

Border, Midland & Western Regional Assembly Submission to the Innovation Taskforce



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Border, Midland & Western
Regional Assembly
Investing in Your Future

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Key Message

The current pursuit of excellence in research must be complemented by excellence in:

1. The relevance and strength of regional research capacities;
2. The sector-specific innovation/technology dissemination and diffusion mechanisms accessible to all firms in the selected sectors; and
3. The rates of incremental innovation and the adoption/absorption of transferable knowledge by all firms.

Funding Point of Note

The Regional Operational Programmes (OPs) 2007-2013 provides a mechanism through which 50% of the cost of pilot initiatives in both NUTS II Regions (BMW & Southern and Eastern Region) may be recouped from the European Union through the experimental actions strands of the OPs. This presents an opportunity to pilot intermediary actions to link enterprises with third level institutions.

Supporting Reports

1. Audit of Innovation in the BMW Region
2. Collaborative Research and Innovation Strategy for the BMW Region
3. Evaluation Report of the BMW Regional Programme of Innovative Actions

Why Regions Matter for Research and Innovation

1. **The Foundations of National Competitiveness are at Regional Level** therefore effective regional policy is constitutive of national economic wellbeing. Research and innovation capacity are key factors of national and regional competitiveness.
2. **Regions and Cities are the Arenas where Most Interactions Take Place** (on which innovation and technology transfer rely) and where ‘untraded interdependencies’ and collaborative advantages (social capital) arise. Congregations and clusters of sector-specific firms tend to occupy distinct geographic areas.
3. **Spill-over benefits from Research Activity are largely Spatially Concentrated** – all regions therefore need (1) relevant research capacities; (2) mechanisms to ensure effective dissemination/diffusion of knowledge; and (3) enhanced absorption capacity within individual firms, in order to ensure knowledge valorisation takes place on a widespread basis.
4. **Incremental Innovation Impacts may be far Greater than Radical Innovation** – the economic and spatial impacts of incremental innovation by all firms in a sector (adoption of industry best practice) may be far greater and predictable than the potential commercialisation of a radical innovation by a single firm.
5. **Higher Education Research Institutions are One Element of a Broader Innovation System** limiting our definition of technology transfer to the linear transfer of knowledge from institutions to firms is a very restrictive and supply-side dominant view of the innovation process. This linear definition is more suited to one-off radical application than to the widespread adoption of incremental innovation by all firms in a sector, across a region.
6. **Regional Strengths and Capacities Differ – A Differentiated Policy Approach is Needed to Optimise the Economic Dividend from Research and Innovation Activities in each Region/City**
The current pursuit of excellence in research must be complemented by:
 - i. excellence in the relevance and strength of regional research capacities;
 - ii. excellence in the sector-specific dissemination and diffusion mechanisms accessible to all firms in the selected sector; and
 - iii. excellence in the rates of incremental innovation and the adoption/absorption of transferable knowledge by all firms.
7. **Innovation Should not be Treated as an End in Itself**
It is one of many significant factors required for continued commercial success and for sustaining productivity and employment growth and better meeting market needs. The understandings of innovation and technology transfer applied by the Innovation Taskforce must therefore extend beyond the linear transfer and commercialisation of IP held by higher education research institutions, to the widespread dissemination and adoption of industry best practise by all firms in relevant sectors, mediated by selected specialised knowledge intermediaries, availing of all sources of transferable knowledge. Along with the promotion and facilitation of knowledge it is also important that there is support in the post-adoption period.

The twelve proposals set out in this submission seek to address these key issues and propose practical arrangements to meet these challenges.

A. Overview

The Border, Midland and Western (BMW) Regional Assembly welcomes this opportunity to make a submission to the Government's Innovation Taskforce. This paper will focus on a number of priority areas which the Assembly considers to be the key challenges and will outline a range of effective policy proposals to develop Ireland's innovation levels.

