based on research led by Dr Terry McGrath, Research Fellow in the School of Biological Sciences.

VASCVERSA

VascVersa has developed a fast, simple, and consistent method to generate valuable primary human vascular stem cells from a small, easily obtained sample of human umbilical cord blood. These cells are of the highest quality and potency, which allows them to be the starting point for a wide range of applications in regenerative medicine research and therapy. The company is based on research led by Dr Christina O'Neill, Research Fellow in the School of Medicine, Dentistry and Biomedical Sciences.

PEPMOTEC

PepMoTec, a spinout from **DURHAM UNIVERSITY**, will modify and optimise peptides and proteins for therapeutic actions. The company was founded by Associate Professor Steven Cobb, Director of the Biophysical Sciences Institute. The research group had the required patents and funding from the European Regional Development Fund (ERDF), but required further support to develop a business plan to secure private investment and accelerate commercialisation. They turned to CPI and became a partner in the Chemical and Pharmaceutical Industries Innovation Support Programme (CSP).

Using its Innovation Integrator, experts from CPI Innovation assessed the team's resources, potential, and target market to help generate an effective business plan setting out the company's long-term ambitions.

POLYPROX THERAPEUTICS

UNIVERSITY OF CAMBRIDGE spinout PolyProx Therapeutics (www.polyprox.com) is focused on the discovery and development of a new class of drugs, Polyproxin™ molecules, to treat cancer and neurodegenerative diseases. Polyproxin™ molecules are biopharmaceuticals that selectively target disease-causing proteins and use natural cellular pathways to degrade or remove these proteins.

PolyProx Therapeutics is based on over a decade of research and IP from founder Professor Laura Itzhaki's laboratory at the Department of Pharmacology. With the help of serial Cambridge

biotech entrepreneurs Kevin Moulder as chief operating officer and Andrew Sandham as executive chairman, the company has raised £3.4 million investment from Cambridge Innovation Capital (CIC), RT Capital, and Cambridge Enterprise, which will support research operations to validate the technology across a range of tumour targets over the next two years.

PolyProx's technology has the potential to address cancer targets that have proven untreatable with current technologies, by using protein scaffolds to link a targeting entity at one end and a degradation trigger at the other.

SPACE AUDIT SYSTEMS

Space Audit Systems, a spinout from the **UNIVERSITY OF WOLVERHAMPTON**, has developed specialist software for auditing the use of rooms in public buildings. Universities are required to collect and report data about the utilisation of rooms in their estate, and in any event need this information to help plan when new buildings are required.

Conventionally, this work is undertaken by students employed on a casual basis, but this can leave some doubt over the data quality. Space Audit Systems has been formed to build on a business plan proposed by Nathan Leadbetter, a graduate in computer science from the University who works in the University's Registry department. He has overseen the development of software and a management system which has proven to be very effective in ensuring proper collection and reporting of the data at low cost, and he is now leading the new company.

Space Audit Systems has received £80k investment from the University and from the Caparo Angad Paul Fund. This Fund was established in memory of, the late Angad Paul, son of the University's Chancellor Rt Hon Lord Paul of Marylebone, who is chairman of the Caparo Group. The Fund invests in new technologies to support University research projects in transitioning from the laboratory to the commercial world.

Recent spinouts

RINRI THERAPEUTICS: A spinout from the **UNIVERSITY OF SHEFFIELD**, Rinri (rinri-therapeutics.com) is developing a cell-based therapy to restore hearing. The company, based on the work of Professor Marcelo Rivolta in the field of sensory stem cell biology, seeks to reverse neuropathic sensori-neural hearing loss (SNHL) through the repair of the damaged cytoarchitecture in the inner ear. SNHL happens when there is damage to the hair cells in the cochlear and/or the auditory nerve, and there are currently no pharmacological treatments available for the condition.

Rinri has secured investment of £1.4 million in a deal co-led by Boehringer Ingelheim Venture Fund and UCB Ventures, and joined by BioCity.

OXFORD UNIVERSITY INNOVATION launched five new companies in the first quarter of this year; two spinouts, two start-ups and a social enterprise:

OXFORD BRAIN DIAGNOSTICS (www.oxfordbraindiagnostics.com), a spinout using software to provide differential diagnosis of cognitive diseases;

ENANTIOX (ASYMMETRIC SUZUKI REACTIONS), a spinout developing compound libraries based on the asymmetric synthesis methodologies;

CARECOMPARE SERVICES (www.carecompare.net), a start-up connecting individuals with high quality carers and physiotherapists;

ROGUE INTERROBANG, a startup looking to develop divergent thinking through creativity;

GREATER CHANGE, a social enterprise providing a platform to make secure, cashless donations to the homeless

And two further companies since then:

MIROBIO (www.mirobio.com), developing therapeutic antibodies for treatment of inflammation of cancer, and founded by immunologists at the University of Oxford who have spent over 15 years focused on understanding the mechanisms which underlie T-cell signalling.

OXFORD IONICS, a spinout based on ion traps based quantum computing.

