Universities Scotland

Submission from Universities Scotland to the Department for Business, Innovation and Skills call for ideas for the National Innovation Plan

1. **How best can our regulators drive innovation and make the UK the regulatory test bed capital of Europe?**
2. **How can we deliver real culture change within public procurement?**
3. **How can we ensure that we put the UK at the forefront of open data opportunities?**

Universities are engaged with progress towards making research data openly available, with appropriate caveats, for example through the development of the Concordat on Open Research Data and with the work of the UK Open Data Forum on establishing a national infrastructure roadmap. Within this there are a number of issues to consider, not least making adjustments (e.g. delays) to allow exploitation of IP, curation of data, and the additional costs (both infrastructure, specialist roles and researcher time) associated with making research data open access. This group should be given time to develop an approach in a rapidly changing field. [1]

4. **Where can we maximise the opportunities for innovation, as we deliver high-quality infrastructure that unlocks broad economic opportunities?**

Investment in higher education infrastructure can maximise opportunities for innovation in a variety of ways, such as providing the best facilities for teaching to produce high quality graduates and supporting business to innovate. Research facilities in Scotland are often available for commercial use, for example, through Interface's Specialist Facilities platform.[2]

Investment in Scottish Higher Education infrastructure delivers a return of over £5.50 GVA (gross value added) for every £1 investment – the figure for science infrastructure is above this and the average return for general infrastructure investment in the economy is £4.[3] This demonstrates that investment in higher education infrastructure does maximise the use of resources.

It is therefore important to maintain and invest in higher education infrastructure in the broadest sense in order to provide innovation opportunities, as well as enable teaching to produce enterprising graduates.

5. **Where can the UK work alongside the private sector to create the deepest pool of innovation finance in Europe?**

[1] Independent advice from Professor Adam Tickell (Chair, Universities UK Open Access Coordination Group to the Minister for Universities and Science, Jo Johnson MP, 11 February 2016 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/499455/ind-16-3-open-access-report.pdf)

[2] http://www.interface-online.org.uk/how-we-can-help/specialist-facilities

[3] BiGGAR Economics, Contribution of Universities to the Scottish Economy, 2015

For every £1 of government spend on UK science and engineering research, private sector output rises by 20p per year in perpetuity. [4] Investment in research, including infrastructure, is an important means of signalling government commitment to the research base, facilitating further business investment.[5] This indicates that to grow private sector finance for innovation there is a need for public support for research to grow and to be a recognised as a long-term investment.

The uses of current public HEI innovation funding are demonstrably effective, providing a strong return on public-funding. Although a devolved matter for Scottish HEIs it is important to note that currently knowledge exchange public funding does not cover the entire cost of such activities and therefore public funding is a critical underpinning of the role of HEIs in innovation. HEIs should be enabled to continue to support innovation via the mechanisms best suited to their individual circumstances and strategies.

Scotland is the best region in the UK for spin outs[6] but there is scope for further development – a key issue is a shortage in early stage/proof of concept funding. Funding more, and more risky developments will accelerate commercialisation of university research. In the next year we will develop a common statement, across Scottish HEIs, of principles on formation of companies to explain how and why universities form such companies

6. **What do we need to do to get maximum benefit to the UK economy from challenger businesses?**
7. **How can we ensure that the UK's inventiveness and creativity capitalises on our strong intellectual property system to generate growth and further innovation?**

Research is critical to innovation, both in terms of applied research and the blue skies research that is driven by curiosity that can make unexpected breakthroughs. It is also important to appreciate that the relationship between research and innovation/economic impact is not linear[7] so capitalising on UK research excellence is dependent on investment in research, led by the Haldane Principle.

There is a persistent focus on IP issues in relation to universities, but a recent NCUB report via the Growing Value Scotland Taskforce (on the basis of research commissioned from BIGGAR Economics) showed that businesses engaging with universities found IP negotiations an 'inconvenience' rather than a fundamental barrier.[8] This indicates that a broader discussion around innovation and capitalising on excellent research would be beneficial – this may focus on building better mechanisms for transferring knowledge from universities to a specific sector and encouraging growth of strong personal relationships, rather than focussing on IP agreements.

This is not to say universities are not engaged with process improvement – through both the Universities Scotland 5-Point Plan for Innovation[9] and the Innovation Scotland Forum[10] action plan Scottish HEIs are working to deliver standard contracts for the majority of engagements with Scottish businesses, have delivered standard Innovation Voucher contracts through Interface and all make certain opportunities available via 'Easy Access IP'. Significant work is progressing in this area.

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[4] Campaign for Science and Engineering's 'The Economic Significance of the UK Science Base', 2014

[5] Department for Business, Innovation and Skills' 'Leverage from public funding of science and research', 2013

[6] Praxis Unico Annual Report 2013

[7] Universities Scotland's 'Research Impact in the Year of Innovation, Architecture and Design', 2016

[8] National Centre for Universities and Business 'The Innovation Edge: Business Innovation and University Collaboration in Scotland', 2016

[9] http://www.universities-scotland.ac.uk/campaigns/five-point-plan-for-innovation/

[10] http://www.sfc.ac.uk/innovationscotlandforum

University IP cannot be maximised from the supply side only - there is a need to encourage business demand to work with universities in order to generate growth.

8. **Is there anything else the UK could need to do to create the best possible framework for innovation?**

This consultation has taken a narrow view of the contribution of universities to innovation, which is disappointing. Universities have three key functions: research, education and knowledge exchange. All are interrelated in delivering societal benefit, including economic impact.[11] A key contribution that has not been captured is universities role in developing graduates with the enterprise and employability skills[12] to start businesses (including significant 'extra-curricular' support) or to making a valuable contribution to existing businesses, including increasing the absorptive capacity for small businesses to utilise knowledge. While BIS have estimated the number of students taking entrepreneurship related modules[13] this does not capture the full scale of activity in enterprise education.

Furthermore, in many cities universities have a unique ability to drive innovation and local economic growth because of their international scale and connectedness which attracts talent and investment to the area.[14] Universities can drive local innovation through, for example, supporting start-up businesses and offering technical advice. Scottish universities currently work with over 18 000 businesses per year through a range of activities including research, but also via CPD provision and consultancy which are important to drive growth and innovation, but would not be captured by a focus on IP. The Science and Innovation Audits may offer an insight to this broader role.

Universities UK have recently contacted BIS to recommend that a further discussion between university leaders and BIS to inform the development of this Plan to better reflect the role and potential of universities; we would strongly encourage this engagement.

[11] Universities Scotland's 'Research Impact in the Year of Innovation, Architecture and Design', 2016
[12] Universities Scotland's 'Making it Happen', 2015
[13] https://www.gov.uk/government/publications/entrepreneurship-modules-student-numbers-august-2014-to-july-2015-academic-year
[14] University Alliance's 'Growing the Future: universities leading, changing and creating the regional economy', 2011