

DINNER/DISCUSSION SUMMARY

BIS Innovation and Research Strategy for Growth

Held at The Royal Society on 1st February, 2012

The Foundation is grateful for the support for this meeting from
The Kohn Foundation, The Michael John Trust and the National Physical Laboratory.

Chair: **The Lord Broers FRS FREng**
Member of Council, The Foundation for Science and Technology

Speakers: **Sir Adrian Smith FRS**
Director General, Knowledge and Innovation, Department for Business, Innovation and Skills
Sir Tim Wilson
Chair, Wilson Inquiry into University-Business Collaboration and former Vice-Chancellor, University of Hertfordshire
Professor Andy Hopper CBE FREng FRS
Professor of Computer Technology and Head, Computer Laboratory, University of Cambridge

Panel Member: **Professor Ric Parker FREng**
Director of Research and Technology, Rolls-Royce Group

SIR ADRIAN SMITH reminded the meeting of the context in which the BIS strategy paper, published in December 2011, had been written. The UK was proving to be one of the slowest of the major economies to recover from the recession. Although the UK was a world leader in the quality and productivity of its research base, it risked being left behind by China and some other emerging economies (such as India and Brazil) which were devoting massive resources to building up their own research bases, recognising that innovation was an essential contributor to economic growth. The UK Government understood the importance of investment in and support for science and technology. Despite the imperative of reducing the burden of debt, it had committed half a billion pounds in recent months to a range of valuable investments in science and technology. It had launched the new Catapult Brand (replacing the former Technology Innovation Centres) - a new elite national network to act as a bridge between academia and business and to support the commercialisation of new technologies in sectors such as high-value manufacturing, cell therapy and offshore renewable energy which had been identified as areas of particular opportunity for the UK. It had removed a key VAT impediment to the development of "clusters" (geographical concentrations of interconnected businesses and institutions in related fields). It was seeking to strengthen international research collaboration not only within the EU but also with China. It was supporting a number of specific innovation projects at universities such as Manchester, Southampton, Strathclyde and Warwick. An important area further to be explored was the better use of public procurement to support innovation. The Government had major ambitions to foster science and technology in the UK and wanted to see even more UK universities among the top 100 such institutions in the world.

SIR TIM WILSON gave the meeting a preview of the content of the report (to be published soon) of his inquiry into University/Business collaboration. He believed that universities (widely defined) were key engines of growth for 21st Century knowledge-based economies. They represented a resource of major value and potential for the UK but the UK was failing to make the best use of that resource. He acknowledged that universities had changed beyond recognition over the past ten years and paid tribute to important reports by Lord Dearing and Sir Richard Lambert

which had helped to bring that about. Universities could and should play a major role in business supply chains, emphasising that the model for a successful supply chain was a partnership (with feedback) and not merely linear. Through even greater scope for placements and internships businesses could contribute to the universities' role in student development and education and universities could ensure that they were delivering learning relevant for the needs of businesses. And such placements and internships should not be confined to undergraduates; they should be extended to post-graduate and post-doctorate levels as well. He had noticed that a university culture in favour of such collaboration was more generally to be found in the former Colleges of Advanced Technology and Polytechnics. In his report he would be stressing the need for universities to look more to collaborative advantage and less to competitive advantage. Nevertheless he saw it as vital that there should be plenty of diversity among universities; they should seek excellence through concentrating on their strengths rather than by striving to compete in fields where they lacked strength.

PROFESSOR ANDY HOPPER concentrated on the issues from the point of view of SMEs (Small and Medium Enterprises). He believed that the trend for big corporations to dismantle their large research laboratories underlined the importance of identifying and removing the obstacles deterring SMEs from making as great a contribution as they could to innovation and from achieving greater collaboration with universities. He was particularly critical of policies and practices on intellectual property, favouring a "revolving door" approach to a "turnstile" approach. He feared that universities risked becoming too institutional and wanted to see greater diversity in the higher education sector so that there was more scope for fruitful collaboration with SMEs. He thought that league tables and the choice of metric for judging performance encouraged universities to give lower priority to activities which could be beneficial to SMEs. He suggested that more could be done by universities to open up to SMEs their infrastructure during "dead" hours. He did not think that venture capital support for SMEs had been successful in Europe and saw greater benefit in "Angel funds" which deserved further development.