Recent exits

VERYAN MEDICAL

Veryan was formed in 2003 as a spinout from Imperial College London, and has designed, patented and developed a 3D nickel-titanium alloy stent technology, BioMimics 3D, based on the work of Professor Colin Caro (Emeritus Professor of Physiological Mechanics at Imperial) on the link between vessel geometry, blood flow mechanics and vascular disease. Veryan's BioMimics 3D peripheral vascular stent received US FDA approval on 4 October, 2018.

On 14 December 2018, Otsuka Medical Devices, part of Japan's Otsuka Holdings Co Ltd, a global healthcare group listed on the Tokyo Stock Exchange, announced its acquisition of Veryan Medical. The terms of the deal were not disclosed. Following the acquisition, Veryan and Otsuka Medical Devices plan to collaborate in developing Swirling Flow® stents for use in the treatment of vascular disease. As part of the acquisition, Veryan's R&D facility in Galway, Ireland, will be retained by Otsuka Medical Devices and will play a key role in the continued development of the technology.

LIFTUPP

Liftupp, an education software development platform, was created in 2009 by experts from the University of Liverpool's Dental School to improve the student experience through personalised education to ensure all aspects of the curriculum of study were taught and appropriately assessed.

In 2015, a spinout company was formed to expand the Liftupp product for use in new markets with continued support from the University's clinical academic teams.

The acquisition of Liftupp by ExamSoft, a

secure testing and assessment platform company based in Dallas, Texas, was announced on 5 March 2019. The terms of the acquisition were not disclosed. According to ExamSoft, Liftupp's OSCE, Mapping, and Develop tools will couple with its own secure exam delivery, assessment creation and reporting capabilities to provide a holistic understanding of student, programme, and institutional performance. "Health sciences education programmes need unique tools that fit the specific challenges that they face," said Sebastian Vos, CEO of ExamSoft. "The Liftupp products are designed with these challenges in mind, and we're excited to find new ways to support these clients. We also will look to find ways to enhance these technologies through ExamSoft's offering to serve an even wider variety of clients."

SELERIO

Selerio is a computer vision startup from Cambridge University working on 3D mapping for AR (augmented reality). The technology allows a smartphone camera to create 3D maps of what it is looking at and recognise objects.

Selerio was founded by siblings Flora Tasse, CTO, a PhD from Cambridge University, and Ghislain Fouodji, CEO, an ex-tech lead at Amazon Web Services. The company was acquired in May by Stroom, a Portland, Oregon-based AR startup that is meshing teleconferencing software with computer vision tech, for an undisclosed amount.

The startups were both members of betaworks' VisionCamp accelerator program last year where they met and collaborated while tackling separate computer vision problems in the AR space.

BICYCLE THERAPEUTICS

Bicycle Therapeutics, a University of Cambridge spinout, is a clinical-stage company developing a class of medicines referred to as Bicycles®, that are fully synthetic short peptides constrained to form two loops that stabilise their structural geometry. This constraint is designed to confer high affinity and selectivity, and the relatively large surface area presented by the molecule allows targets to be drugged that have historically been intractable to non-biological approaches. The company was founded in 2009 to convert Bicycles into transformative medicines for life-altering diseases.

The company completed an IPO on the US NASDAQ exchange on 23 May 2019, having raised approximately \$60.7 million. Prior to its IPO, Bicycle Therapeutics had received investment from Vertex Ventures HC, Cambridge Innovation Capital, Longwood Fund, Novartis Venture Fund, SROne, SVLS and Atlas Venture.

Further details of these exits are available on page 20.

PraxisAuril KE Awards

The KE (Knowledge Exchange) Awards, sponsored by UKRI, are the embodiment of what can be achieved, and recognise some of the best KE activity in the world.

PraxisAuril chair **SEAN FIELDING** commented on the recently raised R&D budget, "new collaborations and new ventures don't just happen because of the great ideas of our academics but because of a creative blend of teamwork, expertise and experience which, when it works well, is the best in the world".

KE VOLUNTEER OF THE YEAR

PAUL MACLENNAN, ANDERSON LAW LLP

Paul has supported the PraxisAuril training mission for many years, as a practitioner working with HEIs and other organisations in licensing, IP and spin-outs. He has developed professional, interactive and engaging training for the community across several of PraxisAuril courses, volunteering as a practitioner to train and develop new and experienced members of the profession.

KE PARTNERSHIP OF THE YEAR

UNIVERSITY OF OXFORD - NATIONAL TRUST PARTNERSHIP

Launched in 2018, the National Trust Partnership is a collaboration between Oxford University and the National Trust (NT) established to create opportunities for interdisciplinary research, knowledge exchange, public engagement and training across a range of disciplines and career levels at both institutions.

The partnership facilitates new research into NT places and collections, which in turn is embedded into public-facing interpretation and programming. Meanwhile, access to NT buildings, collections and landscapes is opened up to researchers alongside opportunities to learn from the charity's staff, engagement with its vast public audiences, and opportunities for more impactful research to be developed. Activities take place through a range of workstreams, including research placements and consultancy, conferences, workshops, public events, staff training, PhDs and student internships.

