

Reid Review of Innovation in Wales

Written response from PraxisUnico / AURIL

PraxisUnico and the Association for University Research and Industry Links (AURIL) merged on 1 April 2017 to create the UK's national association for Knowledge Exchange and Commercialisation (KEC) professionals working in universities and public sector research organisations to manage IP, commercialisation activities, and collaborations between academics and external organisations to deliver social and economic impact¹. Our network of professionals extends to industry representatives and professional service providers (such as patent attorneys) to create a well-informed community with a variety of perspectives that inform and influence policy and debate.

In Wales, our network is good with 195 members based across nine universities (Aberystwyth, Bangor, Swansea, University of South Wales, University of Wales Trinity St David, Glyndwr Wrexham, Cardiff and Cardiff Met and the Open University in Wales). Additionally we are strengthening the already good linkage with the Welsh Industrial Liaison Officers (WILO) network and foresee working together on joint events and activities. Outside the university sector the new Compound Semiconductor Application Catapult is a member as is Finance Wales. Through our UKSPA relationship many of the regions science parks, incubators and accelerators are also part of our professional community (e.g. Orbit Business Incubator, M-SParc, Bridge Innovation Centre).

Our purpose in contributing to this Review is to underline the importance of maintaining a professional, skilled network in research institutions that can help to stimulate innovation, productivity and growth; locally and nationally for economic and social benefit and with a wide range of external stakeholders. With recent policy focusing on stimulating collaboration between universities too, it is important that there is sufficient resource for engagement across the UK and the capacity for sharing good practice.

PraxisUnico/AURIL is helping members across the UK by equipping universities and research organisations with the skills they need to make best use of their KEC resources. All regions – devolved or not – benefit from learning from what is happening elsewhere in the UK mediated by conversations between different sized and resourced offices to share good practice. PraxisUnico's training model is based around sharing experience and good practice across the sector for

¹ See www.auril.org.uk and www.praxisunico.org.uk.

organisations and individuals. We run a dedicated 'Directors' email discussion list so that practitioners can call upon advice and experience for day-to-day or one-off decision making. This complements annual face-to-face meetings. For smaller offices, with broad but shallow remits, this access to trusted advice is key.

The value of regional representation, special interest groups, and sector-specific skills for our members is being considered to address particular contextual needs such as the current innovation funding debate in Wales. Above all, we emphasise the need for dialogue when considering new initiatives and models for the successful treatment of IP in research, collaboration and commercialisation. Sector stakeholders must be brought together – businesses, academics, business groups, sector specialists and funders – to share understanding of what is needed to create more demand for exploitable research and longer-term commitment to sustain spin-outs and start-ups.

We have chosen to respond to the following three questions posed by the Reid Review because they are areas where we as a national organisation can share wider KEC perspectives relevant to the review.

What can be done by the Welsh Government, Welsh universities and the private sector to increase the competitiveness of the research and innovation landscape in Wales, thereby increasing the attractiveness of Wales as a place to undertake research and innovation and attract inward investment and investors from outside Wales, both in academia and in industry?

The introduction of impact to the REF in 2014 has undoubtedly raised the profile of high-quality research across all disciplines in UK universities. Wales performed well in the last REF; according to HEFCW findings showed that half of the research submitted by Welsh universities was world-leading in terms of its impact on life beyond academia. The challenge is to maintain, improve and promote this research base whilst also providing structures to help industry to engage and invest for the long-term, with individual universities and in consortia, within Wales but also bringing in new partners. This challenge underlines the importance of the dual-support system which provides dedicated, ring-fenced funding, for research (QR) and separate funding streams for specific projects and programmes. The latter includes HEIF in England and the University Innovation Fund in Scotland.

Welsh universities have performed relatively well in the annual, national, HE Business Community Interactions statistics collected by HESA for HEFCE but figures for 2014-15 showed a 24% decrease in total income from regeneration and development programmes: with this source of funding so at risk and without dedicated innovation funding Welsh universities risk falling behind because they lack resources to sell into the business market.

The barriers for businesses to developing long-term collaborations are interpersonal and institutional. The initial challenge is likely to be identifying a university that has skills and knowledge of interest to the business and where these are located. Despite the provision of dedicated points of access for business – ‘Expertise Wales’ or ‘Wales IP’ for example² – first contacts are often made with individual academics who may not have a broad awareness of university knowledge assets and so may not be able to refer companies to colleagues with appropriate or complementary interests. This can lead to loss of interest by the company and so loss of opportunity for engagement.

