

Higher Education - Industry Co-operation

A Discussion Paper on the North-South Dimension



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InterTradelreland Trade and Business Development Body

InterTradelreland Trade and Business Development Body is one of the six Implementation Bodies established under the British-Irish Agreement Act 1999. The focus of the Body is on promoting business development opportunities, North and South. As part of its functions the Body will review the scope, extent and effectiveness of existing activities undertaken by Agencies and Departments North and South and make recommendations on areas where cross border co-operation can add value to industrial competitiveness.

The legislation identifies a number of specific activities for consideration by the Body including:

- A programme to enable companies to undertake joint product and process development projects of commercial benefit, with assistance of institutions where appropriate;
- A pre-competitive research programme aimed at supporting commercially focused research within the third level sector, encouraging, in particular, projects which bring together researchers, companies and institutions, North and South.

InterTradelreland intends to come forward with a number of specific proposals regarding good practice and recommendations for pilot actions in higher education - industry collaboration arising from this consultation process, including initiatives in the areas of further education and life long learning.

Scope and Purpose

This Discussion Paper is based on a scoping report prepared jointly by DTZ Pidea Consulting and the Circa Group on behalf of InterTradelreland. This undertook a strategic review of existing North-South (N-S) activities in Higher Education-Industry Co-operation (HEIC)¹ and identified gaps and opportunities as well as themes of action for InterTradelreland to consider. This Discussion Paper outlines a number of these broad proposals and now aims to encourage discussion among government bodies, higher and further education institutions, businesses and research organisations in order to assist in the identification of specific areas of action which might add value and improve mutual competitiveness through improved HEIC collaboration.

Why are HE-Industry Links Important ?

It is widely accepted by government, business, universities and colleges that the knowledge economy is critical to regional and international competitiveness. This view is reflected in both jurisdictions in government policies and in broad funding arrangements.

Creating the conditions for the growth of the knowledge economy and fostering better HEIC are major areas of common strategic interest. Some of the key benefits of, and the success conditions for the knowledge economy are summarised in the diagram.

The Benefits of the Knowledge Economy

- Enhancing Competitiveness
- Growth in employment
- More sustainable jobs and higher wages
- Attracting high quality inward investment
- Success tends to breed success

Success Conditions for the Knowledge Economy

- A substantial science and public and private R&D capacity
- Ability (by industry and the universities) to create new knowledge - individually and collectively and sustained by a high level skills base; and
- An ability to transform this knowledge, from a science or technology base, into innovative products, services and processes
- Strong HEIC

Note 1 : Definitions 'Higher Education' in this Paper means tertiary or third level education, including universities, Institutes of Technology (ITs) and the Further and Higher Education (FE&HE) colleges. We have also used the term 'higher education' to include research institutes. 'Industry' includes not only private businesses, but public bodies such as those in health, environment and education.

Expenditure on R & D

In the North, the Northern Ireland Economic Council estimates that for 1996 total civil R&D expenditure was around £152m or 1% of GDP. Over half (£80m) of this expenditure took place in the private sector. Within the public sector the majority is undertaken by the two NI universities (£52m) and the remainder (£20m) by government departments and NDPBs such as hospitals.

In the South, business expenditure on R&D stood at £679 million or 1.1% of GDP, close to the EU average of 1.15%. State spending on Science & Technology activities amounted to £1,183 million, with Higher Education R&D spending amounted to 0.29% of GDP (EU average 0.38%) in 1996 (the latest survey figures available).

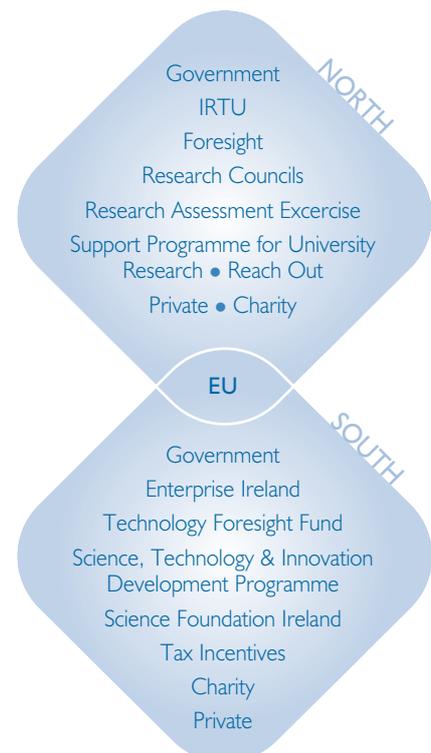
In the university sector in the North funding is driven by the Research Assessment Exercise (RAE), research council private and charitable funding, the Foresight Programme, IRTU funding, Reach Out funding programme and, more recently, the Support Programme for Universities Research (SPUR). In the South, the driving forces are a range of government funded programmes, including the Technology Foresight Fund and the wider Science and Technology Innovation Development Programme under the National Development Plan 2000-2006. Both jurisdictions have also benefited from a range of EU programmes supporting higher education - industry collaboration.

