



Thinking Strategically: RTD and the Objective 2 Programmes

IQ-Net Thematic Paper 4(3)

Ruth Downes and Mary Louise Rooney

***IQ-Net
Improving the Quality of Structural Fund
Programming through Exchange of
Experience***

European Policies Research Centre

University of Strathclyde

Graham Hills Building

40 George Street

Glasgow G1 1QE

Tel: +44-141-548 3339/3955

Fax: +44-141-548 4898

E-mail: j.f.bachtler@strath.ac.uk

sandra.taylor@strath.ac.uk

ISBN 1-871130-27-1 July 1998

Preface

IQ-Net: Networking to improve the quality of Objective 2 programmes

Launched in early 1996 and managed by the *European Policies Research Centre* (EPRC) at the University of Strathclyde in Glasgow, the network *IQ-Net* facilitates exchange of experience in the development, implementation and evaluation of Objective 2 programmes. Funded by a consortium of 13 Objective 2 areas and the European Commission (DG XVI), the network meets twice a year to examine issues of practical relevance to programme-makers and share examples of good, innovative and distinctive practice from across the EU. The first four meetings were held in Glasgow, in association with Strathclyde European Partnership (February 1996), in Cardiff, hosted by the Welsh Office and Welsh Development Agency (September 1996), in Gelsenkirchen, Nordrhein Westfalen, hosted by the Land Government of Nordrhein Westfalen (April 1997), and in Fyrstad, hosted by the Fyrstad Objective 2 secretariat. The fifth and most recent meeting was held in Bordeaux and hosted by the Aquitaine SGAR and regional council. Meetings provide the opportunity to discuss the results of a structured programme of applied research and debate, steered by the network's partner regions:

- Steiermark and Niederösterreich, Austria
- Nordjylland, Denmark
- Päijät-Häme and South Karelia, Finland
- Aquitaine and Rhône Alpes, France
- Nordrhein Westfalen and Saarland, Germany
- Ångermanlandskusten and Fyrstad, Sweden
- Industrial South Wales and Western Scotland, UK

IQ-Net Thematic Papers

This document contains the fourth series of thematic papers, produced by EPRC in spring 1998 as part of *IQ-Net*'s applied research programme:

- 4.1: The new Structural Fund Regulations - current Debates
- 4.2: Employment and the Structural Funds: Making a good Job of making Jobs
- 4.3: Thinking strategically - RTD and Objective 2 Programmes
- 4.4: Objective 2 Programming in Aquitaine, France

It supplements the following previous *IQ-Net* papers:

- 1.1: Managing the Structural Funds, Institutionalising Good Practice
- 1.2: RTD/Innovation policies in Objective 2 programmes
- 1.3: Generating Good Projects
- 1.4: Monitoring and Evaluation
- 2.1: Interim Evaluation
- 2.2: Synergy between the ERDF and ESF
- 2.3: The Environment in Objective 2
- 2.4: The Nordrhein Westfalen Objective 2 Programme
- 3.1: The Evolution of Objective 2 Programmes
- 3.2: Integrating Equal Opportunities into Objective 2 Programmes
- 3.3: Meso-Level Partnerships and Structural Fund Implementation
- 3.4: Objective 2 Programming in Fyrstad, Sweden

Focusing on topics selected by the network's partner regions, each paper places issues in their international context, raises questions for debate and highlights distinctive and innovative

practices. For the convenience of readers, executive summaries are included in French, German and English.

Papers are first drafted on the basis of field research (encompassing interviews with Objective 2 programme managers and partners at regional, Member State and Commission levels) and substantial desk research. They are then modified to reflect the discussions of the *IQ-Net* meeting and the comments of network sponsors. The papers are distributed to a wide group of people nominated by the sponsors. The EPRC welcomes comment and feedback on them.

Readers are reminded that the content of the papers does not necessarily represent the official position of either the partner regions or the Commission, and that errors of fact or interpretation are the responsibility of the authors alone.

Acknowledgements

The research team for Series 4 of the *IQ-Net Thematic Papers* comprised:

Professor John Bachtler	Ruth Downes	Patricia Noble
Dr Ross Brown	Rona Fitzgerald	Mary Louise Rooney
Charlotte Damborg	Rona Michie	Sandra Taylor

Thanks is due to everyone interviewed as part of the research process, without whose input the current research would not have been possible. The contribution of the European Commission, which co-finances the network is also gratefully acknowledged.

Translations were carried out by Ingrid Schumacher (German) and Christelle Promé-McKeegan (French).

Further Information

Additional copies of papers and further information on *IQ-Net* can be obtained from John Bachtler and Sandra Taylor, managers of the network, at EPRC. The December 1996, June 1997, January 1998 and September 1998 editions of '*IQ-Net Bulletin*', a newsletter co-financed by DG XVI and available from EPRC, contain synopses of the papers.

Thinking Strategically: RTD and the Objective 2 Programmes

TABLE OF CONTENTS

EXECUTIVE SUMMARIES

1.	Thinking Strategically: RTD and the Objective 2 Programmes.....	3
2.	Penser Stratégie - RDT et les Programmes d'Objectif 2	7
3.	Strategisches Denken - FTE und Ziel 2 Programme	13

THEMATIC PAPER

1.	Introduction	19
2.	The Importance of the Regional Level - Theoretical Background	19
3.	The Rationale for a Strategic RTD Approach.....	22
4.	Strategic RTD Approaches in Objective 2 Areas: Specific RTD Strategies	24
4.1	RITTS/RIS Initiatives	24
4.2	On-going Strategic Influence.....	30
4.3	Points of Comparison	35
5.	Summary and Conclusions.....	37

Executive Summaries

*Thinking Strategically:
RTD and the Objective 2 Programmes*

*Penser Stratégie –
RTD et les Programmes d'Objectif 2*

*Strategisches Denken –
FTE und Ziel 2 Programme*

1. THINKING STRATEGICALLY: RTD AND THE OBJECTIVE 2 PROGRAMMES

1.1 Introduction

The role of both RTD and now increasingly of innovation support as a key component of regional development in Objective 2 programmes is widely recognised. RTD comprises one of the horizontal priorities of the Structural Funds and the importance of supporting innovative SMEs and the capacity to adapt to new technologies was also highlighted in the new Structural Fund regulations. This paper explores the possibility of integrating a more strategic approach to both RTD and innovation in Objective 2 programmes as a response to the challenge raised by these trends.