The McMillan review of good practice in technology transfer (2015) found that the UK operated at “world class standard in technology transfer practice” but also that there are no one-size fits all policies that work for every technology, or every university, or every place³. It is important, therefore, within the context of this review to stimulate KEC activity without over-prescribing how it should be done. This extends to how KEC activities and staff are funded. HEFCE has tracked the success of the Higher Education Innovation Fund (HEIF) over a long period of time and have seen a consistently high return on investment it provides to the public purse. PraxisUnico-AURIL members in England have consistently found that the resources HEIF provides are uniquely able to fund the people and resources required to fund KEC, in a way that other sources of funding are not well-designed to do.

HEIF does not only support the status quo. We have supported proposals for its expansion to enable universities to be aspirational and even more proactive and risk-taking in their KEC activities to support diverse partners and new engagement models. HEIF’s success is largely due to the fact that it is non-hypothecated and is flexible and familiar: it enables universities to plan and execute KEC activities according to their individual strategies and expansion of the fund will enable them to do more. This statement from PACEC’s 2012 review of HEIF strategies is still true today:

“There [is] a strong belief amongst HEIs that the formulaic HEIF funding is a very important and distinctive component of the funding landscape for KE...Central to the distinctiveness of the funding is its stability and predictability in an otherwise turbulent KE landscape. It allows HEIs to make the long-term investments in the capability and capacity to engage in KE that many other sources of funding could not achieve, with the latter typically used to develop specific areas of KE or specific initiatives.”⁴

What can be done by the Welsh Government, business and universities to increase research and innovation income in Wales in the light of the implications of BREXIT and the increased funding

² <https://businesswales.gov.wales/expertisewales/> and <http://www.walesip.org/index.htm>

³ ‘University Knowledge Exchange (KE) Framework: good practice in technology transfer’, HEFCE, Sept 2016

⁴ <http://www.hefce.ac.uk/media/HEFCE,2014/Content/Knowledge,exchange,subjects,and,skills/HEIF11-15-FullReport.pdf>

announced in the 2016 Autumn Statement and UK Government's 2017 Budget, the Global Challenge Fund and other, opportunistic Government funding opportunities?

Government investment in the KEC sector benefits the many through universities' deployment of funding through multiple routes to impact: Research collaboration, equipment sharing, consultancy, and skills (PhD sponsorship, KTPs, industry placements and graduate recruitment) are all highly valued by collaborative partners and have seen year-on-year growth in both numbers and revenue⁵. Universities in receipt of HEIF are often able to attract additional funding from industry by sharing costs on projects; for industry in particular this co-investment reduces risk and encourages new approaches. The breadth of approach to collaboration has been demonstrated in numerous case studies by, for example, the NCUB⁶ but also sector specialists such as the Royal Society of Chemistry whose 'Open for Business' report collected evidence on over 1,000 collaborations across the UK⁷. Enabling and supporting universities to diversify in knowledge exchange creates long-term and secure relationships with industry partners and, increasingly, with charities and not-for-profits.

Security of funding is vital in order to plan long-term for expansion of KEC activities. Many knowledge exchange activities have been funded through European initiatives – particularly in regions that suffer from lack of private investment. This potential loss of funding need to be taken into account as we enter Brexit negotiations and makes the case for increased levels of R&D spending by UK plc more compelling. We support the expansion of HEIF as a highly successful model for funding knowledge exchange and commercialisation and enabling universities to expand and deepen their KEC activities. In our response to the UK Industrial Strategy Green Paper, we said that the government should ensure that equivalent funding streams exist in the devolved regions in order to secure parity in UK-wide collaborations. In the most recent report in this area, the NCUB's Growing Value Wales Task Force stated that Welsh universities had been at a "competitive disadvantage to UK peers since the cancellation of innovation and engagement funding in 2014". It goes on to recommend that investment in university-business collaboration should be reinstated "to allow Welsh universities and businesses to operate on a par with other UK nations and regions."⁸

Dedicated public funds for commercialisation, innovation and societal engagement (such as HEIF) have played a critical role in assisting the change from IP exploitation to broader knowledge

⁵ Data for the academic year 2015-16 was released by [HESA](#) on 6 April 2017.

⁶ For example, see 'State of the Relationship 2016' NCUB

⁷ See <http://www.rsc.org/news-events/articles/2016/nov/open-for-business/>

⁸ <http://www.ncub.co.uk/what-we-do/growing-value-wales-task-force>

exchange, ensuring that income generation is not the main aim of university commercialisation offices. Public funding allows for continuity of staff employment – important for building relationships and deepening understanding of practice – and has meant that universities can expand their KEC activities without immediately trying to cover their costs and reducing the investment risk on new approaches to commercialisation.