B. Innovation Policy in Ireland

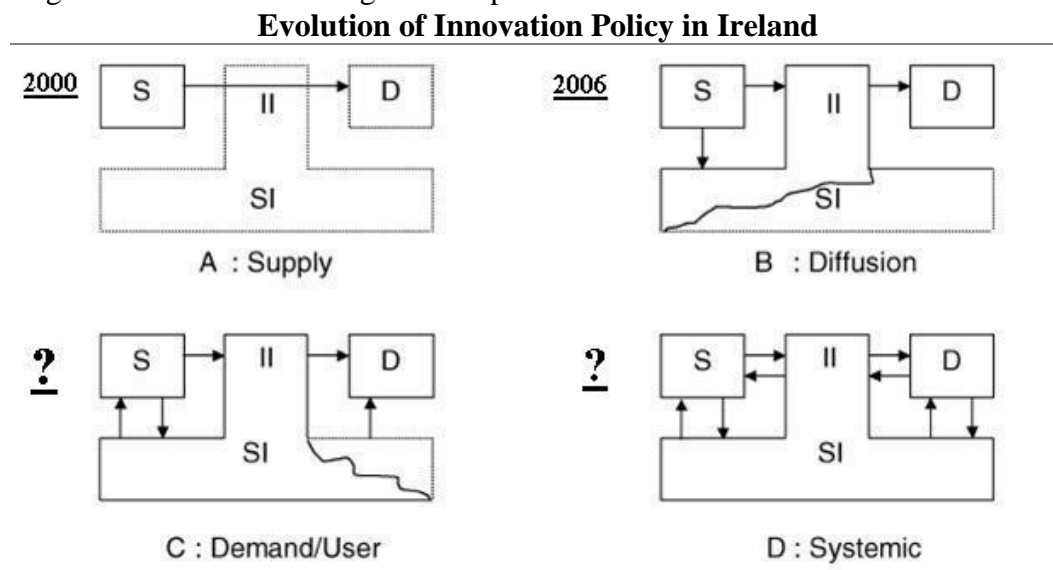
In providing a brief overview of the current status of innovation policy in Ireland, we have referred in particular to the four stage schema developed by Smits et al (2004) which depicts innovation policy progressively evolving from a supply-side focus through to diffusion and demand-side focuses and ultimately to a comprehensive systemic innovation policy.

Supply Side (S) Production of Knowledge i.e., third level institutions and public research organisations (Research System);

Demand side (D) Consumers and users of knowledge based products and services i.e., firms, government departments;

Intermediary Infrastructure (II) Structures created to improve the interface between Supply & Demand Side i.e., technology transfer policy/infrastructure, incubation and innovation centres and researcher mobility schemes; and

Supportive infrastructure (SI) The 'Soft' Intermediary Infrastructures i.e., strategic intelligence, the availability of risk capital, the match between supply and demand of knowledge and the level of management capacities of firms.



Source: Adapted from Smits et al¹

It is our view that research and innovation policy in Ireland has begun to progress from a supply-side focus e.g., emphasis of resources on building research capacity since 2000 (PRTL/SFI/TSRI/ARE/IRSCET/IRCHSS), to an emerging concern with transferring knowledge from these research centres (e.g., Technology Transfer Strengthening Initiative). We now need to move to the next stages, namely promotion of broader diffusion/dissemination, generation of wider user demand and absorption capacity and finally to a more systemic innovation policy. Our proposals are framed around these four pillars.

¹ Smits, Rudd and Kuhlmann, Stefan (2004). The Rise of Systemic Instruments in Innovation Policy, in International Journal Foresight and Innovation Policy, Vol. 1, No. 1/2, 2004.

1. Supply Side

Key Point 1.1

Innovation at Regional Level Needs to be Addressed by STI Policy

The tension between regional/spatial policy and the pursuit of excellence in research as enunciated in science/innovation policy must be reconciled. Research excellence has been set in a false dichotomy with regional impact. The spatial dimension of current RTDI policy is barely evident and there is an apparent concern about the dilution of research excellence and loss of international standing (paralleled by a concern for international urban competitiveness at the expense of territorial cohesion). Evidence from the Audit of Innovation in the BMW Region² illustrates the current innovation challenges in the Region. It concluded that the Region had an innovation deficit, was also less entrepreneurial than the S&E Region and found the linkages between industry and third level institutions to be very weak.

Recognition of the need to drive the innovation agenda and interactions at sub-national level is required. This can be achieved through a dynamic regional innovation system with accessible knowledge partners and effective technology transfer and dissemination systems which ‘is best done through the development of specific regional strategies’³. Effective regional innovation system can facilitate interaction between all relevant actors and unlock access to sources of knowledge, while also delivering relevant excellence at a regional level.