1.2 The Importance of the Regional Level

The process of innovation is now understood to take place within a spatial context and be influenced by spatially-specific characteristics and conditions. Several theoretical concepts underline the role of the region as one key spatial context, including the 'innovative milieu' and the 'regional system of innovation'. One of the main ideas behind the 'learning region', as the name implies, is that regions must be able to 'learn' ie. to adapt to fresh ideas and evolve new organisational patterns to meet the demands of more knowledge-based development. Similarly, regions must be able to 'un-learn', that is to move away from traditional structures which now hinder future growth.

Given the importance to competitiveness of the innovative capacity of economies and firms, these issues are also of central relevance to regional development. Both theory and practical experience suggest that effectively targeted regional level action can positively impact the process of innovation. How can regions discover the way in which this can best be done within their individual spatial contexts and learn how to initiate appropriate change to ensure an on-going response to changing technologies and the need to create a positive environment for innovation?

One possibility is through the incorporation of a more strategic framework for RTD and innovation related action. This would include a good understanding of the regional economic and technology related conditions and an in-depth analysis of both the supply and demand. The result should be a more robust basis for formulating better targeted policy intervention.

1.3 Strategic RTD Approaches in Objective 2 Areas

Two particular approaches to bringing regional development and strategic RTD planning together can be highlighted from current Objective 2 practice. First, the integration of a separate, regional-level RTD strategy and, second, the incorporation of more incremental strategic planning. The former can be illustrated using the experience of regions which have taken part in European Commission RITTS (Regional Innovation and Technology Transfer Strategies) or RIS (Regional Innovation Strategies) initiatives which are designed to help regional authorities and actors develop a set of actions based on a common understanding of the barriers and drivers of innovation in their region.

1.3.1 *Specific Strategies*

Four IQ Net regions have undertaken a RITTS, RIS or RTP (forerunner to RIS) exercise and the analysis focuses on their experience. Within the UK, the *Strathclyde* RIS was able to benefit from the earlier *Welsh* RTP and resulted in the establishment of a more direct link between the RIS and the Western Scotland Objective 2 programme. The responsibility for managing and carrying out the RIS lies with Strathclyde European Partnership, the implementing body for the Objective 2 programme, and thus can tap into pre-existing partnership relationships can be utilised to help drive the strategy forward. This is important given one of the key lessons from the Welsh experience that the *process* of establishing a strategic approach and building a regional consensus between and within public and private sectors is central to the creation of a culture for innovation. The closer integration has also meant that both the strategic thinking and the practical implementation of the RIS could be incorporated into the current SPD, including a direct link to funding options through the Objective 2 programme.

In *Ångermanlandskusten*, the RITTS exercise highlighted the importance of stimulating technological *demand*, rather than supply, which significantly altered the traditional policy direction included in the SPD and the type of projects funded under the programme. As with the UK experience, it was found to be beneficial to have a direct personal link between the RITTS and Objective 2 personnel. The understanding of the wider definition of innovation, including the influence of non-technological factors on the development of improved products, services and processes, has emerged from both the *Lower Austrian* and the *Strathclyde* RIS initiatives. In the *Lower Austrian* case, this has led to an additional study to examine the issue of innovation across the broader industrial and commercial support spectrum designed to guide this part of the new Objective 2 programme.

1.3.2 *On-going Strategic Influence*

A different approach to incorporating a more strategic direction to RTD and innovation activity is to engender on-going debate on the regional preconditions and requirements in this area and to incorporate this into the regional decision-making process. In *North Jutland*, technology development and innovation is an important national focus and a positive innovation culture has also been encouraged through European programmes such as STRIDE. Structural Fund programmes have consistently highlighted an RTD/innovation component and many activities are linked specifically to regional institutions. The long practice of consultative involvement of the main innovation and technology actors has resulted in the importance of these elements almost being taken for granted.

Similarly, the framework for RTD and innovation support in *Aquitaine* is responsive to changing regional circumstances, and long-standing partnership and strategic thinking can be identified between key players in the RTD field. The regional council, which itself has traditionally pursued pro-active policy in this area, also operates within the framework of national Contrat du Plan which contains a strong research and technology transfer component. This overall positive framework influences the direction of the Objective 2

programme, linking it to the wider RTD objectives covering the region as a whole.

1.3.3 *Points of Comparison*

The two approaches highlighted above are, in many ways, interlinked and regions cannot 'choose' easily between them. In some regions, the initiation of a specific plan may ultimately lead to the emergence of a more on-going approach while, conversely, regions with a more incremental approach may exploit the advantages of an explicit strategy either to 'take stock' or to make the philosophy more visible in the region. The overall aim remains the same ie. the provision of strategic information on regional deficits, opportunities and policy so as better to inform and target RTD and innovation measures. The way in which this is best achieved will depend to a large degree on the starting point of the region in question.

The attempt to promote more strategic thinking at regional level will not automatically result in technological progress or the emergence of a positive environment for innovation. It is important to bear wider influencing factors in mind, including seemingly petty issues such as the ability of key individuals to work together. Time is another key factor and it must be recognised that trust-based relationships and mentality changes will not be achieved overnight.

1.4 **Conclusions**

A number of key issues can be identified from the discussion:

- *The process of strategy building is of integral importance*

No single set of measures will be able to target the entire range of factors which influence the ability of a firm to innovate. The creation of a supportive regional environment for innovation is at least as important in the long term and this is more likely to emerge given consensus and clear direction from the main research providers and support institutions. The exercise of drafting an explicit regional RTD and/or innovation strategy can act as a push to promote new consultation, consensus and the uniting of disparate objectives and ideas under a common framework. Once this process is started, the opportunity exists to strengthen and build upon it.

- *Evaluation and review are critical components of a strategic approach*

An RTD strategy is not a static entity and at least some components will become out-dated or require a change of focus. Evaluation and review must be applied to both distinct strategies and to the less formal input of strategic thinking. In the former case, evaluation can help reaffirm what is still relevant or highlight new aspects or refinements to the original objectives. Evaluative reviews within the context of more on-going discussion can help provide a summary of the current regional position in relation to RTD thinking and implementation.

- *Effective implementation is imperative*

The implementation of concrete projects and initiatives, rooted in the emerging strategic thinking, is an essential component in building a positive environment for innovation. The strategy is not an end in itself but rather a

means for promoting more targeted activity. The visibility and reputation of the strategy, and the key organisations behind it, will be improved where clear and tangible results can be shown. One key element of implementation is necessarily related to finance and identifying possible sources of funding at an early stage is an important task.

- *Explicit co-ordination should exist between Objective 2 programmes and RTD strategy*

Time and resource pressures associated with planning and administering a Structural Funds programme mean that co-ordination with other strategic initiatives is not always easy. Formal co-operation structures, such as mutual representation on key committees, are important to make the connection more robust, although personal links can also play an important role. The need for co-ordination should be recognised both by the team undertaking the RTD strategy and the Objective 2 programme management to avoid one-sided effort.