Following the initial Trusted Source funding, the collaboration has leveraged over £1.73 million to date. Now one year in, the Partnership continues to test and develop new methods for successful, sustained and mutually beneficial collaboration between academia and the heritage sector.

INTERNAL KE INITIATIVE OF THE YEAR

UNIVERSITY OF YORK ENTERPRISE FELLOWSHIP PROGRAMME

The University of York Enterprise Fellowship Programme is

an internal collaborative initiative that provides time and support for researchers from all disciplines to develop their ideas, enhance commercial awareness and develop skills for enterprise and external engagement.

The emphasis on external engagement is transforming the way researchers think, design and conduct research. In just 12 months, the levels of engagement in KE training have doubled and there is a palpable appetite to develop external relationships and get world-leading ideas out into wider society.

The two 2018 Fellows have formed partnerships with key stakeholders in their respective supply chains and are close to spinning-out their ideas. The four 2019 Enterprise Fellows are exploring how to accelerate the diagnosis of health conditions through a finger-print enabled spectroscopy; reduce greenhouse gas emissions through field-based data capture technology; diagnose early stage Alzheimer's Disease through a tablet-based psychological test; and increase the amount of recyclable plastic by identifying through computer modelling how problem additives can be extracted.

EXTERNAL KE INITIATIVE OF THE YEAR

UNIVERSITY OF THE WEST OF ENGLAND (UWE BRISTOL) - SCALE UP 4 GROWTH

Scale Up 4 Growth (S4G) is a £2.7m programme, designed by University of the West of England (UWE Bristol)'s Research, Business and Innovation (RBI) team and funded by the ERDF. S4G is a three-year, free programme of support for businesses in the West of England that are looking to grow, expand, and scale. The programme is delivered by the S4G Partnership of University of the West of England (UWE Bristol) (lead), NatWest, and Foot Anstey LLP and includes two-day 'business growth' workshops, and grants of £10k–40k for projects that help businesses address barriers to growth.

The programme is designed explicitly around the 'five key gaps' that prevent businesses from scaling up, identified by the ScaleUp Institute's pioneering research: Skills; Finance; Markets; Infrastructure; and Leadership. Since the launch of S4G in November 2018, over 300 businesses have registered to be part of the network.

S4G is an excellent example of an external KE initiative that brings together the very best in university-business partnership working, sharing knowledge and expertise from academia and industry with growing businesses, to benefit the regional economy.

KEY DEAL OF THE YEAR**COVENTRY UNIVERSITY GROUP - HOPE FOR THE COMMUNITY**

Hope for The Community CIC (H4C) is a social enterprise providing organisations with affordable, face-to-face and digital products and services to empower people to manage their own health and wellbeing. It is Coventry University's first research social enterprise spinout company arising from a collaboration across the Coventry University Group including academics, intellectual property, enterprise and innovation business support specialists and community volunteers.

15,000 people living with or affected by a long-term physical and/or mental health condition have benefited from H4C programmes, reporting feeling less anxious, depressed, stressed and becoming more resilient, grateful and hopeful. Data from H4C interventions are available to Coventry University staff and PhD students for research, thus continuously strengthening the evidence-base of H4C programmes, providing a seal of academic rigour, authenticity and confidence in the efficacy of the programmes.

H4C clients include NHS England, Macmillan Cancer Support, Carers Trust Heart of England, European Commission, Lionheart and Bethany's Wish.

KEY TEAM OF THE YEAR**UNIVERSITY OF LIVERPOOL - CONSULTANCY TEAM**

The consultancy team at the University of Liverpool, a small team of just 2.5 FTE, is delivering the University's vision to create a common approach for the support of consultancy, facilities and equipment service projects.

The team works hard to ensure the research expertise and specialist knowledge within the University is streamlined and shared in a way that encourages impactful knowledge exchange with a variety of external organisations. They have successfully embedded a revolutionary online system, CONSULT, through which all consultancy projects are recorded, they have introduced a new policy and process, and they have achieved a significant increase in the number of projects supported.

The team works closely with academic colleagues to ensure academic interests are protected, and liaises with partners to make sure objectives are met. Professor Alex Balch, Department of Politics, said "The Team's support and attitude is really exemplary, and I could not have completed my project without them."

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Northern Accelerator to establish £100m venture capital fund for university spin-outs

NORTHERN ACCELERATOR is a collaboration between Durham, Newcastle, Northumbria, and Sunderland universities, which since its inception in 2016 has increased the number of spinout businesses from its partner universities from an average of 1.8 per year, to an expected ten businesses launching in this academic year alone.

The group is now seeking a venture capital partner to raise funds and manage investment, including the creation and management of a North East Universities Investment Fund, intended to be an evergreen venture capital fund for spinout businesses from North East universities.

Spinout businesses from these four universities include success stories such as Kromek, Applied Graphene Materials, and Arrow Therapeutics, and more recent ventures such as Advanced Electric Machines and AMLo Bioscience.