Policy Proposal 1.1

Develop & Implement of Regional Innovation Strategies (RISs)

RISs are required to co-ordinate the many actors involved, to gain consensus on priorities, to find solutions to overcome constraints, and to aggregate resources in order to maximise the development, dissemination and commercialisation of regionally-relevant knowledge capital. These are the ‘missing link’ in the governance of national STI policy. The meaningful monitoring of regional innovation indicators would have to complement the evaluation of the roll-out of these strategies.

The national agencies responsible for science and innovation policy, led by Forfás should collaborate with regional level bodies, third level institutions and private sector bodies to develop multi-annual comprehensive regional innovation strategies. These complementary strategies could be developed on a pilot basis initially, drawing on the extensive experience of regional development agencies in several EU countries⁴.

² BMW Regional Assembly (2004). Audit of Innovation in the BMW Region.

³ European Research Advisory Board (2005). Stimulating the Regional Potential for Research and Innovation. November 2005.

⁴ The European Commission Regional Technology Plans, see Henderson, D. (2000). “EU Regional Innovation Strategies”, in European Urban and Regional Studies, Vol. 7, No. 4, p. 347-358.

Key Point 1.2

Consistent Under-Investment in the R&D in the BMW Region

R&D investment has been overwhelmingly directed towards existing centres of excellence which are invariably found in more prosperous regions and this reproduces the gap between underperforming and prosperous regions i.e., between the BMW Region and the S&E Region. The Strategy for Science Technology and Innovation (SSTI) 2006-2013 acknowledges that companies in regional locations are at a disadvantage when it comes to accessing support for innovation⁵ due to the large concentrations of scientific and technological resources in the major cities.

ESPON⁶ has found that R&D policy in the EU was adversely impacting on spatial balance by reinforcing existing concentrations of activity, while economic geography literature suggests spill-overs from research are quite limited in distance. In the Irish context, this implies that most of the benefits of the increased public investment in HERD will accrue to the university cities, and particularly Dublin with four universities in its vicinity.

Policy Proposal 1.2.1

Incentivise Collaboration with Less Established Research Institutions

The almost exclusive emphasis on research 'excellence' has consistently delivered sub-optimal outcomes from a BMW Region perspective. A solution would be the awarding of higher points to competitive research funding proposals which engage the less established research institutions as partners in collaboration proposals. The present regimes favours collaboration of stronger partners thus widening the research capacity gap further.

Policy Proposal 1.3

Collaborative Research in the BMW Region should be Fully Supported at National Level

The Collaborative Research and Innovation Strategy for the BMW Region which was developed under the auspices of Lónra, the BMW Region's higher-education network, combines the individual strengths of NUI Galway, the Institutes of Technology in Athlone, Dundalk, Galway-Mayo, Letterkenny and Sligo, and St. Angela's College, Sligo. It identifies a number of research areas where collaboration will take place, including; biomedical science and engineering; environmental science, health services research, marine and energy; food and agriculture; socio-economic sciences and humanities; social entrepreneurship; and software development and applications.

The development of the research and innovative capacity of the Region will facilitate the necessary shift towards a regional economic base which creates more sustainable and diversified sectors of employment, is more innovative, more knowledge-based and ultimately can compete on an internationally basis - a necessary transition for the future prosperity of the Region and vital especially in the current economic climate.

⁵ SSTI. p.35.

⁶ European Spatial Planning Observation Network (2005). The Territorial Impact of EU Research and Development Policies. December 2005.

2. Demand Side

Key Point 2.1

RTDI Policy is Too Heavily Focussed and Driven by Supply-Side Considerations

RTDI policy is heavily supply-side driven in Ireland and this is evident in the budgets of higher education institutions where funding for business interaction is dwarfed by primary research funding. The pursuit of prestige ‘emblematic’ projects, global aspirations and international rankings leave little room for regional business impact considerations. This supply bias is incongruent with national policy goals.

Policy Proposal 2.1

RTDI Policy of HES should be Re-focussed on Diffusion of Knowledge

The role of higher education institutions in RTDI policy should be re-focussed on “knowledge valorisation”, i.e. the transfer of knowledge from one party to another for economic benefit. The role of HEIs should be to optimise their contribution to economic development by generating useful knowledge alongside their education and research missions. Dissemination and business engagement are core to this role, not an optional add-on, but clear pathways to engagement and active intermediation must be facilitated.