Effective RTD and innovation policy requires the commitment of all interested parties at grass roots level, the careful tailoring of policy and a pro-active approach to implementation. Incorporating a more strategic approach to this area within Objective 2 programmes is one way of attempting to meet this challenge. The exact nature of strategic intervention will vary between regions but the consideration of a suitable approach would appear in the majority of cases to be a worthwhile exercise.

2. PENSER STRATÉGIE - RDT ET LES PROGRAMMES D'OBJECTIF 2

2.1 Introduction

Il est largement admis que le rôle joué par les mesures d'assistance à la Recherche et au Développement Technologique (RDT) mais également, de façon croissante actuellement, par les mesures d'assistance à l'Innovation est un élément clé du développement régional dans les programmes d'Objectif 2. La recherche et le développement forment l'une des priorités horizontales des Fonds Structurels et les nouveaux règlements des Fonds Structurels soulignent aussi qu'il est important de soutenir les PME innovantes et leur capacité d'adaptation aux nouvelles technologies. Cet article explore la faculté d'intégration, dans les programmes d'Objectif 2, d'une approche plus stratégique de la RDTI (Recherche Développement Technologique et Innovation) en tant que réponse au défi soulevé.

2.2 L'Importance du Niveau régional

Il est maintenant accepté que le processus d'innovation se produit dans un contexte territorial particulier et est influencé par les caractéristiques et les conditions spécifiques à un territoire donné. Plusieurs concepts identifient la région comme étant l'un de ces territoires clés, y compris le 'milieu innovatif' et le 'système régional d'innovation'. Comme son nom l'indique, l'une des idées principales derrière le concept de la 'région-apprenti' est que les régions doivent être capables 'd'apprendre', c'est à dire de s'adapter aux idées nouvelles et d'évoluer vers des nouveaux modes d'organisation afin de satisfaire aux demandes d'un développement de plus en plus basé sur la connaissance. De même, les régions doivent être capables de 'désapprendre', c'est à dire de s'éloigner des structures traditionnelles qui font maintenant barrière à leur croissance future.

Étant donnée l'importance que revêt pour la compétitivité la capacité innovatrice de l'économie et des entreprises, ces questions sont aussi d'une importance centrale pour le développement régional. La théorie comme la pratique suggèrent qu'une action de niveau régional efficacement ciblée peut avoir un impact positif sur le processus d'innovation. Comment les régions peuvent-elles découvrir la meilleure façon de faire à l'intérieur de leurs contextes territoriaux individuels? Comment peuvent-elles apprendre à initier les changements appropriés pour assurer une réponse constante aux changements technologiques et pour créer un environnement favorable à l'innovation?

L'incorporation d'un cadre plus stratégique pour la RDT est une possibilité. Cela demanderait d'avoir une connaissance approfondie des conditions économiques et technologiques régionales et de procéder à une analyse profonde de l'offre et de la demande. Il devrait en résulter une base plus solide permettant la formulation d'une politique d'intervention plus ciblée.

2.3 Approches Stratégiques de la RDT dans les Régions d'Objectif 2

À partir des pratiques actuelles dans les régions d'Objectif 2, il est possible d'identifier deux approches particulières qui tendent à rapprocher le

développement régional et une planification stratégique de la RDT: premièrement, l'intégration d'une stratégie régionale pour la RDT séparément du reste et deuxièmement, l'incorporation d'une planification stratégique plus progressive. La première pratique est illustrée par l'expérience des régions qui ont pris part aux initiatives SRITT (Stratégies Régionales d'Innovation et de Transfert de Technologie) ou SRI (Stratégies Régionales d'Innovation) de la Commission qui ont été conçues pour aider les autorités et les acteurs régionaux à développer un ensemble d'actions basé sur une connaissance commune des barrières et des facteurs d'innovation dans leur région.

2.3.1 *Stratégies spécifiques*

Quatre régions qui participent à IQ-Net ont pris part aux initiatives SRITT, SRI ou PRT (Plan Régional de Technologie, prédécesseur de SRI) et l'analyse portera donc sur leurs expériences. Au Royaume Uni, la SRI de Strathclyde a pu bénéficier de l'expérience du PRT gallois et a permis d'établir un lien plus direct entre la SRI et le programme d'Objectif 2 pour la région ouest de l'Écosse. La responsabilité de la SRI et de sa mise en oeuvre repose sur le Strathclyde European Partnership, l'autorité aussi chargée de la mise en oeuvre du programme d'Objectif 2 dans la région, dès lors il a été possible d'exploiter les relations partenariales pré-existantes pour développer la SRI. Ceci est important car, selon l'expérience galloise, établir une approche stratégique et construire un consensus régional entre et parmi le secteur public et le secteur privé est central pour le développement d'une culture de l'innovation. Une intégration plus étroite signifia également qu'une réflexion stratégique et la mise en oeuvre de la SRI pouvaient toutes deux être incorporées dans le DOCUP actuel, ce qui crée un lien direct avec les possibilités de financement dans le programme d'Objectif 2.

Dans la région d'Ångermanlandskusten, l'exercice SRITT a révélé qu'il était plus important de stimuler la demande technologique que l'offre; ceci a donc modifié considérablement l'orientation prise dans le DOCUP ainsi que le type de projets financés par le programme. Comme pour l'expérience britannique, il a été trouvé qu'il était très bénéfique d'avoir un lien direct entre le personnel chargé de la SRITT et celui chargé du programme d'Objectif 2. La compréhension d'une définition plus large de l'innovation, comprenant l'influence des facteurs non technologiques sur le développement des produits améliorés, des services et des procédés émergea des initiatives SRI de Basse-Autriche et de Strathclyde. Dans le cas de la Basse-Autriche, la SRI a conduit à une étude supplémentaire qui a analysé la question de l'innovation dans le spectre de l'assistance industrielle et commerciale. Cette étude a par la suite influencé le nouveau programme d'Objectif 2.

2.3.2 *Influence stratégique continue*

Une approche différente pour donner une direction plus stratégique aux activités liées à la RDT est d'engendrer un débat continu sur les conditions et les besoins régionaux dans ce domaine et de l'incorporer au processus décisionnel régional. Dans la région du Jylland nord au Danemark, le développement technologique et l'innovation sont un centre d'intérêt national

important et une tradition d'innovation a aussi été encouragée à travers des programmes européens tels que STRIDE. Les programmes des Fonds Structurels ont de manière constante mis en valeur un élément de RDT et beaucoup d'activités sont spécifiquement liées aux institutions régionales. Le fait que, de longue date, les acteurs principaux dans le domaine de la RDT ont été impliqués de manière consultative a résulté en ce que l'importance de ces éléments a presque été considérée comme allant de soi.