Northern Accelerator's model, building on an initial ERDF programme, has been put in place with the backing of £4.9million from Research England's Connecting Capabilities Fund and offers a range of innovation support. This includes the 'executives into business' programme which matches talented business with opportunities to lead spin-out businesses from an early stage. Executives into business offers remuneration, linked to key milestones, in addition to traditional sweat activity and this model has attracted a strong pool of candidate executives from an international base.

This activity alone has already led to a significant increase in commercialisation of research, and is now bolstered by additional funding and activity including an Ideas and impact hub providing training to help recognise and exploit intellectual property to encourage academics to embrace commercialisation opportunities; pre-incorporation funding to take high quality research projects closer to commercialisation; innovation assessment offering a detailed business-readiness diagnostic providing external due-diligence; and a seed capital investment fund offering spinouts help to validate business models and demonstrate value.

www.northernaccelerator.org

Thoughts from our partners

Deriving insight from the HEB-CI fruit basket

Oxford University innovation's (OUI) COO Adam Stoten takes a closer look at the data output of the HEB-CI survey.

Every year, universities across the UK pull together data for the Higher Education Business and Community Interaction (HEB-CI) survey, intended to provide insight into the exchange of knowledge between UK universities and the wider world. The survey is curated by the Higher Education Statistics Agency (HESA), the government's designated data body which collects, processes, and publishes data about higher education in the UK. This data is then published, with the most recent report being aired in April 2019.

All the data is available both in summary tables and in raw form via the HESA website and, when the latest versions of the IP and consultancy stats are published, I can never resist spending some time perusing the figures. The initial motivation is usually the same – to see how the Oxford metrics stack up against others in the UK – but just as consistently this mildly competitive instinct rapidly gives way to a sense of confusion at some of the numbers presented.

Taking a broad view, the tables probably reflect what one might expect in terms of scale of activity across the various commercialisation metrics (spinouts, start-ups, consultancy agreements, licences, disclosures etc), as they tend to be proportional to an institution's research income. However, digging a little deeper, there are some interesting idiosyncrasies.

For example, when looking at stats for numbers of licences completed (excluding software), Manchester executed a huge 3,304 licences last year, but with the vast majority (3,164) being issued to non-commercial organisations. Oxford comes second in this category with 2,491, with our numbers similarly boosted by non-commercial licences (1,953); in our case the free of charge licensing of health outcome questionnaires to public sector bodies. Beyond these two institutions, total licence numbers drop off significantly, although four other universities granted more than 100 non-commercial licences last year.

So, we have half a dozen universities executing very large numbers of non-commercial licences – but what does this tell us? I know the story behind the Oxford numbers, where we started a few years ago to issue non-exclusive licences for highly validated health outcomes questionnaires both to industry

(for a fee) and to public sector organisations (free of charge and in much higher volumes), and have now expanded from a couple of Oxford-derived questionnaires to a large portfolio originating both from Oxford and elsewhere. But what about Manchester University, or indeed Cardiff University (450), or the University of East Anglia (511)? Do the large numbers mean that these institutions are “better” at licensing to non-commercial organisations, or have they serendipitously (or otherwise) generated IP assets which lend themselves to high volumes of – probably non-exclusive – transactions?

The University of East Anglia (UEA) is also interesting on another front in that it ranks third for licences issued to SMEs last year (211), with only Cambridge (308) and Oxford (298) higher. If research funding is an indicator of innovation/IP output, then the fact that UEA receives less than one tenth as much research income from grants and contracts as Oxford and Cambridge raises an interesting question of what story sits behind the figure of 211 SME licences. Is there a particular scheme at UEA that has enjoyed success? Are there lessons that can be learned and applied elsewhere?

Perhaps some of the untold stories behind HEB-CI data are not untold at all and are reflected in the Impact Case Studies which form an increasingly important element of the Research Excellence Framework (REF). However, I would be willing to wager that this is not always the case, and that many will fall outside of the REF criteria.

Let's take disclosures as another example. Coventry University (research income £9.9m) generated 248 disclosures last year, ahead of Cambridge (235 disclosures and £525m research income). Also ranking high is the Royal College of Art with 120 disclosures, twice as many as research-intensive institutions such as Bristol, Southampton, Edinburgh and Leeds. Should such differences be attributed (perhaps unfairly) to inconsistent application of the criteria for inclusion in the different categories surveyed, or can they be explained by the very different natures of the institutions' respective activities?

Thoughts from our partners

The term “disclosure” is defined by HESA as “the point at which an academic mentions their idea to disclose their activities with the prospect of seeking IP”. It includes “patents, copyright, design registrations and trademarks” as examples of relevant IP. While, for example, the Royal College of Art may not have much patentable IP (as evidenced by the six patent applications filed last year), it may have much more in the way of design rights or copyright. Even more extreme is Birmingham City University which filed no patents at all last year, despite a healthy 105 disclosures – were none of these patentable or did the majority constitute other forms of non-patentable IP?