On a North-South basis, the International Fund for Ireland (IFI) ceased committing new funds for HEIC projects in 1996.

North-South Activity

Although there are substantial levels of expenditure associated with research and development and innovation in both jurisdictions, there is a modest amount of North-South HE-I activity. Universities are the most active players - both on an independent basis and through the Conference of University Rectors in Ireland (CRI). Business involvement in North-South HEIC appears relatively weak. Our overall impression is that activity is fairly 'ad hoc', largely unfocussed and that it has developed slowly over the last 10 years. The recently updated CRI register of university-industry collaboration does not show any significant rise in the number of research projects compared to 1997. According to Professor Osborne, commenting in the mid nineties (*Higher Education in the North and South, 1996*), the level of research collaboration at that time, was not much greater than a decade earlier.

Main Funding Sources



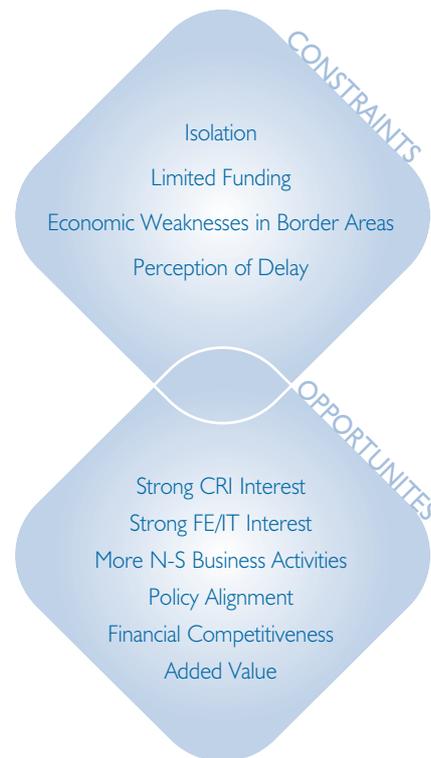
Constraints and Opportunities

With the exception of EU programmes, current funding and organisational structures do not directly stimulate much North-South HE-IC activity. Apart from funding and jurisdictional issues, initial interviews also pointed to a certain cultural isolation between Northern and Southern higher education, which needs to be overcome. For industry, there was also a perception that formally supported HE-I co-operation might run into excessive time delays and bureaucratic problems generated by the prospect of co-ordinating two sets of civil service and state agencies. There were also particular concerns about the border areas associated with the low level of business activity and research - industry infrastructure.

Significant work may need to be undertaken to persuade some HE partners and perhaps many businesses, North and South, to seriously consider cross-border HE-I co-operation. Among some businesses, however, there is evidence that they are increasingly operating on an integrated north-south basis and this strengthens the need for a similar approach to HEI co-operation.

Within the CRI and the Irish Business Employers Confederation/ Confederation of Business Industry (IBEC/CBI) Joint Council there is a strong interest in exploiting the benefits of North-South approaches to improved HE-I co-operation, including the development of centres of research/innovation excellence. In the Further & Higher Education and Institute of Technology sectors there is increasingly strong interest in comparative studies and integrated projects on a North-South basis. These findings, together with the current policy interest in developing the conditions for the Knowledge Economy, and the changes in the structure and operation of businesses - suggest considerable scope for enhanced North-South HE-I collaboration.

Constraints & Opportunities



Strategic Approaches

In addressing the prospects for enhanced HE-I co-operation, three strategic approaches suggest themselves. These are:

- Expand existing programmes onto a North-South basis. This could be a slow process. It will need the co-operation of a range of government departments North & South including both departments of finance
- Expand existing cross border EU programmes to incorporate a much higher HE-I co-operation element. This again may take time, as such programmes will need extensive consultation and the drawing up of appropriate guidelines
- Establish a specific fund for the development of North-South HE-I co-operation.

All three approaches could be pursued, but particular priority might be given to the third approach. Each approach has very different implications for flexibility, targeting, administration, accountability, etc. and it would be essential that they all be fully explored as a part of developing enhanced programme initiatives.