De même, le cadre général pour le soutien à la RDT en Aquitaine répond aux changements de circonstances dans la région. L'approche stratégique des acteurs principaux est caractérisée par un partenariat de longue date. Le Conseil Régional, qui a lui-même traditionnellement poursuivi une politique active dans ce domaine, intervient également dans le contrat de plan État-Région qui contient un élément important de recherche et de transfert de technologies. Ce cadre général favorable influence l'orientation prise dans le programme d'Objectif 2, le liant aux objectifs plus vastes de la RDT dans la région.

2.3.3 Comparaison

Les deux approches décrites ci-dessus sont, de plusieurs façons, liées et les régions ne peuvent pas 'choisir' aisément l'une ou l'autre. Dans certaines régions, initier un plan spécifique peut résulter à terme dans l'émergence d'une approche plus continue alors que, inversement, des régions qui ont une approche plus progressive peuvent exploiter les avantages d'une stratégie plus explicite pour soit faire le point soit rendre leur philosophie plus visible dans la région. Le but général reste le même, à savoir la provision d'informations stratégiques sur les déficits régionaux, les opportunités et les politiques afin de mieux informer et cibler les mesures liées à la RDT. La meilleure façon d'atteindre ce résultat dépendra pour une grande partie du point de départ de la région en question.

Essayer de promouvoir une approche plus stratégique au niveau régional ne résultera pas automatiquement dans des progrès technologiques ou dans l'émergence d'un environnement favorable pour l'innovation. D'autres facteurs plus généraux ont également une grande influence, y compris des facteurs qui peuvent sembler insignifiants tels que l'aptitude des acteurs clés à travailler ensemble. Le facteur temps est aussi important et il doit bien être compris que des relations de confiance et des changements de mentalité ne vont pas se concrétiser d'un jour à l'autre.

2.4 Conclusion

Un certain nombre de points clés ont été identifiés dans cet article:

- *Le processus de développement d'une stratégie est d'une importance primordiale*

Un ensemble unique de mesures ne sera pas à même de cibler tous les facteurs qui ont une influence sur la capacité des entreprises à innover. La création d'un environnement régional de soutien à l'innovation est tout aussi important dans le long terme et ceci est plus à même de se concrétiser

si un consensus et des instructions claires se dégagent des principales institutions chargées de la recherche et des organismes qui offrent leur soutien. Avoir à rédiger une stratégie explicite pour la RDT peut donner une impulsion à de nouvelles consultations, peut promouvoir un consensus et réunir des objectifs et des idées complètement différents sous un même cadre général. Une fois ce processus commencé, il existe une possibilité de le renforcer et de le développer.

- *L'évaluation et la révision sont des éléments indispensables d'une approche stratégique*

Une stratégie pour la RDT n'est pas une entité statique et certains éléments deviendront dépassés ou auront besoin d'être approchés différemment. Les stratégies particulières et la réflexion stratégique doivent toutes deux être sujettes à évaluation et à révision. Dans le premier cas, l'évaluation peut contribuer à réaffirmer ce qui est toujours intéressant ou souligner de nouveaux aspects ou des améliorations à apporter aux objectifs d'origine. Une révision à but évaluatif qui a lieu dans le cadre d'un dialogue continu peut contribuer à résumer la position régionale sur la RDT et sur sa mise en oeuvre.

- *Une mise en oeuvre efficace est impérative*

La mise en oeuvre d'initiatives et de projets concrets, enracinés dans la réflexion stratégique naissante est un élément essentiel pour le développement d'un environnement favorable à l'innovation. La stratégie n'est pas une fin en soi mais plutôt un moyen pour promouvoir une activité plus ciblée. La clarté et la réputation d'une stratégie, et les organisations clés derrière elle, seront améliorées si des résultats clairs et tangibles peuvent être démontrés. Un élément clé de la mise en oeuvre est inévitablement lié à l'aspect financier, ainsi identifier des sources de financement dès tôt que possible est une tâche importante.

- *Une coordination explicite devrait exister entre le programme d'Objectif 2 et la stratégie pour la RDT*

Des contraintes financières, mais également liées au temps imparti, associées à la planification et à l'administration d'un programme des Fonds Structurels signifient que la coordination avec d'autres initiatives stratégiques n'est pas toujours aisée. Des structures officielles de coopération, telles que la représentation mutuelle dans des comités, sont importantes pour consolider les relations, bien que les relations personnelles peuvent également jouer un rôle. Le besoin de coordination devrait être reconnu à la fois par l'équipe chargée de la stratégie pour la RDT et par les personnes en charge du programme d'Objectif 2 afin d'éviter que les efforts ne soient faits que dans un sens.

Des politiques efficaces pour la RDT nécessitent l'engagement, au niveau le plus bas, de toutes les parties intéressées, l'adaptation précise des actions et une approche dynamique de la mise en oeuvre. Incorporer une approche plus stratégique dans ce domaine dans les programmes d'Objectif 2 est une façon d'essayer de remporter ce défi. La nature exacte de l'intervention stratégique

variera entre les régions mais considérer une approche appropriée semble être dans la majorité des cas un exercice rentable.

3. STRATEGISCHES DENKEN - FTE UND ZIEL 2 PROGRAMME

3.1 Einführung

Die Rolle von FTE und nun zunehmend auch Innovationsförderung als Hauptkomponenten regionaler Wirtschaftsförderung in Ziel 2 Programmen wird allgemein anerkannt. FTE umfaßt eine der horizontalen Prioritäten der Strukturfonds, und die Bedeutung der Unterstützung innovativer KMU und die Kapazität, sich neuen Technologien anzupassen, wurde ebenfalls in den neuen Strukturfonds-Vorschriften hervorgehoben. Diese Arbeit untersucht die Möglichkeit der Integration eines mehr strategischen Ansatzes zu sowohl FTE als auch Innovation in Ziel 2 Programmen als einer Reaktion auf die Herausforderung, die durch diese Trends gestellt wird.

3.2 Die Bedeutung der Regionalen Ebene

Der Prozeß der Innovation findet, so glaubt man nun, in einem räumlichen Kontext statt und wird durch räumlich spezifische Charakteristiken und Bedingungen beeinflusst. Mehrere theoretische Analysen unterstreichen die Rolle der Region als ein wichtiger räumlicher Kontext, wie u.a. das 'innovative Milieu' und das 'regionale Innovationssystem'. Eine der Hauptideen, die der 'Lernenden Region' zugrunde liegt, ist - wie der Name andeutet - daß Regionen in der Lage sein müssen zu 'lernen', d.h. sich neuen Entwicklungen anzupassen und neue Organisationsmuster zu entwickeln, um die Forderungen einer mehr auf Wissen basierenden Entwicklung zu erfüllen. Ähnlich müssen Regionen 'umlernen' können, d.h. von traditionellen Strukturen abweichen, die nun zukünftiges Wachstum behindern.