The more comparisons one makes, the clearer it becomes that we are comparing apples with pears, oranges and potentially more distant food groups. How much does this matter? Well, maybe quite a lot. There certainly feels like a missed opportunity to contextualise the data and to use some of the standout figures from the survey as a catalyst to promote some of the innovative and diverse approaches being taken in HEIs across the UK to drive commercialisation and knowledge exchange.

I would love to understand some of the context behind the examples cited above. I’m particularly aware that despite the differences in research income, the likes of Oxford can often learn from what less research-intensive or more narrowly focused institutions are doing to promote entrepreneurial outputs. Nowhere is this more evident than in the graduate start-up category, where the top 10 is dominated by smaller institutions and with a top three of the Royal College of Art (again!), University of the Arts, London and Kingston University whose graduates created 719 start-ups between them last year. By way of contrast, Oxford recorded just 31 for the same period, although our mechanisms for collecting accurate data on this metric remain imperfect and our numbers incomplete, as is the case in many universities.

Beyond an opportunity to identify high-performing institutions, what else is HEB-CI data used for? It remains part of the equation for determining allocation of institutional Higher Education Innovation Fund (HEIF) awards, and certain HEB-CI metrics have been chosen for inclusion in the new Knowledge Exchange Framework (KEF) for which Oxford has been chosen to take part in a pilot; sensibly grouped with similar peer institutions. However, the KEF remains in a consultation phase and the direct implications of relative performance

in this framework remain unclear. What does seem clear is that, based simply on the numbers and in the absence of an accompanying narrative, it is hard to know what can sensibly be inferred from certain data in the HEB-CI summary tables. While a small proportion of proposed KEF metrics include a narrative summary, the majority (being transposed from HEB-CI) do not, and so we potentially encounter the same barriers to sensible interpretation.

So what other instruments do we have that could shed light on best practice in UK KE and bring HEB-CI data to life? Enter the KE Concordat. Hot off the press for consultation, this is a companion piece to the KEF which sets out a series of best practice principles to which HEIs would sign up, and which commits them to a self-assessment exercise and a publicly available action plan to capitalise on strengths and address weaknesses. This will, in theory, provide government, industry and the public with greater insight into how well HEIs are conducting the myriad forms of knowledge exchange, and guide such institutions in improving the overall quality of their KE delivery.

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Thoughts from our partners

Deriving insight from the HEB-CI fruit basket | OUI

So might the KE Concordat compensate fully for the opportunities arguably missed with HEB-CI data in terms of enabling universities to highlight and share their specific initiatives that represent best practice in KE? At this stage it is a stated aim – which is great. However, much of the current discussions are focused more on exactly how both the KEF and the Concordat will be implemented and what their role will be in determining future government funding decisions. It would be a shame if the potential value of the Concordat as a communication channel is in any way diminished by such concerns.

The UK, like almost every other significant economic power in the world, likes to wear its hair shirt about the perception that it is good at research but no good at commercialisation (note to penitents – it's difficult, high risk and more likely to fail than succeed, but remains critical to giving potentially transformative innovations a chance to generate positive impact). Given the abundance of good practice and innovation in UK knowledge exchange that takes place week in, week out, in all parts of the country, we collectively need to grasp any opportunity to better showcase the success stories behind the figures at the top of the HEBCI data tables – many of which may not qualify for inclusion as REF Impact Case Studies.

Over the next few weeks responses to the KE Concordat consultation will be gathered. I would urge fellow practitioners to not only consider whether the principles are sound and the assessment element well thought through (though these are of course important questions), but also to take the opportunity to highlight the potential importance of the Concordat to more effectively highlight to the wider world the huge variety and impact of nationwide KE activities and across very different types of HEI. Such context would provide some great case studies for institutions, funders, government and, perhaps even the general public to help understand how taxes and donations are being translated by universities not only into knowledge, but into new products, new services, new policies and eventually jobs and more taxes. It might even give us cause to remove our cilicium every now and again.

ADAM STOTEN
CHIEF OPERATING OFFICER
OXFORD UNIVERSITY INNOVATION LTD
innovation.ox.ac.uk

Thoughts from our partners

Nurturing university spinouts – 5 key ingredients for success

We explore how universities can work with investors to identify and nurture spinout businesses with Mercia's Investment Director and Head of Universities, Dr Nicola Broughton.

UK universities are a hotbed of world leading research and an exciting source of deep technology spin-outs. The ability to produce spinouts which can lead to game changing business ideas is something which Mercia has recognised and supports through its university focused team.

The University Team has received over 200 enquiries to consider for investment in the last financial year and more than £10.0million has been invested by Mercia, alongside more than £6.0 million of co-investment into 19 different spinouts. Further details about the team managing these investments are shown at the end of this page.

1. CLOSE WORKING RELATIONSHIPS WILL UNCOVER OPPORTUNITIES

Regular engagement with academics and technology transfer offices is the key to success. This shouldn't be limited to reactive meetings, but instead a consistent pattern of communication should be established from the outset to build and maintain trust and advise on the potential of an opportunity as ideas begin to form.

