

LAMBERT REVIEW OF BUSINESS-UNIVERSITY COLLABORATION

The Royal Society of Edinburgh (RSE) is pleased to respond to the Lambert Review of Business-University Collaboration. This response has been compiled by Vice-Principle, Professor Andrew Walker with the assistance of Research Officer, Dr Marc Rands.

Role of the RSE in Business-University Collaboration

The Royal Society of Edinburgh, in its role as Scotland's National Academy has, for many years, had the academic-business interface as a high priority area within its portfolio. This reflects the unique nature of the Society in bringing together leading thinkers and practitioners across all the disciplines including not only science, engineering and medicine, but also business, finance and law. In September 1996, the RSE and Scottish Enterprise undertook a wide-ranging Commercialisation enquiry which, in the same year, resulted in the Technology Ventures Strategy. This aimed to encourage greater commercialisation of appropriate science base research by identifying the main barriers to commercialisation and proposed various measures to reduce them. Since then, the RSE has remained actively engaged in promoting the commercialisation of the Scottish science base, and the promotion of a better understanding of the issues involved in innovation and commercialisation. Thus we have provided a forum on many occasions for debate and discussion about how better to improve the Business-University interface. Relevant activities have included a series of Commercialisation Seminars and a series of Foresight Seminars, in partnership with Scottish Enterprise and the Scottish Higher Education Funding Council (SHEFC), a conference on Managing Intellectual Property in Scottish Higher Education in June 2002 and we will be holding a discussion meeting on the Business-Academic Interface in May 2003.

Over recent years we have seen numerous bodies operating within Scotland charged with furthering knowledge transfer and the commercialisation of university research and know-how. Recognising the need for co-ordination and sharing of good practice, the Society worked closely with Scottish Enterprise, Universities Scotland and the SHEFC to create, in the year 2000, Technology Ventures Scotland (TVS). At its Advisory Board (quarterly) meetings, senior representatives of the following organisations regularly come together to share information and to identify specific projects that need to be undertaken:

- Scottish Enterprise,
- Highlands & Islands Enterprise,
- SHEFC,
- Universities Scotland,
- Royal Society of Edinburgh,
- CBI-Scotland,
- Chambers of Commerce,

- Scottish Executive – Health, Environment, and Enterprise & Lifelong Learning Departments,
- Scottish Institute for Enterprise,
- University commercialisation offices,
- Electronics Scotland,
- International and local businesses, and
- Venture capital investors.

We believe that an independent umbrella organisation such as this, bringing together all the stakeholders in this area, is an essential ingredient in achieving a properly co-ordinated programme.

Convergent Thinking Between Key Stakeholders

Over the last ten year we have seen greatly improved convergence of thinking and strategies between university research-commercialisation offices, senior university management and the public funding bodies such as the Scottish Executive, Scottish Enterprise and SHEFC. This is now being extended to the business representative organisations, such as CBI and the Institute of Directors (IoD), and through them to private commerce. For example, a discussion meeting, being hosted at the RSE in May 2003, has been arranged specifically to discuss the Business-Academia interface, with 70% of places ear-marked for CBI and IoD members and 30% for academic participants.

We next turn to the specific questions referred to in the Review Consultation paper.

1. Business-University Collaboration

There exists a continuum of interactions between universities and industry/business, including the newly formed Scottish Intermediate Technology Institutes. We leave it to the universities and businesses themselves to summarise the many different approaches. However we note that the broad range that currently exists in Scotland, varying in scale, intensity and duration, represents an essential aspect of ensuring the necessary flexibility to respond to opportunities of all types.