Angesichts der Bedeutung einer wettbewerbsfähigen innovativen Kapazität der Wirtschaften und Unternehmen, sind diese Themen auch von zentraler Relevanz für die regionale Entwicklung. Theoretische und praktische Erfahrungen deuten darauf hin, daß effektiv ausgerichtete Aktion auf regionaler Ebene den Prozeß der Innovation positiv beeinflussen kann. Wie können Regionen herausfinden, wie dies am besten innerhalb ihres individuellen räumlichen Kontexts geschehen kann und lernen, wie sie geeignete Änderungen initiieren können, um eine ständige Reaktion auf technologischen Wandel sicherzustellen, sowie die Notwendigkeit, ein positives Umfeld für Innovationen zu schaffen.

Eine Möglichkeit ist durch die Einbeziehung eines mehr strategischen Rahmens für FTE und innovationsbezogene Aktion. Dazu würde ein gutes Verständnis der regionalen wirtschaftlichen und technologiebezogenen Bedingungen gehören sowie eine genaue Analyse von sowohl von Angebot als auch Nachfrage. Das Ergebnis sollte eine robustere Basis für die Formulierung besser ausgerichteter maßnahmepolitischer Intervention sein.

3.3 Strategische FTE Ansätze in Ziel 2 Regionen

Zwei besondere Ansätze zur Verbindung regionaler Wirtschaftsförderung und strategischer FTE-Planung können in der derzeitigen Ziel 2 Praxis beleuchtet werden. Erstens die Integration einer eigenen FTE-Strategie auf regionaler Ebene und zweitens die Einbeziehung einer verbesserten strategischen

Planung. Die erstere kann anhand der Erfahrungen von Regionen illustriert werden, die an den Initiativen der Europäischen Kommission, RITTS (Regionale Innovations- und Technologietransferstrategie) oder RIS (Regionale Innovationsstrategie), teilgenommen haben. Diese Initiativen sollen regionalen Behörden und Akteuren dabei helfen, eine Reihe von Aktionen auf der Basis eines gemeinsamen Verständnisses dessen zu entwickeln, was Innovation in ihrer Region behindert bzw. vorantreibt.

3.3.1 *Spezifische Strategien*

Vier Regionen des IQ-Netzes haben RITTS, RIS oder RTP (Regionaler Technologieplan, ein Vorläufer von RIS) unternommen, und die Analyse konzentriert sich auf ihre Erfahrungen. Innerhalb des Vereinigten Königreichs war die RIS *Strathclyde* in der Lage, von dem früheren *walisischen* RTP zu profitieren, was zu der Errichtung einer direkteren Verbindung zwischen RIS und dem Ziel 2 Programm für Westschottland führte. Die Verantwortung für die Leitung und Ausführung der RIS liegt bei der European Strathclyde Partnership, die für die Umsetzung des Ziel 2 Programms zuständig ist, und somit auf bereits bestehende Partnerschaftsbeziehungen zurückgreifen kann, um die Strategie voranzutreiben. Dies ist wichtig angesichts einer der Hauptlehren aus der walisischen Erfahrung, daß der *Prozeß* der Definition eines strategischen Ansatzes und der Aufbau eines regionalen Konsens zwischen und innerhalb des öffentlichen und privaten Sektors von zentraler Bedeutung für die Schaffung einer Innovationskultur ist. Die engere Integration bedeutet auch, daß sowohl strategisches Denken als auch die praktische Umsetzung des RIS in das gegenwärtige EPPD einbezogen werden könnten, einschließlich einer direkten Verbindung zu Finanzierungsmöglichkeiten durch das Ziel 2 Programm.

In *Ångermanlandskusten* beleuchtete das RITTS-Projekt die Bedeutung der Stimulierung technologischer *Nachfrage*, anstelle von Angebot, was die traditionelle Richtung des EPPD und die Art der nach dem Programm finanzierten Projekte deutlich änderte. Wie im Vereinigten Königreich erwies es sich als vorteilhaft, eine direkte persönliche Verbindung zwischen dem Personal von RITTS und Ziel 2 zu haben. Das Verständnis der allgemeineren Definition von Innovation einschließlich dem Einfluß nicht-technologischer Faktoren auf die Entwicklung verbesserter Produkte, Dienstleistungen und Verfahren ging sowohl aus den RIS Initiativen Niederösterreichs als auch Strathclydes hervor. Im Falle Niederösterreichs führte dies zu einer zusätzlichen Studie zur Untersuchung des Themas Innovation im breiteren Spektrum industrieller und kommerzieller Unterstützung, die diesen Teil des neuen Ziel 2 Programms leiten soll.

3.3.2 *Laufender strategischer Einfluß*

Ein unterschiedlicher Ansatz zur Einbeziehung einer mehr strategischen Richtung in FTE- und Innovationsaktivität ist die Erzeugung einer kontinuierlichen Debatte über regionale Vorbedingungen und Erfordernisse in diesem Gebiet und ihre Einbeziehung in den regionalen Entscheidungsprozeß. In *Nordjütland* stehen technologische Entwicklung und Innovation national im Mittelpunkt, und eine positive Innovationskultur wurde auch durch europäische Programme wie STRIDE gefördert. Strukturfondsprogramme

haben konstant eine FTE/Innovationskomponente herausgestellt, und viele Aktivitäten sind speziell mit regionalen Institutionen verbunden. Aufgrund der langen Praxis konsultativen Engagements der Hauptakteure für Innovation und Technologie wurde die Bedeutung dieses Elements fast als selbstverständlich hingenommen.

Ähnlich reagiert der Rahmen für FTE und Innovationsunterstützung in *Aquitaine* auf sich ändernde regionale Umstände, und zwischen den wichtigsten Spielern auf dem FTE-Feld läßt sich eine langjährige Partnerschaft und strategisches Denken feststellen. Der regionale Rat, der selbst traditionell pro-aktive Politik auf diesem Gebiet verfolgt, operiert ebenfalls im Rahmen des nationalen *Contrat du Plan*, der eine starke Forschungs- und Technologietransferkomponente enthält. Dieser insgesamt positive Rahmen beeinflusst die Richtung des Ziel 2 Programms, und setzt es zu den allgemeineren FTE-Zielen in Verbindung, die die Region als ganze erfassen.