Early stage involvement with an investor gives the academic and the university expert insight into how best to commercialise their ideas; determine whether company formation is the best route to market; approach pre-setup, company structure, intellectual property, finding the right team, market insight through sector input and more.

Recent research amongst Mercia's university networks revealed that our university partners (of which there are 19) value close working relationships and regular interaction, citing that the "Mercia team were key to uncovering opportunities and moulding fledging ideas into investable opportunities".

George Baxter, CEO of Edinburgh Innovations commented: "Mercia has added a great deal of value by uncovering 20 opportunities that we didn't/couldn't identify ourselves. They bring a different perspective, different backgrounds and different experience. They talk to people we weren't talking

to by holding coffee mornings, breakfast meetings, hosting seminars and have brought different people into the university from Mercia so we got access to lots of teams and expertise."

2. BUILDING THE OPPORTUNITY IS JUST AS IMPORTANT AS UNCOVERING IT

Once an investment has been identified within a university, the Investment Team will help to shape the opportunity, give guidance to the academic team, bring in sector experts with deep market knowledge and help prepare the proposition for spin-out. In university spin-outs, it is common for an academic to be at the heart of the business, but commercial management is essential; this is a key area where an investor, who is likely to have access to a very large network of contacts, can add considerable value.

David Macbeth, previously of Strathclyde University and now at York University, explained: "Mercia's team is able to expose the opportunities, thanks to their relevant market knowledge. They tend to be more specialist than angel investors and have an informed view of a number of market sectors."

Where the timescale to exit can often be ten years or more for university spinouts, the ability to source co-investments is an important attribute. Nicola explained: "An investor that can identify other investment partners to bring alongside them is a huge benefit. Mercia brought in circa £13 million matched funding for spinouts over the last year."

3. BUILDING THE BOARD IS PLANNING FOR SUCCESS

No matter how good the underlying technology is, it is the strength of the Board and management team which will make, or conversely break, the opportunity.

Universities and their spinouts require a holistic approach, and not just capital. Input is needed on IP, business strategy, legal advice, and of course the huge challenge of senior level recruitment.

Thoughts from our partners

Nurturing university spinouts | Mercia Technologies

An investor that can help the university to build and strengthen a Board is key. One way this might be done is to leverage the resources of an investor that has an in-house recruitment function, or more commonly reaching out to their senior executive network or contacts from specialist recruitment firms to help identify the skills gaps and find specialists that can add real value to the opportunity.

4. STANDARD TERMS WILL STREAMLINE PROCESSES

Transacting a spinout deal typically takes between four and six months although there can of course be exceptions to that rule. One of the main pressures of the transaction is the raft of legal documents involved in starting up the business. These are often put in place at the time of investment and are in addition to standard investment legal documents.

Typically licensing or assignment of university IP into the spinout business is the area which takes the most time, since each university has its own way of doing this and its own policy for rewarding academics. However, once a deal has completed, the investor should work alongside the university to create standardised legal documents which means all subsequent transactions can be streamlined.

This point is explained by a university partner who says “Mercia has helped us to regularise our paperwork which has been really useful. Some deals fail because they take too long and we don’t want that to happen. We have now agreed all our standard terms and agreements.”

5. TRACK RECORD IS EVERYTHING

When it comes to working with an investor, a university will want to consider all sorts of things, but perhaps the most important element is the investor’s track record. The ability for the investor to demonstrate that they have spun out academic research into successful businesses is paramount.

Mercia was founded by chief executive Mark Payton to manage a portfolio focused on providing seed capital for University of Birmingham and University of Warwick projects. Move forward

twelve years and Mercia is now listed on AIM with £0.5 billion of assets under management and has one of the largest and most active university networks in the UK.

THE PORTFOLIO HAS ALREADY ENJOYED SOME EARLY SUCCESSES INCLUDING:

- University of Warwick spinout Allinea was sold to ARM, the world’s leading semiconductor IP company, for a total cash consideration of up to £18.1 million. The sale represented a return of circa 21x on the original investment cost.
- A successful IPO of Abzena, (a joint University of Warwick and Imperial College spinout), was achieved on 24 August 2014 and Mercia successfully exited in 2017.
- University of Leeds spinout Science Warehouse, one of the Mercia’s leading direct investments, was sold to Advanced, for a total cash consideration of £16.9 million in 2017.

But it’s not just university spinouts that Mercia has delivered on. It is the same team which is behind the RisingStars Growth Funds, arguably one of the most successful VC funds in Europe. The fund was set up in 2004 as a £19 million venture fund to back North West based technology businesses and it has already realised more than £100 million to investors, an impressive return to say the least.

