

A Regionalised Innovation Policy Should be Adopted

The location factors in a region play a big part in companies' abilities to engage in innovation. That is the main conclusion reached at an international conference organised by DIW Berlin in June 2004, and attended by leading experts from research and politics.¹ The papers presented showed that the factors that have a positive influence on innovation activity vary greatly from one region to another, which suggests that innovation policy should be more regionally differentiated. Regionalisation can also mean involving the regional level more in implementing the measures.

Innovations are the driving force in economic development and in the creation of jobs. However, some of the benefits of innovations do not accrue to the innovators themselves but to others in the form of knowledge spillovers. As a result the benefit of innovations to the economy as a whole is generally much greater than the benefit to their originators. Without state promotion the private sector would undertake fewer innovation projects than is economically desirable. But what form should a successful innovation policy take?

Numerous empirical analyses have shown the great importance of regional factors in originating innovation. In Germany, as in many other countries, promotional programmes have been launched in past years that were concentrated right from the start on certain regions and specifically designed to strengthen the innovation potentials there. A tendency is also evident to involve regional actors more in designing and implementing the policy.

On 4 and 5 June 2004 DIW Berlin held a conference on 'The Regionalization of Innovation Policy – Options and Experiences'. Leading figures in research, i.a. from the United States, Great Britain and France, discussed the regional aspect of innovation policy with ministerial officials.²

The conference dealt with four major topics: (1) the importance of the regional aspect for innovation activities; (2) the determinants of the quality of regional innovation systems; (3) theoretical concepts and practical

approaches for a regional innovation policy and (4) the interaction of regional and national innovation policy.

The most important results of the conference can be summarised as follows:

- Empirical studies show that the regional aspect and location conditions are of great importance for innovation activities.³ Innovation policy should be differentiated regionally in order to take account of the different geographical factors. Unified concepts for promoting regional innovation are not meaningful.⁴
- There is a tendency across regions to promote similar high-tech fields like biotechnology and communications technology, which generally only account for a small share of regional value creation.⁵ It is doubtful whether this practice of concentrating on the same areas will be successful, because a critical mass of innovation activities in a specific technology field is often difficult to achieve in a region.
- It can be helpful to implement at least part of the regionalised innovation policy directly in the regions. Involving local actors at an early stage will ensure that the regional location factors and specialisations are sufficiently taken into account in the measures.⁶
- Contests among regions for obtaining funding for their projects or ideas are promising ways of implementing a regionalised innovation policy.

A regionalised innovation policy can be more appropriate and thus more effective than a strategy operated entirely on national level. It can be particularly helpful to involve regional actors in implementing the measures and to shift some of the competences to the regional level. This does not mean that the national level is not important for policy making. Rightly conceived, a national and a regionalised innovation policy are not competing strategies, they are mainly complementary. However, the best and most efficient way to split the work and coordinate the measures between the various levels of policy making is still largely unclear.

³ This is the conclusion of i.a. Caroline Hussler and Patrick Ronde [2].

⁴ France Toddling and Medially Triple [11], for example, concluded from their analysis of regional innovation conditions and systems that it should be made dependent on the regional conditions whether an innovation policy strategy aims to achieve incremental or radical innovations, whether the aim should be to promote enterprises already located in the region or to attract new businesses from outside, and whether to promote networking between regional protagonists or joint ventures between them and external partners.

⁵ In this connection Maryann Feldman [18] pointed out in her paper that 48 out of 50 US states had a programme to promote biotechnology.

⁶ Martina Frommhold-Eisebith [9] concluded from her analysis of the implementation of regional innovation policy that on regional level as well the formation of innovative clusters should use the 'bottom-up approach' as far as possible.

¹ The conference was held in the Japanese-German Centre in Berlin on 4 and 5 June; it received financial support from the Berlin Senate and the Berlin Technology Foundation.

² The papers are listed in the box on p. 292. The figures after the authors' names in the footnotes show which paper the results are taken from.

The influence of regional factors on innovation activity

Companies' innovation activities greatly depend on regional location conditions. Companies profit from local knowledge spill-overs from other companies or public research establishments in the same region.⁷ Proximity to other important actors helps to reduce the uncertainties which innovation activities entail through cooperation and the exchange of ideas. Innovative companies therefore prefer to locate where other innovative companies and research establishments are already operating, and where the labour market offers a good choice of the skills they need. This often leads to geographical clusters of innovative companies and other relevant institutions (universities, research establishments, technology transfer offices) that are characterised by intensive networking and a high degree of access to external knowledge. These clusters offer favourable conditions for the development and commercialisation of innovative ideas.