3.3.3 *Vergleichspunkte*

Die beiden oben beleuchteten Ansätze sind in vielerlei Beziehung miteinander verbunden, und die Regionen können nicht so ohne weiteres zwischen ihnen 'wählen'. In einigen Regionen führt eventuell die Einführung eines spezifischen Plans letztlich zu einem mehr kontinuierlichen Ansatz, während umgekehrt Regionen mit einem eher wachsenden Ansatz die Vorteile einer expliziten Strategie nutzen könnten, um entweder 'Bestand aufzunehmen' oder die Philosophie in der Region sichtbarer zu machen. Das Ziel bleibt insgesamt dasselbe, d.h. die Bereitstellung strategischer Informationen über regionale Mängel, Möglichkeiten und Maßnahmen, um somit FTE- und Innovationsmaßnahmen besser zu informieren und auszurichten. Wie dies am besten erreicht wird, hängt in großem Maße von dem Ausgangspunkt der jeweiligen Region ab.

Der Versuch, mehr strategisches Denken auf regionaler Ebene zu fördern, wird nicht automatisch zu technologischem Fortschritt oder einem positiven Umfeld für Innovationen führen. Es ist wichtig, allgemeinere, u.U. sogar kleinliche Einflußfaktoren zu berücksichtigen, wie die Kooperationsfähigkeit wichtiger Personen. Die Zeit ist ein weiterer wichtiger Faktor, und man muß erkennen, daß Vertrauensverhältnisse und Änderungen in der Mentalität nicht über Nacht erreicht werden können.

3.4 **Schlussfolgerungen**

Aus der Diskussion lassen sich eine Reihe wichtiger Themen identifizieren:

- *Der Prozeß strategischen Aufbaus ist von wesentlicher Bedeutung*

Eine einzige Gruppe von Maßnahmen wird nicht in der Lage sein, den gesamten Bereich von Faktoren anzusprechen, die die Innovationsfähigkeit von Unternehmen beeinflussen. Die Schaffung eines unterstützenden regionalen Umfelds für Innovationen ist langfristig mindestens genauso wichtig und wird sich eher herausbilden, wenn sich die wichtigsten Forschungseinrichtungen und Unterstützungsinstitutionen einig sind und eine klare Richtung verfolgen. Die Entwicklung einer expliziten FTE und/oder Innovationsstrategie kann als Anstoß für die Förderung neuer Konsultation, eines Konsens und die Vereinigung bisher getrennt verfolgter

Ziele und Ideen in einem gemeinsamen Rahmen ermöglichen. Ist dieser Prozeß erst einmal im Gange, so besteht die Möglichkeit, ihn zu verstärken und weiter darauf aufzubauen.

- *Evaluierung und Revision sind wichtige Komponenten eines strategischen Ansatzes*

Eine FTE-Strategie ist keine statische Einheit, und mindestens einige der Komponenten sind bald einmal überholt oder erfordern eine Richtungsänderung. Evaluierung und Revision müssen sowohl auf die tatsächlichen Strategien als auch auf die weniger formelle Eingabe strategischen Denkens angewandt werden. Im ersteren Falle kann die Evaluierung bestätigen helfen, was immer noch relevant ist oder neue Aspekte oder Verfeinerungen der ursprünglichen Ziele herausstellen. Evaluierende Revisionen im Kontext laufender Diskussionen können dazu beitragen, eine Zusammenfassung der derzeitigen regionalen Position in bezug auf FTE Denken und seine Umsetzung zu geben.

- *Effektive Umsetzung ist wichtig*

Die Umsetzung konkreter Projekte und Initiativen, die in dem aufkommenden strategischen Denken verwurzelt sind, ist eine wichtige Komponente beim Aufbau eines positiven Umfelds für Innovationen. Die Strategie ist kein Selbstzweck sondern ein Mittel zur Förderung mehr zielgerichteter Aktivität. Die Transparenz, das Image der Strategie und der dahinter stehenden Hauptorganisationen werden sich verbessern, wenn erst einmal klare, greifbare Ergebnisse vorliegen. Ein wichtiges Element der Umsetzung ist notwendigerweise mit der Finanzierung der Maßnahmen verbunden. Die Identifizierung möglicher Finanzierungsquellen ist bereits in einem frühen Stadium eine wichtige Aufgabe.

- *Zwischen Ziel 2 Programmen und der FTE-Strategie sollte eine explizite Koordination bestehen*

Der mit der Planung und Verwaltung eines Strukturfondsprogramms verbundene Zeitdruck bedeutet, daß die Koordination mit anderen strategischen Initiativen nicht immer leicht ist. Formelle Kooperationsstrukturen wie die wechselseitige Repräsentation in wichtigen Komitees sind wichtig, um die Verbindung stabiler zu machen, obwohl persönliche Beziehungen ebenfalls eine wichtige Rolle spielen können. Die Notwendigkeit einer Koordination sollte sowohl von dem Team, das die FTE-Strategie unternimmt, als auch der Ziel 2 Programmleitung erkannt werden, um einseitige Anstrengungen zu vermeiden.

Effektive FTE- und Innovationspolitik erfordert das Engagement aller interessierten Parteien auf der untersten Ebene, die sorgfältige Zuschneidung der Maßnahmen und einen pro-aktiven Ansatz bei der Umsetzung. Die Einbeziehung eines mehr strategischen Ansatzes auf diesem Gebiet der Ziel 2 Programme ist ein Versuch, dieser Herausforderung zu begegnen. Die genaue Art strategischer Intervention wird je nach Region variieren, doch wäre die Erwägung eines geeigneten Ansatzes in der Mehrheit der Fälle eine nützliche Übung.

Thematic Paper

*Thinking Strategically:
RTD and the Objective 2 Programmes*

Thinking Strategically: RTD and the Objective 2 Programmes

1. INTRODUCTION

The role of RTD and, increasingly, also of innovation support as a key component of regional development in Objective 2 programmes is widely recognised¹. The 8th Annual Report of the Structural Funds² dedicates a special focus to research and technological innovation which points to the persistence of technology-related disparities in the EU and the continued requirement for RTD support in the face of rapid technological change. The Structural Funds are identified as a key method of promoting regional level RTD support. The new Structural Fund regulations pick up this theme:

“Diversifying the economic fabric through the creation and development of innovative SMEs, the capacity to adapt to new technologies and changes in production systems as well as enhanced administrative capacity will be essential to improving the levels of competitiveness necessary to increase economic development and employment.”