TO FIND OUT MORE ABOUT MERCIA’S WORK WITH UNIVERSITIES, PLEASE LOOK AT

OUR UNIVERSITY PARTNERS –

<https://www.merciatech.co.uk/about/university-partners/>

OUR PORTFOLIO –

<https://www.merciatech.co.uk/portfolio/>

OUR PEOPLE –

<https://www.merciatech.co.uk/our-people/>

Thoughts from our partners

The University Team at Mercia Technologies

DR NICOLA BROUGHTON

Nicola has a wealth of experience in both life sciences and university commercialisation, having founded her own IP commercialisation company working as a transfer and licensing advisor to many universities across the UK. She also spent 10 years as a commercial director for a University of Leeds spinout. Nicola holds a PhD in Biochemistry from the Imperial Cancer Research Fund and King's College London. She also holds an MBA from the University of Northumbria at Newcastle, a BA in Biochemistry from the University of Oxford, and a Diploma in Law from the National Association of Paralegals.

DR JO SLATA-NEWSON

Jo has a variety of experience of early-stage businesses, through operational and consultancy roles across renewable energy, materials, electronics, medical and manufacturing sectors. Prior to Mercia, Jo managed an EIS investment platform focused on life sciences and biotech opportunities. Jo started her career in academic research, working across several areas of technology, including a PhD in Chemistry/Nanoscience, and postdoc in the Electrical and Computer Engineering department at the University of British Columbia, Canada where she also lectured in Biomedical Engineering. Jo holds PhD, MA and MSci degrees from the University of Cambridge, is a CFA charterholder and a member of the CFA Institute, London.

DR ISABEL DODD

Isabel has a range of experience in the drug development sector from early-stage research companies through to GMP manufacture and clinical trials. She holds a PhD in Molecular Virology and a degree in Biochemistry and Molecular Biology.

Thoughts from our partners

Levelling the Intellectual Property playing field

MFL Science & Technology

The most valuable asset that many spinout businesses own is not something physical yet can be the cornerstone of their business, i.e. their intellectual property.

Businesses have often spent thousands of pounds in obtaining patents to provide protection, but what happens in the event that the business is faced with an allegation that they have infringed a third party's intellectual property, or they become aware that someone is infringing their intellectual property? The truth is that for an early stage/spinout business the cost of litigation to either defend an action or to assert the intellectual property rights of the company can be prohibitive and potentially ruinous.

Historically, intellectual property insurance has been a costly purchase, which in turn has meant that only those businesses that perceive they have a genuine exposure have been the ones to seek insurance protection. This has meant that the intellectual property insurance market has been skewed towards a higher risk book of business, which in turn has perpetuated the high cost market.

Some insurers have now recognised this issue and are seeking to gain greater traction in the SME sector by offering lower cost products in an attempt to make intellectual property insurance a policy that companies will view as part of their general insurance programme rather than a special purchase. What value does an intellectual property insurance policy provide?

The reality is that the cover levels the playing field for spinouts and other SME businesses when it comes to an intellectual property dispute, providing companies who purchase the cover with the comfort that they can fund a potentially costly financial outlay to defend an action or indeed have the financial support to pursue an action against an infringer.

An intellectual property insurance policy contains three key heads of cover:

DEFENCE:

Legal and associated costs in relation to defending an allegation that you have infringed another's intellectual property. Should have been found to have done so, cover provides for any damages that you are legally obligated to pay.

ENFORCEMENT:

Legal and associated costs in relation to asserting your intellectual property rights. In the event that you then receive a counter action from the alleged infringer; you will receive the benefit of the defence cover above.

CONTRACTUAL:

Defence or assertion as above in relation to intellectual property provisions within contracts that you have in the operation of your business. For example, the licensing in of intellectual property from a university, any out-licensing, manufacturing agreements, distribution agreements, or joint ventures.

The entry level for premiums for these types of covers is now significantly lower than it has ever been, with qualifying businesses able to purchase £500,000 of cover in the annual aggregate for a premium of £3,500 plus Insurance Premium Tax per annum. In general, the qualifying criterion is a UK business with a turnover of less than £5m.

If you would like to know more, then please feel free to contact me or one of the team.

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RECENT SPINOUTS

COMPANY NAME	INCORPORATION DATE	HEAD OFFICE REGION	SECTORS	UNIVERSITY
Bestevidence	11/12/2018	South East	Educational services Information services Mobile apps Other health and fitness	City University
CityDefend	5/2/2019	London	Analytics, insight, tools Desktop software Security services	City University
iCOMAT	12/12/2018	South West	Machinery Materials technology	University of Bristol
Cibus Analytical	14/12/2018	Northern Ireland	Analytics, insight, tools	Queen's University Belfast
VascVersa	20/12/2018	Northern Ireland	Pharmaceuticals Research tools/reagents	Queen's University Belfast
Pepmotec	12/2/2019	North East	Pharmaceuticals	Durham University
PolyProx Therapeutics	7/11/2018	East of England	Pharmaceuticals	University of Cambridge
Space Audit Systems	21/1/2018	West Midlands	Analytics, insight, tools	University of Wolverhampton
Rinri Therapeutics	11/15/2018	Yorkshire and Humberside	Other health and fitness	University of Sheffield

