

**Development of a single
“knowledge exchange
office”**

**A response from the Institute of
Physics to a Scottish Funding Council
consultation.**

**A full list of the Institute’s submissions to
consultations and inquiries can be
viewed at www.iop.org**

24 October 2012

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Single KE Office Consultation
Scottish Funding Council
Donaldson House
97 Haymarket Terrace
Edinburgh
EH12 5HD

IOP | Institute of Physics In Scotland

Dear Dr Fancey,

The Institute of Physics in Scotland is a scientific membership organisation devoted to increasing the understanding and application of physics. It has nearly 3000 members and is part of the Institute of Physics.

The Institute of Physics (IOP) is a scientific charity devoted to increasing the practice, understanding and application of physics. It has a worldwide membership of around 45,000 and is a leading communicator of physics-related science to all audiences, from specialists through to government and the general public. Its publishing company, IOP Publishing, is a world leader in scientific publishing and the electronic dissemination of physics.

IOP welcomes the opportunity to respond to the Scottish Funding Council's consultation on the development of a single "knowledge exchange office". The attached annex details our response to the questions listed in the consultation.

If you need any further information on the points raised, please do not hesitate to contact us.

Yours sincerely,
Mr Stephen McGeoch
Chair IOP Scotland

Professor Peter Main
Director, Education and Science



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IOP Response to the development of a single “knowledge exchange office”

Summary

Knowledge exchange between universities and businesses can be a complex process; however, a strong research base, comprising both pure and more applied science is necessary to create the ecosystem which will result in knowledge being exchanged between academia and industry in a way that is beneficial to both players, and also to Scotland as a whole. This is essential for the Scottish economy; physics-based industries which depend on physics knowledge and expertise employ more than one hundred thousand people in Scotland and contribute £12.5 billion to the Scottish economy in gross value added¹.

A knowledge exchange office should set broad principles and seek to simplify and speed up the interactions between universities and industry. It should act as a single portal to coordinate the activities of the business development managers in the individual universities. A model where support was continued for Interface, commercialisation offices and knowledge transfer teams should continue to produce good results in this area.

Is the remit of the national policy forum correct?

Yes, we agree with the remit of the national policy forum to give a strategic overview and to provide a check on the effectiveness of knowledge exchange. The remit should also include an element of outward looking to coordinate activity in Scotland with the rest of the UK and the EU.

What membership should the forum have to deliver this remit?

The forum should consist of senior representation from universities and industry (including SMEs), particularly from those organisations which have a strong history of knowledge exchange, in order to provide practical experience of how knowledge exchange operates. There should be representation from government to ensure a fit with government policy.

What functions might usefully be included in a system of national support to be delivered by Interface?

Interface could act as a knowledgeable broker to enable Scottish universities and businesses to collaborate more effectively in bidding for European funding. The universities have an important role here too given their collective experience in applying for Framework programmes. An IOP report on “Supporting Physics in Business” found that knowledge of European programmes was low in innovative businesses². The report also recommended that carefully focused support for innovation would be vital for firms in the future. We should adopt a Team Scotland approach to ensure that the economic benefit of European funding flows to the Scottish economy. Too often the university research ends up being exploited by companies outside Scotland.

¹ Physics in the Scottish Economy 2012

² Supporting Physics in Business, Institute of Physics, March 2011
http://www.iop.org/publications/iop/2011/page_50369.html

An area which has been largely absent from the strategies that has an important role to play in promoting commercialisation, and which has perhaps the strongest need for cross-government, long-term support is public procurement. The government procurement budget is orders of magnitude greater than the direct and indirect support provided to research and science-based companies through other programmes. Innovative procurement has the potential to be a 'game-changer' in the support and growth of physics-based high-technology businesses, but it needs a strong and visible commitment from the government.

For which additional functions could the sector share expertise to enhance engagement with industry?

There has been a significant decline in the availability of investment funds for science-based companies in the Scotland over recent years, both in terms of early-stage venture capital and also later stage investment in companies aiming to undertake R&D³. Access to venture capital is a problem for science-based businesses engaged in the transfer of knowledge from academia to the marketplace, possibly due to problems in the advertising or with fair access to the limited funds available. Research by the Engineering and Technology Board⁴ has suggested that the problem is possibly due to them finding it hard to break into the close-knit network of venture capitalists and support providers. The Business Link programme could play a role in this process, providing a directory of venture capital funding and operating networking events to facilitate contact between companies and investors. It could also serve as an adviser to VC funds of the risks, rewards and timescales which are specific to science based start-ups.

Do ILGs provide sufficient coverage of the business base to meet the objectives for sector streams? If not, are there other collective industry bodies that the SFC should engage with to carry out this role?

We agree that the ILGs provide sufficient coverage of the business base.

Where there is existing knowledge exchange infrastructure focussed on an industry sector how might this be co-ordinated under a national sector strategy?

The photonics industry in Scotland has a particularly well organised structure to it already, with the Institute of Photonics and the proposed Fraunhofer Institute being major players in this sector. There would be value in some co-ordination if there is potential benefit from inter-sectoral collaboration. The Technology and Innovation Centre at Strathclyde is another, welcome aspect to the knowledge exchange infrastructure, which needs careful consideration as to what benefit there might be from co-ordination under a national sector strategy.

For industry sectors where there is currently an inadequate knowledge exchange infrastructure how might this be developed on a collaborative basis in the context of limited public funding?

In many industry sectors technology needs for Scottish companies are addressed through international supply chains. It is often difficult to establish a route to market connecting Scottish technology researchers and industrial users through intermediate international organisations. These opportunities require analysis of supply chains and knowledge exchange within international collaborative arrangements.

³ http://www.nesta.org.uk/library/documents/Venture_Capital.pdf

⁴ *SET and the City*, The ETB 2005

The Institute of Physics is a scientific charity devoted to increasing the practice, understanding and application of physics. It has a worldwide membership of over 45,000 (3,000 in Scotland) and is a leading communicator of physics-related science to all audiences, from specialists through to government and the general public. The Institute of Physics represents its members in Scotland through an active volunteer network and two members of staff based in Scotland.

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