In this context, the difficulty previously highlighted in *IQ-Net Paper 1 (2) - RTD/Innovation in Objective 2 Programmes* - of the effective targeting and implementation of both RTD and innovation measures in Objective 2 programmes is of particular concern. This paper aims to explore the possibility of integrating a more strategic approach to RTD and innovation as one way of tackling this problem. It is recognised that RTD and innovation are not identical, and that innovation is a much broader concept and often related more to the environment in which development and change takes place. Measures supporting both RTD and innovation find expression within Objective 2 programmes. The aim of this paper is less to examine the exact nature of measures included in the programmes and more to analyse the mechanisms and results of strategic planning in this area. It looks at why the regional level may be an appropriate level for strategic planning in this area, the experiences of Objective 2 regions in adopting and implementing a more strategic approach and finally draws a number of conclusions for discussion.

2. THE IMPORTANCE OF THE REGIONAL LEVEL - THEORETICAL BACKGROUND

The movement towards a more regionalised and territorial approach to policy development and implementation is evident in a range of policy areas. There is a growing awareness among policymakers of the influence of regional characteristics and conditions on the impact and effectiveness of policy

¹ Taylor, S (1996) *RTD/Innovation Policies in Objective 2 Programmes - Challenges and Best Practice*, IQ Net Thematic Paper, Series 1, No. 2, European Policies Research Centre, University of Strathclyde, Glasgow.

² CEC (a) (1997) *The Structural Funds in 1996 - Eighth Annual Report*, Commission of the European Communities, Luxembourg.

measures. These characteristics include the economic and enterprise structure, the institutional environment, and more 'intangible' factors such as the degree of social networking and mentalities. In parallel, increasing focus is being placed on the importance of stimulating endogenous regional potential for longer term competitive advance both for the region itself and for the regional contribution to national growth.

These trends are no less evident within the field of RTD development and the stimulation of innovation. It is important to recognise the differentiation between research and technology development and innovation. Innovation is a much broader phenomenon, related more closely to the wider environment in which development takes place. It is often linked to RTD, but can also be associated with new ideas and reactions to changing demands and requirements in areas such as marketing, finance or management. Theoretical concepts point to the changing nature of the innovation and RTD processes and a growth in the influence of spatial factors - both at national and increasingly at regional level. A broad understanding of some of this thinking provides a useful context in which to base any consideration of the use of strategic RTD planning.

Innovation is increasingly being understood as an interactive, rather than a linear, process. This means that product and process innovation occurs through interaction between firms, RTD suppliers, policy organisations and the market³. This places the focus as much on relationships and the operation and nature of systems and networks as on the individual actors. New understanding about the process of learning and knowledge transfer also identifies much knowledge as tacit and collective and therefore linked to its human and social context. Taken together, these concepts bring into sharper focus the role of the social environment within which innovation actors operate.

The spatial dimension is particularly relevant. Innovation takes place within a spatial context and is influenced by spatially-specific characteristics and conditions. At one level, the nature of technological development and innovation varies between countries because each 'national system of innovation'⁴ comprises different sets of actors and interrelationships. This is reflected, for example, in the range of policy approaches adopted at national level to encourage and support this area.

However, recent research has drawn more attention to the sub-national level and debate about whether the region comprises a separate and important context for innovation. The trust-based relationships and informal networks, now perceived to be integral contributors to the innovation process, are increasingly defined within such a sub-national context. Researchers speak of so-called 'untraded interdependencies' ie. necessary mutual links with no direct economic value such as regional customs and labour markets, norms and social values, and public institutions. It is argued that these

³ Taylor, S (1996) *op cit*

⁴ Lundvall, B-A (1992) *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*, Pinter, London.

interdependencies, together with localised input-output links, make the region a central framework for the innovation process⁵.

A key concept in the development of thinking about the sub-national context for innovation is that of the “innovative milieu”. This was developed by the GREMI group in the early 1990s and, drawing from the notion of endogenous growth, focuses on the relevance of the regional and local level framework to the innovation process. It can be defined as:

*“the set of relationships that occur within a given geographical area that bring unity to a production system, economic actors, and an industrial culture, that generate a localised dynamic process of collective learning and that act as an uncertainty-reducing mechanism in the innovation process.”*⁶

The central idea is that proximity matters because, among other factors, it facilitates the development of informal contacts and networking and allows the evolution of synergies. The concepts of ‘regional system of innovation’ and ‘learning region’⁷ are also similar in nature. They place emphasis on regional level characteristics and institutions and the interrelationships between regional supply and demand:

*“the committed and competent interaction of all public and private sectors, in the presence of unique regional factors, towards policies and actions that will improve the economic and social condition of the region...All elements influence each other and lead to the continuous adaptation of the system, a feature necessary to ensure its sustainability over time.”*⁸

One of the key ideas behind the learning region concept, as the name implies, is that regions need to be able to ‘learn’ ie. to adapt to fresh ideas and evolve new organisational patterns to meet the demands of knowledge-based firms and innovation needs. If this can be achieved, then regions can provide an essential and appropriate infrastructure to promote innovation and growth. Similarly, regions have to be able to ‘un-learn’, that is to move away from traditional patterns and institutional structures which may now act as a hindrance to future development⁹.

The regional or sub-national level is particularly relevant in examining innovation in SMEs. This group of firms is generally less internationally or globally-oriented and places greater significance on personal contacts and local links. The particular restrictions of management and enterprise structure which confront SMEs when undertaking R&D activities force them to rely

⁵ Storper, M (1995) The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies, *European Urban and Regional Studies*, Vol. 2:3.

⁶ Camagni, R P (1995) The Concept of the *Innovative Milieu* and its Relevance for Public Policies in European Lagging Regions, *Papers in Regional Science*, Vol. 74:4.

⁷ Morgan, K (1997) The Learning Region: institutions, innovation and regional renewal, *Regional Studies*, Vol. 31:4 ; Florida, R (1995) Toward the Learning Region, *Futures*, Vol. 27:5.

⁸ Doherty, P (1998) Regional Innovation and Industrial Policies and Strategies, *Regions*, No. 213, February 1998.

⁹ Hassink, R (1997) *What does the learning region mean for economic geography?*, Conference paper presented at the Regional Studies Association Conference, Frankfurt/Oder, 20-23 September 1997.

more heavily on external support - raising the importance of locally based supply organisations and networks.

The spatial dimension of technological change has also been picked up within regional development studies. In this field, the potential influence of innovation and RTD for increased productivity, skills and strategic future direction for the region is highlighted. Technological innovation is seen as a centrally important factor in the increase of regional competitiveness¹⁰. The particular RTD-related disadvantages suffered by problem regions, however, have been widened through insights from concepts such as those highlighted above. Simple supply-side deficits like the lack of a regional research institution, for example, are now supplemented with problems such as the dearth of co-operative culture or the self-sustaining nature of positive (or negative) regional innovation systems.