The Main Features of a Regionalised Innovation Policy

Basing the promotion of innovation activities on regional considerations can be justified in at least three ways. Firstly, by the importance of regional factors for innovation activities, for empirical studies have shown that inter- and intra-regional networking of actors is of crucial importance.⁸ Secondly, establishing cooperation in research and development (R&D) and the transfer of knowledge entail particular problems. Opening up and firmly establishing cooperative relations can therefore be suitable fields for promotional measures. And thirdly, competition between regions and between different solutions offers definite incentives for efficiency and creates learning effects.⁹

A regionalised innovation policy can take many different forms. Generally the measures are not primarily designed to redistribute resources between regions. The main aim is to mobilise the resources already available in a region, i.e. the region's 'endogenous potential'. In this context it is of particular importance to stimulate the innovative division of labour and so encourage networking within the region and beyond. For the obstacles that may prevent regional innovation systems from functioning can generally be found in the lack of interaction between the various actors and their inadequate

involvement in the flow of knowledge beyond the regional level.

The variety of regional innovation conditions means that a regionalised innovation policy must be adapted to local conditions. As far as possible local institutions and actors should be involved right from the start in designing innovation policy measures, so that the innovation promotion strategy can benefit from their expert knowledge of local geographical conditions and existing specialisations. In this way a regionalised innovation policy can tackle problems more adequately and focus more on specific conditions than national promotional measures.

Cluster formation as a promotional strategy?

Regional clusters are the geographical concentration of companies and other institutions (universities, research establishments, technology transfer offices) that are working in similar fields. Owing to their common interests and complementary properties the actors in clusters are often closely networked with each other in the production of innovations. Empirical studies on clusters stress the importance of the interaction on the local level, and the advantage to the innovation process of the geographical proximity of the partners in a joint venture.¹⁰ Clearly this interaction is decisive in the success of a cluster. However, the geographical concentration of innovation activities in itself does not appear to be sufficient to enable an innovative cluster to function.¹¹

This suggests that the formation of geographical centres would be appropriate in a policy of innovation promotion. However, experience has shown that it is very difficult for policy to steer the formation of innovation clusters.¹²

Possible instruments

The following policy measures can be used to achieve an improvement in regional innovation activities:

- Enabling or facilitating access to innovation resources in the region, for instance by setting up research establishments and promoting the transfer of knowledge in the region,
- Improving the skills of the regional labour force by increasing the supply of vocational training and education in the region,¹³

⁷ See Feldman [18].

⁸ See Ronde and Hussler [2] and Cooke [4].

⁹ See Eickelpasch and Fritsch [10].

¹⁰ See Frommhold-Eisebith [9].

¹¹ See Scott [1].

¹² See Frommhold-Eisebith [9].

- Strengthening the exchange of information and cooperation between regional companies and research establishments,¹⁴ especially orienting research activities better towards the needs of the regional economy,
- Initiating networks to promote innovation between companies, universities and regional research establishments with special programmes,¹⁵
- Marketing the regional business specialisation outside the region,¹⁶
- Offering specific services and consultancy for companies,
- Endeavouring to attract suitable investors to strengthen the value creation chain in the region.¹⁷

In this context it is important to strengthen the absorptive capacity of a region, i.e. its ability to recognise relevant knowledge, absorb it and use it for its own purposes. In particular, efforts can be made to strengthen the learning ability and adaptability of the regional innovation system and so overcome any existing blockages (the concept of the 'learning region').¹⁸

New competition-oriented approaches in regionalised innovation policy

In Germany new approaches in a competition-oriented regionalised innovation policy have been practised for some years. Examples of the new competition-oriented promotional programmes are BioRegio, EXIST, InnoRegio and Learning Regions. The special feature of this form of promotion is that the distribution of promotional funds is based on a regional competition for projects or ideas. Generally, only a relatively small percentage of the projects for which applications are filed actually receive funding. An important element in this promotional philosophy is that the various local actors create their own organisation for the competition. The aim of most competition-oriented programmes is to strengthen regional cooperation between the actors. Usually the applications received are assessed by an independent jury.

¹³ In her paper Maryann Feldmann [18] drew attention to the example of the LYCOS Internet search service set up by Carnegie-Mellon University in Pittsburgh, which then moved to the Boston area because the labour force there was more highly skilled.

¹⁴ See Benneworth and Charles [12].

¹⁵ See Soete and Vosskamp [7].

¹⁶ Knut Koschatzky [14] illustrates this by the example of the Trento region in Italy.

¹⁷ Eliasson [5].

¹⁸ See Hassink [8].

The main advantages of a competition-oriented regionalised innovation policy are:¹⁹

- In many cases no preferences for particular areas of technology or innovation projects are set. Which innovation projects appear promising will only be decided during the competition for ideas, and the ideas evolve in inter-regional competition for the promotional resources.
 - The promotional measures create incentives to build up a regional self-administered organisation to divide the work and develop cooperation in innovation activities, and this often mobilises the existing regional innovation potential.
 - Even regions whose projects are not promoted can profit from the self-administered organisations that are created and from any networking of actors that may have evolved for the innovation project.
 - Feedback on the applications during the competition can create learning effects for the applicants. Even where the project is not accepted this can be a positive stimulus. Learning effects can also be created through the variety of implemented solutions.
- In contrast to these advantages there are two disadvantages:
- Organising a competition involves more administrative work for the political decision-makers than promotional programmes requiring applications.
 - There is danger of political influence on the award of regional promotional funds.