Introducing the first discussion period PROFESSOR RIC PARKER commented that research excellence (such as the UK still had)

was a necessary but not a sufficient condition for innovation, that there was worryingly inadequate super-computing capacity in the UK, that the BIS strategy could usefully have given greater emphasis on the important role of universities in fostering innovation and that there needed to be better links between SMEs and large corporations. He did not share the criticisms voiced by other speakers about patents and intellectual property. Rolls-Royce succeeded in getting a beneficial balance between the desirability of deriving commercial benefit from new knowledge and the wider benefits of ensuring that such knowledge was disseminated to others. He said that less than 10 per cent of his company's valuable patent portfolio had originated in universities.

In the discussion periods general support was given to the BIS Strategy for Growth paper and to the emphasis given by the Panel speakers to the need for diversity among universities. There were some voices favouring a return to the structural differentiation which had existed in the days of Polytechnics and Colleges of Advanced Technology but changes of name were seen by others as less relevant than ensuring differentiation and concentration on individual strengths.

Some speakers felt that the presentations had given inadequate attention to the international dimension. This led to a large number of contributions pointing out that UK universities were very internationally minded, with large numbers of students and staff from overseas on UK campuses and some successful campus ventures in a number of overseas countries. It was however acknowledged that the Government's inward investment promotion initiatives might hitherto have underplayed the importance of the UK's knowledge and research base and the strengths of the UK university sector and that action was now in hand with UK Trade and Investment to put that right.

As in previous dinner discussions the apparently greater success of other countries, such as Germany and Japan, in translating innovation into commercial success featured in several contributions. But others speakers argued that it was unrealistic to think that systems and structures which reflected cultural characteristics specific to other countries could simply be imported and emulated in the UK. It was more sensible to ensure that the UK learned from other countries and used that knowledge to make the UK's system work even more effectively.

The remarks in the presentations about patents and intellectual property stimulated a large number of contributions. Speakers were worried that the emphasis on numbers of patents as a measure of successful innovation was unhelpful and acted as an obstacle to the spread and subsequent exploitation of new knowledge. But other speakers defended the filing of patents as producing great benefits both ethically and commercially.

Although there was general welcome for the Government's strategy for innovation there were concerns that the emphasis on science and technology would result in inadequate importance being given to innovation in the social sciences which could produce enormous benefits for society as a whole. It was pointed out that the BIS Strategy paper did define innovation as having relevance much more widely than just science and technology and many speakers spoke of the value and relevance of innovation stemming from social science research, not just for society as a whole but also for businesses, for example in the field of business ethics and governance.

The focus by Government on sectors of particular potential was broadly welcomed although there were concerns about the mechanisms whereby Government would be able effectively to back winners. And there were concerns that the Government might be failing to address the real problems facing the world, such as how to cope with disasters – an area where China was said to be setting up huge programmes. It was, however, pointed out that climate change was a major problem facing the world and was a key area in the Government's list of priorities.

One speaker questioned the continued emphasis on growth, wondering whether there was a case for seeking prosperity without the undesirable downside risks associated with the pursuit of growth. But the general reaction from both Panel and floor was that such an approach was unrealistic in a world where the UK faced ever greater competition from other countries and risked losing its increasingly mobile young talent.

Sir John Caines KCB

The BIS Innovation and Research Strategy for Growth document and the economic analysis supporting the strategy are at:
www.bis.gov.uk/innovatingforgrowth

Useful web links:

The British Academy
www.britac.ac.uk

The Computer Laboratory - University of Cambridge
www.cl.cam.ac.uk

Department for Business, Innovation and Skills
www.bis.gov.uk

The Foundation for Science and Technology
www.foundation.org.uk

Higher Education Funding Council for England
www.hefce.ac.uk

The Kohn Foundation
www.thekohnfoundation.org

The National Physical Laboratory
www.npl.co.uk

Research Councils UK
www.rcuk.ac.uk

Rolls-Royce Group
www.rolls-royce.com

The Royal Academy of Engineering
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