In most cases KEC activity is a net cost to the university. Most offices have a stronger focus on commercial research collaboration with business than on IP exploitation: seeking opportunities for multi-faceted and long-term relationships rather than income from licensing, for example (although some offices are highly successful at the latter of course). In their 2012 review of HEIF strategies, PACEC noted that 46% of universities emphasised the need to develop longer-term relationships and strategic partnership rather than single-transactions because they recognised “*the mutual benefits of these types of relationships not least the synergies with research and teaching but also the potential for growing repeat, deeper interactions.*”⁹ The same report found that for every £1 of HEIF invested, it returned £6 in gross additional KE income and that this likely represented an underestimate of the total benefits to the economy and society with many impacts hard to capture and quantify. In 2015, new HEIF studies provided further evidence of the funding scheme’s impact on the scale and effectiveness of knowledge exchange activities for universities themselves (KE skills for administrative and academic staff) and external partners (business development, professional skills and recruitment). The studies presented new estimates of the return on investment of HEIF using income as a proxy for impact on the economy and society (£7.30 per £1 of HEIF), and a novel calculation of some additional non-monetised benefits (£2.40).¹⁰

What is the optimum balance between (a) geographically focused use of funding and (b) focus of funding on existing research and innovation excellence and capability, bearing in mind the Cabinet Secretary for Economy and Infrastructure’s new regional approach to economic development?

Recent UK Government industrial policy puts high expectations on the university sector to deliver innovations for growth as ‘anchor’ institutions in their regions as well as delivering economic benefits on a national level and acting as an attractor for international investment. Universities and PSREs are important ‘anchor’ institutions in the landscape of the UK with extensive networks among themselves (e.g. in regional groupings), with sector stakeholders, and with regional businesses and

⁹ Ibid

¹⁰ HEFCE, Evaluations of funding for Knowledge Exchange: the Higher Education and Innovation Fund, 2015 <http://www.hefce.ac.uk/pubs/rereports/year/2015/heifeval/>

employers. A university's mission is linked to the particular context of its place, and although more activity could be stimulated through funding, there are important considerations relating to an institute's research portfolio and appetite for focusing on this particular area of knowledge exchange and commercialisation. So, the role and focus of a modern university in a skills-deprived area may be focused on creating jobs, supporting skills, growing small businesses; a research-intensive university will have different priorities and these will inform negotiations and policy around the range of knowledge exchange and commercialisation activities. Studies by university mission groups University Alliance and the Russell Group illustrate these distinctions well. HEIF funding as operated by HEFCE is valuable because, rather than direct it centrally towards particular KE policy goals, such as technology transfer or the provision of facilities, it allows universities to develop a strategy and programme of activity that is most suitable for their own context. What is important is to have the right funding and policies in place for universities to develop appropriate activities and diversity into new areas if they see opportunity to. PraxisUnico/AURIL support this diversity through training programmes, practical guides, and knowledge exchange within a professional network.

Activity in this area is not confined to universities: Catapults, and their role in catalysing applications for research and growing new companies are gaining increasing importance for example. Private and public research labs are also part of the landscape and need to be included in discussions of innovation, commercialisation and enterprise. The role of UKSPA and its members – science parks, incubators and accelerators – is also important in terms of supporting and growing new businesses: PraxisUnico and AURIL are pleased to work in partnership with UKSPA as part of the commercialisation landscape and we advocate partnerships between universities, sector specialists, funding agencies and local government as the way to address support for innovation and growth across the UK. A report by NESTA for BEIS on the UK's incubators and accelerators provides valuable information about business incubation and acceleration provision to compliment similar maps of SME concentration and research intensity produced by Universities UK¹¹. The report notes that:

“Scotland, Wales and Northern Ireland have a greater concentration of both incubators and accelerators, relative to the number of new businesses, than most other regions of the UK.”

In order to maintain demand for incubation, universities and public research institutions need to stimulate and sustain a pipeline of research; managing and exploiting IP assets with the aim of creating new companies or attracting existing companies to facilities through licensing and

¹¹ NESTA 'Accelerators and Incubators in the UK' April 2017

collaboration opportunities. This is work that is largely carried out by KEC professionals working across academic / external boundaries and between institutional partners to maximise the benefits of investment for all concerned. The IP Collaboration Project in Wales is an example of this. At its launch, HEFCW recognised that:

“The expertise required to [explore new models for commercialising IP in Wales] is not inconsiderable. Creating a network of Technology Transfer Officers will not only benefit the universities involved and the companies or organisations they work with; it will also hit one of the key priorities set out in the Welsh Government’s Science For Wales strategy, and ensure that the wider economy derives maximum benefit from IP produced in Wales’s universities.”

The Welsh environment is distinctive and has much to offer in terms of novel approaches to enterprise and innovation, amply and recently demonstrated by the ‘Be the Spark’ initiative and the Wales Festival of Innovation. By supporting our Welsh members through this consultation response we are also supporting our national professional network as part of our ongoing work to develop and strengthen knowledge exchange and commercialisation across the UK.

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