The RSE in partnership with Scottish Enterprise has, however, run a successful series of Enterprise Fellowships since 1997. These one-year Enterprise Fellowships have equipped post-doctoral researchers, or younger lecturers, with the hands-on business knowledge to enhance the commercialisation potential of their own research. They encourage the establishment of new start-up companies and allow young researchers to devote time to develop their research from a commercial perspective. In Spring 2001, Scottish Enterprise commissioned SQW Ltd to carry out an independent review and evaluation of the 13 Enterprise Fellowships that had been completed at that point. Its report concluded that: “*The Enterprise Fellowship programme is shaping up to be an excellent contributor to economic development in Scotland. It is enabling progress to be made in the commercialisation of university research and the establishment of technology-oriented new businesses.*” The companies which these Enterprise Fellows have created to date include: Intense Photonics, Microemissive Displays, Surfactant Solutions, Edinburgh Biocomputing Solutions, Photonic Materials, Kymata and Intrallect. In recognition of this, Scottish Enterprise announced a major expansion

in the number of Enterprise Fellowships to be run by the RSE, with funding of £5.5 million for a further 80 new Enterprise Fellowships in Scotland.

2. Main Barriers

Scotland's economy is dominated by small to medium sized enterprises (SMEs) and it is widely recognised that it is extremely difficult to achieve effective interactions between our universities and this highly diverse business sector. The importance of this issue was recognised by Technology Ventures Scotland, which set up a Task Group specifically to consider the barriers between SMEs and the intellectual capital residing in our universities and to put forward recommended actions to overcome these barriers. A copy of the recently completed TVS report – “Bridging the Gap” – is enclosed with this response.

One of the hazards with the creation of the entrepreneurial university model (including spinouts and consultancy) is the increased profile given to the value of intellectual property. As a consequence, universities and individual academics have begun to seek early financial reward for the intellectual property they acquire. This can create a barrier to engagement with the SME sector, since many small companies become concerned that they may face significant costs in gaining technology access without any guarantee of gaining business benefits.

3. Attracting the best graduates

We are particularly conscious of the decline in popularity of university degree programmes in the physical sciences, engineering and technology. We believe this reflects the negative perception the general population has both of scientists/engineers and of the careers they pursue. This is a societal problem which has developed progressively over the last thirty or forty years and will require a comparable period of concerted action to reverse. The challenge is not only to develop “more attractive career paths for science and technology graduates” but to demonstrate the attractiveness of those that already exist. The importance cannot be over-emphasised of:

- (i) role models from industry, demonstrating a quality of life to which young people aspire as a result of successful exploitation of a science or technology education, and
- (ii) the media, in the way they portray such individuals, both in the context of documentary reporting and fictional drama.

4. Financial Considerations

There is no doubt that modern Universities exist in a much more commercially orientated world than previously. As a result it is usually the financial consequences of any possible investment of resources that is uppermost in the minds of senior management when making decisions. This factor is alluded to in the “Bridging the Gap” report, for example, in the context of how to provide assistance to SME's when they neither have the funds to buy direct consultancy expertise nor have the resources to participate in cutting-edge collaborative research. Other than personal satisfaction, there is little to motivate an academic to spend time, free of charge, updating a small company on the advantages to them of some technology recently developed elsewhere. This is where financial

incentives, probably funded by local development agencies, are likely to be highly effective.

Additional Information

In responding to this consultation the Society would like to draw attention to the following Royal Society of Edinburgh responses which are of relevance to this subject: *Commercialisation Enquiry: Final Report* (1996); *A Framework for Economic Development* (March 2000); *Research and the Knowledge Age* (April 2000); *A Science Strategy for Scotland* (July 2000); *The "Are We Realising Our Potential" Inquiry* (July 2000; January 2001); *Review of Research Policy and Funding* (April 2001); *Review of the supply of scientists and engineers* (August 2001), *Research and Knowledge Transfer in Scotland* (September 2002) and *Science and the Regional Development Agencies: The Scottish experience* (March 2003). Copies of this response and of the above publications are available from the Research Officer, Dr Marc Rands (email: mrands@royalsoced.org.uk) and from the RSE web site at www.royalsoced.org.uk.

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