If a regionalised innovation policy is competition-oriented the most promising proposals will be selected ('pick-the-winner' strategy). However, this will not level out the innovation conditions between regions²⁰; but that should not be the aim.

Conclusion

Regionalisation of innovation policy offers the advantage over promotion on the 'watering-can principle' that the geographical aspect of innovation processes and the specific regional factors are taken into account. This opens up a wide range of possibilities to improve the effectiveness of innovation policy through regional differentiation and greater involvement of local actors. Competition-oriented promotional programmes to strengthen regional cooperation are a promising approach here.

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¹⁹ See Eickelpasch and Fritsch [10].

²⁰ See Kaufmann and Wagner [13].

International conference on 'Regionalized Innovation Policy – Options and Experiences'

Berlin, 4 and 5 June 2004

The following papers were presented:

1. Allen J. Scott (University of California at Los Angeles): 'Entrepreneurship, Innovation and Industrial Development: Geography and the Creative Field Revisited'
2. Patrick Ronde (BETA, Strasbourg) and Caroline Hussler (Université de Haute Alsace, Mulhouse): 'Regional or Sectoral Innovation Systems: What Really Matters'
3. Simona Iammarina (SPRU, Brighton): 'On the Definition of Regional Systems of Innovation: An Application to the Italian Case'
4. Phil Cooke (Cardiff University): 'Systemic Innovation: Triple Helix, Scalar Envelope, or Knowledge Spirals: an Overview'
5. Gunnar Eliasson (Royal Institute of Technology, Stockholm): 'Making Regional Competence Blocks Attractive – On the Critical Role of Entrepreneurship and Firm Turnover in Regional Economic Growth'
6. Bjørn T. Asheim (University of Lund and University of Oslo) and Lars Coenen (University of Lund): 'The Role of Regional Innovation Systems in a Globalizing Economy: Comparing Knowledge Bases and Institutional Frameworks of Nordic Clusters'
7. Birgit Soete and Rainer Vosskamp (DIW Berlin): 'Innovation Networks and Firms' Economic Behaviour'
8. Robert Hassink (University of Bonn): 'The Learning Region: A Policy Concept to Unlock Regional Economies from Path Dependency?'
9. Martina Frommhold-Eisebith (University of Salzburg): 'How to Institutionalize Innovative Clusters? Comparing Explicit Top-down and Implicit Bottom-up Approaches'
10. Alexander Eickelpasch (DIW Berlin) and Michael Fritsch (TU Freiberg, DIW Berlin and MPI-RES Jena): 'Stimulating the Division of Innovative Labor by Regional Competition for R&D Subsidies – A New Approach in German Innovation Policy'
11. Franz Tödtling and Michaela Tripl (Vienna School of Business): 'One Size Fits All? A Plea for a Differentiated Policy Approach with Respect to Regional Innovation Systems'
12. Paul Benneworth and David Charles (University of Newcastle upon Tyne): 'University Spin-off Policies and Economic Development in Less Successful Regions: Learning from Two Decades of Policy Practice'
13. Alexander Kaufmann and Petra Wagner (ARC Systems Research, Selbersdorf): 'The Effects of Structural Funds on the Stimulation of Innovation: Empirical Results from the Mid-term Evaluation of the Objective 1-Programme of the Austrian Province Burgenland'
14. Knut Koschatzky (ISI, Karlsruhe): 'Knowledge-based Regional Development – Governance Concepts at the Interface between Global Challenges and Regional Innovation Potentials'
15. David Charles (CURDS, Newcastle upon Tyne): 'From Regional Innovation Strategies to the Multi-level Governance of Science, Technology and Innovation'
16. Fumi Kitagawa (Hitotsubashi University, Tokyo): 'Innovation Systems, University-Business Networks and Regionalising the Knowledge-based Economy in Japan'
17. Tobias Nischalke and Andrea Schöllmann (Ministry of Economic Development, New Zealand): 'Fostering Regional Development and Innovation in New Zealand'
18. Maryann Feldman (University of Toronto): 'Jurisdictional Advantage: Why Regions and Regional Policy Are Still Relevant'

The papers can be downloaded from the conference homepage:

http://www.diw.de/deutsch/produkte/veranstaltungen/Regionalization_Innovation-Policy_Conf2004/index.html

Panel members for the concluding discussion at the conference:

Engelbert Beyer (Federal Ministry of Education and Research)
 Phil Cooke (Cardiff University)
 Gunnar Eliasson (Royal Institute of Technology, Stockholm)
 Michael Fritsch (TU Freiberg and DIW Berlin)
 Kurt Hornschild (DIW Berlin)