Data

RECENT EXITS

EXIT DATE	TYPE	COMPANY NAME	INCORPORATION DATE	ACQUIRER/ STOCK MARKET	VALUE	UNIVERSITY
14/12/2018	Acquired	Veryan Medical	-	Otsuka	n/d	Imperial College London
28/02/2019	Acquired	Granta	6/4/1993	Ansys	n/d	University of Cambridge
26/03/2019	Acquired	LiftUpp	20/7/2015	ExamSoft	n/d	University of Liverpool
23/05/2019	Acquired	Selerio	1/9/2016	Stream	n/d	University of Cambridge
23/05/2019	IPO	Bicycle Therapeutics	13/7/2009	NASDAQ	\$60.7m	University of Cambridge
14/02/2019	IPO	Orchard Therapeutics	02/09/2015	NASDAQ	\$225m	UCL

Data

TOP 15 RECENT DEALS

COMPANY NAME	DEAL DATE	AMOUNT RAISED	INVESTORS (DISCLOSED)	UNIVERSITY
Onfido	03/04/2019	£38,080,064	Augmentum Capital Microsoft	University of Oxford
Cytora	16/04/2019	£25,000,000	Cambridge Innovation Capital, Parkwalk Advisors	University of Cambridge
Storm Therapeutics	20/05/2019	£14,000,000	Cambridge Innovation Capital, IP Group, Merck Group, Pfizer, Seroba Kernel	University of Cambridge
Congenica	30/04/2019	£13,250,000	Parkwalk Advisors	University of Cambridge
Paragraf	28/05/2019	£12,800,004	None disclosed	University of Cambridge
Blu Wireless Technology	03/05/2019	£12,700,000	Calculus Capital, Guinness Asset Management	University of Bristol
Realeyes	07/06/2019	£9,770,178	Draper Esprit	University of Oxford
AQDOT	10/04/2019	£6,000,000	IP Group, Parkwalk Advisors	University of Cambridge
UltraSoC	24/06/2019	£5,000,000	Octopus Group, Oxford Capital Partners, Seraphim Capital	University of Kent
ApcinteX	03/04/2019	£4,250,002	None disclosed	University of Cambridge
Z-Factor	29/04/2019	£3,999,972	None disclosed	University of Cambridge
PolyProx Therapeutics	30/04/2019	£3,400,000	Cambridge Innovation Capital, Cambridge Enterprise	University of Cambridge
Symetrica	18/06/2019	£3,000,000	Albion Capital Group, Nesta, Parkwalk Advisors, Technology Venture Partners	University of Southampton
Oxford Semantic Technologies	06/06/2019	£3,000,000	Oxford Sciences Innovation	University of Oxford
Synaptec	14/05/2019	£2,900,000	Foresight Group, Equity Gap, Scottish Enterprise, Braveheart Investment Group	University of Strathclyde

Project Partners

We are very grateful to the following organisations for their support.



IP GROUP works with leading universities to develop and commercialise some of the world's most exciting technology innovations. Offering more than traditional venture capital, IP Group provides its companies with business building expertise, networks, recruitment and business support. The Group's portfolio includes early stage to mature businesses across the biotech, healthcare, technology and cleantech sectors.

www.ipgroupplc.com



OXFORD UNIVERSITY INNOVATION (OUI) is the research commercialisation company of the University of Oxford, managing technology transfer and consulting activities. Having created more than 150 spinouts, Oxford is first in the UK for number of spinouts, the number that survive, and jobs created. In the 2016-17 financial year OUI completed more than 50 licenses and consulting agreements every month.

innovation.ox.ac.uk



UNIVERSITY OF BIRMINGHAM ENTERPRISE supports academics who want to innovate, take their ideas to market, work with businesses and social enterprises, or enrich their professional lives by doing academic consultancy projects. We do this by providing enterprise training, funding, office and laboratory space, and a full technology transfer service. University of Birmingham Enterprise also manages investment funds and the incubation services and facilities at the Birmingham Research Park.

www.birmingham.ac.uk/enterprise



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MERCIA TECHNOLOGIES is a leading UK technology investor with a particular emphasis on the Midlands, North of England and Scotland. We focus on high growth sectors leveraging the team's deep expertise across four fields including digital & digital entertainment; software & the internet; electronics, materials, manufacturing & engineering; and life sciences & biosciences.

www.merciatech.co.uk



SCOTTISH ENTERPRISE helps translate ideas and research into more spinout and start-up companies, and encourages Scottish companies to make use of technology and research being developed.

www.scottish-enterprise.com



In partnership with



MFL SCIENCE & TECHNOLOGY is a specialist insurance broker risk management adviser to many of the UK's leading 'spin out' businesses.

www.m-f-l.co.uk



UMIP division of The University of Manchester Ltd, is the University's agent for IP commercialisation. UMIP brings the University's ground-breaking inventions and software into the commercial world by attracting entrepreneurs, investors and corporate venture partners to our campus and engaging with academic colleagues to license or spin out companies.

umi3.com



UCLB is a technology transfer company commercialising on the research and innovations developed by UCL. Offering world-class expertise in areas from life sciences to engineering and from the arts to the built environment, we work to make commercial connections between the expertise and innovations of UCL's academics and the needs of industry and the wider marketplace.

www.uclb.com

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