Programme Recommendations

At this early stage, there are three broad areas where gaps or opportunities exist for increased North-South HE-I co-operation. These are:

- Cross Border Joint Research
- Research Commercialisation
- Skills Development.

Cross-Border Joint Research Fund

With the exception of EU programmes, HE-I co-collaborative research funding support is available only on a separate basis on both sides of the Border. It is recommended that Enterprise Ireland and Industrial Research & Technology Unit (IRTU) funding is supplemented by dedicated North-South research funding. The size of the fund will need detailed consideration.

The funding would enable an IRTU or Enterprise Ireland applicant to seek additional HE and/or industry partners to be included from the other jurisdiction. This additional partner would have to improve/add value to the research, innovation and technology transfer process. Eligible activities might also include training and consultancy linked to research.

North-South Commercialisation Programme

Universities institutes and colleges are increasingly commercialising research and initiating a range of practical actions to achieve this objective. Examples include:

- the creation of campus companies
- the management of Intellectual Property Rights (IPR)
- science parks and innovation centres
- university capacity building through new business structures, training and systems.

Whilst each of these may involve individual government funded programmes, some activities could be undertaken more effectively on an all island basis given their importance to the development of a knowledge based economy and the high financial resources involved. The components of such a programme might be:

- An all island Technology Development Programme aimed at supporting the commercialisation processes, skills development and knowledge transfer involved in the start-up of campus companies. InterTradelreland could invite proposals for such a Programme and this would need to be highly practical and aimed at supporting start-ups. The need for this kind of initiative has also emerged from a parallel study by InterTradelreland of equity capital needs on the island.
- A North-South IPR specialist service could include the registration, valuation, licencing and sale of IPR. Currently, most HE institutions 'get-by' with non-dedicated IPR services. Few can afford the expense of dedicated individuals. InterTradelreland, could invite proposals for a North-South IPR service operated on a collaborative basis.
- Developing an integrated North-South Science Parks and Innovation Centre Network. This might include benchmarking data, publishing information on good practice, enabling networking and collaborative initiatives and facilitating conferences. A support initiative could help identify and diffuse best practice and develop a web site.
- Developing and deepening universities', institutes' and colleges' understanding and capacity to better co-operate with industry is critical. The reverse process is also critical. In the North, initial funding of around £2m has been made to the university's sector through Reach-Out funding and developing this experience could be widened and also pursued on a North-South basis.

There is a substantial level of interest in a North-South Teaching Company Scheme (TCS) - perhaps by expanding the current system operating in NI. This is already the subject of a separate InterTradelreland study and set of recommendations. Nonetheless, this Discussion Paper suggests that the current limitations and constraints of the TCS system are fully recognised and that any new TCS considers a parallel, less demanding, technology programme suitable for lower level research/innovation programmes for the tertiary sector and businesses.

Skills Development

The IT/FE sectors in particular have a key role in further developing the skill base within both jurisdictions and on a North-South basis. The sectors have a wide geographic spread and a particularly important role in addressing LifeLong Learning and Continuing Professional Development (CPD), especially among adult learners and with SMEs. These sectors also have a special role in the cross-border areas and considerable potential in developing Information & Communication Technologies (ICT) for on-line supported Distance Learning.

Research conducted elsewhere (for example, by both DTZ Pidea and CIRCA) suggests that there is likely to be substantial unmet and latent HE and Continuing Professional Development (CPD) demand and that this could, in part, be satisfied through ICT supported on-line Learning. Learning networks need to involve a collaborative group of providers, appropriate learning programmes and products, an ICT infrastructure, a business vehicle and agreed quality assurance systems. The promotion of such a business also requires sound market research and business development support.

These challenges could be approached on an integrated North and South basis developing regional learning networks. On a regional basis there is some interest in pursuing a Learning network on a North-South basis in the North West and the InterTradelreland would consider undertaking background demand research and feasibility work on the business implications of this, or other regional and/or sector initiatives. There is also scope to address issues of qualification and accreditation equivalence.

Responses to this Discussion Paper

Overall, there appears to be strong interest in developing comparative assessments, reviewing best practice and initiating North-South collaborative projects. The Committee of Rectors, the Association of Northern Ireland Colleges / Council of Directors of Institutes of Technology as well as IBEC/CBI and other educational and business interests are invited to set out their views on areas of research and action. InterTradelreland intends to set up a consultative group to help provide advice on developing such initiatives.



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