Key Point 2.2

Challenges Exist for 4th Level Linkages between Industry and Academia

Based on a census of post-doctoral Researchers who were funded under Science Foundation Ireland programmes in 2007, UCC economist Dr. Declan Jordan⁷ found that only 9% found employment in science and engineering businesses, while 38% found another post-doctoral position. A challenge exists to develop the linkages with industry that can facilitate the development of career paths for our PhD researchers.

In our view the focus should shift from an almost exclusive focus on high value R&D activities to more broadly based industry relevant innovation and enterprise supports and encompass a much wider range of sectors, including previously untapped industries.

Policy Proposal 2.2

Develop Collaborative Postgraduate Scholarships⁸

The proposal would provide opportunities for PhD candidate researchers to undertake their primary research work in a company setting under the supervision of an academic supervisor on an agreed project scope/subject. It provides benefits to both the researcher and to the company and provides researchers with experience of developing projects with the support of the academic institutions. Postgraduate researchers and their supervisory institutions can bring specialist knowledge and analytical skills to the business, while at the same time increasing their commercial awareness and inter-disciplinary project management skills.

Policy Proposal 2.3

Focus on Untapped Industries e.g., Creative Industries/Wood Energy

Opportunities and arenas for innovation exist in sectors that are generally not considered when the discussion on innovation takes place. It is important that all aspects and areas for innovation are explored and any untapped potential is fully exploited.

The Western Development Commission (WDC) has recently produced reports on both the creative industries⁹ and wood energy¹⁰ in the West of Ireland. These reports succinctly highlight the opportunities that exist in two relatively unexplored area for innovation. Government policy should seek to facilitate the recommendations and work done by the WDC, while also investigating further areas for potential innovative activity.

⁷ Declan Jordan (2009). 'Beware the Unintended Consequences of Innovation Policies', Irish Times, July 6th 2009. <http://www.irishtimes.com/newspaper/finance/2009/0706/1224250103510.html>

⁸ The BMW Regional Assembly has led an application for EU Interreg funding to pilot a number of new initiatives that have been successful in other partner regions. Among these is the Knowledge Economy Skills Scholarship (KESS) Scheme administered by the Welsh University network through their ILO offices, with the support of ESF funding. This involves a partnership between higher education networks, enterprises and postgraduate researchers. It is based on the rationale that a higher skilled and more commercially aware postgraduate-qualified workforce (brain force) is more capable of generating and adapting new ideas and bringing them to commercial fruition.

⁹ WDC (2009). Creative West: The Creative Sector in the Western Region.

¹⁰ WDC (2008). Wood Energy Strategy for the Western Region.

3. Intermediary Infrastructure

Key Point 3

Deficit in Industry – Academia Engagement: Catalyst is Required

Serious deficiencies exist in the roll-out of Ireland's STI Strategy and in particular research performance is not adequately paired with the economic utilisation of results. One of the core objectives of STI policy is to facilitate strong industry-academia collaboration in order to maximise the economic benefits of basic research. This newly evolving 'third role' for TLIs requires greater consideration by Government. The third-level sector cannot be expected to deliver seamlessly or painlessly on a broader mandate in a short timeframe as this involves a change in institutional culture, structure and orientation.

Policy Proposal 3.1

Resource Knowledge Intermediaries

Mechanisms are required that promote access, interaction and collaboration between knowledge providers and business users and enhanced absorption capacity among firms. Intermediary organisations can bridge this gap and extensive knowledge networks co-ordinated at regional level, to achieve knowledge diffusion for utilisation.

Example: The Food Technology Transfer Pilot Programme under the BMW Regional Programme of Innovative Actions 2006-2008 was established due to the identified lack for access of small and micro food businesses to food technologists. Two food technologists were recruited and funded under this programme and based in St. Angela's College, Sligo and the Food Hub Drumshanbo. The food technologists facilitated and provided a variety of different activities under the Programme and assisted more than 50 companies. These include: needs analysis in order to tailor supports in ways that add value to other existing supports available; one-to-one mentoring with food companies in the Region; running a series of workshops and training courses for food companies in the Region; facilitating of networking events and opportunities; and research/study visits.

