The strengths and weaknesses of business-university collaboration in the UK and the UK’s performance against international comparators

This submission to the Business, Innovation and Skills select committee inquiry into Business-University Collaboration has been compiled by the Institution of Engineering and Technology (IET). The IET is a professional membership body, consisting of 153,000 members in 127 countries and draws upon the expertise of its members to respond to calls for evidence and consultations, in order to provide advice and share knowledge within its remit. The IET would be happy to assist the committee further or provide oral evidence if required.

Executive Summary

- Catapults are in early stages and cannot be directly compared to Fraunhofer institutes. The success of Fraunhofers indicates that success can be achieved however the Catapults would benefit from a higher level of funding.
- The UK has an excellent university research sector however many SMEs still have difficulties engaging with it.
- The Catapult has helped to provide the support needed from intermediary organisations, which are otherwise not particularly strong in the UK.
- Due to existing infrastructure and support from universities and the National Physical Laboratory, a potential area for research could include the field of sensors and measurement.
- Resources will most effectively be deployed where a clear local or regional innovation strategy exists

Key Message

The Catapults represent an important addition to the UK’s infrastructure for knowledge and technology transfer to businesses. Initial experience is very encouraging (particularly in manufacturing) but sufficient time needs be given to enable them to grow into their full role.

The resources currently provided for the network are not sufficient for a mature network covering a full range of technologies on the scale of the German Fraunhofer network. Government should plan for increased funding of the network over the next 5 years

The impact of Catapults will be increased where they can work with a well-developed local innovation strategy. The local LEPs and other local organisations should work to identify local innovation priorities and deliver effective means to help local innovative businesses, in particular SMEs to tap into the new infrastructure.
Response to questions:

1. What are the key strengths and weaknesses of the UK’s innovation system in relation to business-university collaboration?

1.1 Particular strengths of the UK’s innovation system include the excellent university research sector, good connectivity in the highest technology sectors (such as pharmaceuticals, aerospace and vehicles) and the good incentives that exist for universities to collaborate with business.

1.2 However, there are some weaknesses such as the lack of established intermediate technology transfer organisations and the difficulty that many SMEs encounter when engaging with universities. In addition, there is weak business demand for R&D outside of a few leading sectors.

2. How competitive is business-university collaboration in the UK against relevant international comparators?

2.1 For the UK, the volume of business collaboration with universities is high in comparison with many other countries. However, whilst the UK government’s investment in research has been maintained through the economic downturn, some competitor countries have opted to increase their investment significantly.

2.2 Intermediate organisations are not particularly strong in the UK; however the Catapult programme has helped to strengthening this. Furthermore, the closure of regional development agencies has weakened the local coordination for innovation activities. As a result, there are some Local Enterprise Partnerships trying to fill this void, yet do not have the full resources to do so.

Effectiveness of Government initiatives to support innovation through business-university collaboration

3. What are the strengths and weaknesses of the Catapult Centre model of business-university collaboration? What areas of research should future Catapult Centres focus on?

3.1 The UK Catapult Centre programme is a welcome start for business-university collaboration, however it is important to bear in mind that it is still in the early stages and is not directly comparable with for example the Fraunhofer Institutes which have existed for more than 60 years. However, there is a significant opportunity for the UK to extend the Catapult model, as Germany currently spends €1bn on the Fraunhofer programme. Due to the existence of university and National Physical Laboratory infrastructures, areas for the expansion of research could include the field of sensors and measurement, especially as the UK already has firm business capability in
measurement and control. One further example of a field which could be expanded is food manufacturing.

4. What steps can be taken to improve the uptake of Knowledge Transfer Partnerships (KTPs), particularly among SMEs?

4.1 The Challenge is to make the scheme attractive to new innovative SMEs, therefore there needs to be a supportive infrastructure in place and increased collaborative working with local partners, such as the Manufacturing Advisory Service.

Funding

5. Recent BIS analysis found that the UK exhibits “a sustained, long-term pattern of under-investment in public and private research and development and publicly funded innovation”. How does this affect business-university collaboration in the UK?

5.1 The UK suffers from a relative weakness in business demand for R&D which leads to reduced scale of collaboration outside most R&D intensive sectors. For example, lessons can be learned from the aerospace and automotive sectors, where the creation of long term road maps for R&D has helped drive coordinated R&D activities along the supply chain.

6. Will the changes to Higher Education Innovation Funding (HEIF), proposed in the Witty Review, be successful in increasing university engagement with innovative SMEs?

No response

7. What has been the effect of including commercial ‘impact’ criteria in REF assessments, and should the weighting increase to 25% as suggested in the Witty Review?

No response

8. Will the Government’s focus on the ‘eight great technologies’, as described in the industrial strategy, help to attract inward investment?

8.1 The eight great technologies are beneficial because they help to contextualise longer term investment in research; however, some areas are still far from the market. Inward investment will be attracted by sustained investment in UK research across a broad front.

[1] Department for Business, Innovation and Skills, Insights from international benchmarking of the UK science and innovation system, January 2014
9. To what extent is this focus compatible with and complementary to the European Strategy for Key Enabling Technologies?

No Response

Local Growth agenda

10. Are Local Enterprise Partnerships (LEPs) (and their counterparts in the rest of the UK)[2] investing as much as they could in innovation and R&D?

10.1 There is little evidence of widespread investment by Local Enterprise Partnerships in innovation, partly because they themselves have limited resources.

11. How can LEPs, universities and Government encourage greater regional R&D investment?

11.1 Local bodies can make use of a wide range of funding in order to promote regional R&D and innovation investments. These sources include funding from national bodies such as the Technology Strategy Board and research councils, in addition to regional investment industrial policy mechanisms. However, resources will most effectively be deployed where a clear local or regional innovation strategy exists, which identifies priorities. The local enterprise partnerships can play a major role in creating such strategies.

12. How should LEPs direct their allocation of European Structural and Investment Funds in order to maximise increases in R&D output?

No Response

13. To what extent will the new University Enterprise Zones encourage business university collaboration?

No Response