Policy Proposal 3.2

Rollout of InterTradeIreland Fusion Initiatives Within Ireland

FUSION is the first all-island network between industry and academia administered by InterTradeIreland. The programme enables knowledge and technology transfer across the island, supporting innovation and increased capability and competitiveness.

FUSION facilitates 3-way partnerships between:

- Companies with technology-based development needs;
- Third-level Institutes with specific research expertise; and
- Science & Technology graduates.

Currently this programme is restricted to cross-border activities (the company and third level institute must be from opposite jurisdictions), an opportunity exists for the Irish Government to roll-out such a scheme on a national basis without the geographical limitations that currently pertain. Such an initiative has the potential to engage/retain large numbers of graduates in providing technological supports to firms and thus increasing their innovation capacity and performance.

Policy Proposal 3.3

Avail of Pilot Experimental Actions Theme in Regional OPs to Pilot Test New Initiatives to Link Firms with Knowledge

The Regional Operational Programmes (OPs) 2007-2013 provide a mechanism through which 50% of the cost of experimental actions may be recouped through the Experimental Actions Theme in both the BMW Region and the Southern and Eastern Region. This presents an opportunity to pilot intermediary actions to link enterprises with third level institutions.

4. Supportive Infrastructure

Key Point 4.1

Developing a User Orientated Innovation Approach to Complement Intermediary Infrastructures is Key

Innovation centres and diffusion intermediates are mediums through which knowledge valorisation can take place and which will ultimately lead to the an improved utilisation of new technologies. Evidence from other OECD countries¹¹ suggests supportive or systemic infrastructure are required to further encourage the production and diffusion of knowledge. As innovation systems develop it is important to match the needs of the private firms with the knowledge that is being produced – this requires better interaction between the producers and users of knowledge.

Policy Proposal 4.1

Develop Sector Specific Technology Transfer Arrangements

Example: **Proposed Technology Transfer Network for the Medical Devices sector in the BMW Region**

With the support of the BMW Regional Programme of Innovative Actions, Lónra has undertaken a feasibility study into the establishment of a collaborative Technology Transfer Network in the medical devices sector in the BMW Region. It responds to one of the key proposals in the American Chamber of Commerce paper “Retuning the Growth Engine” in which the willingness of US Corporates to engage in strategic partnerships and to licence technologies to indigenous firms is affirmed.

It is proposed that the Technology Transfer Network would be hosted in a Regional Technology Transfer Centre, modelled on best practise across Europe, to undertake technology location, transfer, licensing and brokerage roles, availing of the wide expertise that exists within the higher education institutes to meet the demands of the medical devices sector. A broad partnership is proposed and it is intended that a regional and national group of experts will guide the technology transfer programme. This will address a major deficit in the technology transfer capability of the Region and will increase the level of intellectual property transfer and licensing to indigenous enterprises from multi-national companies and from higher education research centres in the broad medical devices sector. Potential funding sources to establish the network and commence operations are currently being explored.

¹¹ Roobeek, A.J.M. (1990) Beyond the Technology Race. An Analysis of Technology Policy in Seven Industrial Countries, Amsterdam: Elsevier.

Policy Proposal 4.2

Regular Sectoral Briefings for Industry should provided by Research Centres

Many firms have difficulty in accessing relevant information because they are unaware of where to find it, lack the time and resources to find it, or are unable to properly filter information when they do find it. Research and intelligence briefings provide a mechanism to offset this knowledge and interaction deficit. Research and intelligence briefings were one of the pilot actions in the BMW Regional Programme of Innovative Actions, this proved to be a successful action and the evaluation report on the programme concluded that these actions should be mainstreamed and continued¹².

Policy Proposal 4.3

Business Mentoring initiatives for potential HPSUs

Another pilot action in the BMW Regional Programme of Innovative Actions was the Business Mentoring for Winners Programme. The aim of this programme was to increase the capacity of potential HPSU enterprises to acquire and use relevant technological innovation information through the consolidation of existing relationships and the development of new and growing linkages with the third-level sector. The final programme evaluation report recommended that this business mentoring initiative should be mainstreamed and continued¹³.

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¹² Fitzpatrick Associates Economic Consultants and WESTBIC (2009). Evaluation of the BMW Regional Programme of Innovative Actions. p.68.

¹³ Ibid p.68.