3. THE RATIONALE FOR A STRATEGIC RTD APPROACH

The above theoretical background endorses the role of regional level activity in the promotion and support of RTD. It suggests that strategic regional level action has significant potential to impact the process of innovation and thus the wider regional competitiveness. If this is the case, it is important to identify ways in which regional level intervention can most effectively be carried out.

It is possible to identify three basic 'infrastructures' which exist at regional level and which can all contribute to the flow of knowledge, ideas and learning¹¹:

- i) *manufacturing infrastructure*: a network of firms producing goods and services
- ii) *human infrastructure*: the regional labour market from which firms draw workers
- iii) *physical or communications infrastructure*: the system within which organisations deliver goods and services and communicate with each other.

In addition, regions can facilitate financial systems to help channel credit to firms and can establish industrial governance systems which encompass patterns of behaviour between firms and public sector organisations.

All the above areas must be taken into account in considering how best to support the innovative and RTD-related activities at regional level. The interactive innovation environment requires these 'infrastructures' to be more flexible and able to adapt and learn. Where this is not the case, policy intervention may fail because it bypasses the real needs of firms. The characteristics of individual regions will determine to what extent and at what stage this learning process is required. Well-known 'innovative' regions such as Baden-Württemberg and Emilia-Romagna have been able to develop

¹⁰ Landabaso, M (1997) The promotion of innovation in regional policy: proposals for a regional innovation strategy, *Entrepreneurship and Regional Development*, Vol. 9.

¹¹ Florida (1995) Toward the learning region, *Futures*, Vol. 27:5

flexible systems of support which are responsive to the needs of firms and the type of RTD activities pursued by them. Old industrial regions will face different problems, rooted in an old industrial infrastructure and human capital systems oriented perhaps more to mass production or mono-company structures. Whatever the starting point, the basic underlying principle remains the same ie. that regions must 'learn' what is required in order to move forward.

How can regions 'learn' and find a way through the complexities of support for innovation? One possibility is through the incorporation of a more strategic framework for action. This can allow an initial 'step back' to assess the structure and process of RTD and innovation support in the region and then the design of a framework built on greater understanding which can more effectively target concrete measures. A process of strategy review can subsequently highlight changes which have occurred and allow the necessary adaptation to ensure continued policy effectiveness. Such a strategic approach would encompass a number of key factors.

- *Regional economic and technology-related context.* In order to recognise the threats and opportunities which exist in the region for technological change and innovative activity, a good understanding of the regional socio-economic context is necessary. This will help the targeting of support, particularly that which is sectoral in nature or focuses on particular clusters of industries.
- *Supply side analysis.* It is necessary to understand the existing regional institutional system to identify areas characterised by duplication and overlap or where co-operation or rationalisation could take place. This includes both RDTI suppliers such as universities and research centres and RTD support organisations such as technology transfer centres and innovation consultants. A clear overview is a prerequisite for the region to 'learn' and adapt its institutional structures to correspond better with business-led requirements.
- *Demand side analysis.* A real grasp of the nature and needs of the demand side, particularly the enterprise base, is becoming increasingly important. Much recent research has pointed to the fact that many of the problems in stimulating innovation may lie in the demand side, a factor highlighted in the 8th Structural Fund report. Examples include the varying RTD constraints experienced by different types and size of firm, the wider but related management and strategic problems encountered particularly by SMEs and issues such as entrepreneurial mentality.

The placing of technology support in a regional institutional context offers the chance to develop a more strategic approach for RTD policy implementation¹². Equally, however, the integration of strategic RTD thinking is beneficial for regional development policy to help target intervention in this area more effectively. "In the absence of a regional strategy to promote innovation that

¹² OECD (1997) *Diffusion of Innovation to Small Firms in a Regional Context*, Background Document to Conference of Modena, Working Party No. 6 on Regional Development Policies, Organisation for Economic Co-operation and Development, Paris.

can help to create an ‘innovative environment’ through more and better co-operative links between those working in innovation in the region, an injection of public funding into the system will not result in a substantial increase in the contribution made by that funding to regional economic development”¹³.

4. STRATEGIC RTD APPROACHES IN OBJECTIVE 2 AREAS: SPECIFIC RTD STRATEGIES

In designated Objective regions, the SPD represents an important regional planning document encompassing a range of measures to promote regional growth. In the light of the above discussion, it is useful to identify the potential for integrating a more strategic RTD approach within an Objective 2 programme and whether it could improve the effectiveness of this type of measure. In light of the impending preparation for the next round of Structural Fund programmes, consideration of options in this area is timely.

Two particular approaches will be highlighted here as possible ways of bringing together regional development and strategic RTD planning. The first example examines the integration of a separate, specific, regional-level RTD strategy and uses the experience of regions which have undertaken a so-called RITTS, RIS or RTP initiative. The subsequent section looks at the incorporation of more incremental strategic RTD planning.

4.1 RITTS/RIS Initiatives

One example of the development of distinct, regional-level RTD strategies is the European Commission’s RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructures) and RIS (Regional Innovation Strategies) initiatives. This is not the only type of RTD strategy developed by European regions, and there are many examples of such strategic approaches undertaken outwith the remit of the Commission. However, the RITTS/RIS example provides comparative experience from which wider lessons can be drawn which are of relevance to the integration of any type of distinct regional RTD strategy.

The RITTS and RIS actions are designed to provide an opportunity for regional authorities, in partnership with relevant actors, to develop a set of actions based on a common understanding of the regional drivers and barriers to innovation (see box). This understanding is based in a thorough assessment of the regional innovation system including not only technology issues but also management, financial, commercial, training and organisational ones.

The first set of 19 RITTS projects, financed by DG XIII, operated between 1994-96 in conjunction with eight pilot projects financed by DG XVI under Article 10 entitled Regional Technology Plans (RTP - a forerunner to the current RIS actions). Over the period 1996-98, a further 42 regions are undertaking this exercise: 19 RIS and 21 RITTS actions. The RIS exercises must be undertaken in regions where most of the population are eligible for Structural Funding. Indeed, one of the key aims of the initiative is to improve the effectiveness with which the Structural Funds are used for promoting

¹³ Landabaso (1997) The promotion of innovation in regional policy: proposals for a regional innovation strategy, *Entrepreneurship and Regional Development*, Vol. 9

innovation. While this condition does not apply to the RITTS, it is still the case that almost 90 percent of both RITTS and RIS are being (or were) carried out in regions eligible under one or more of the Structural Fund Objectives. 56 percent of current (48 percent of completed) RITTS/RIS projects are being undertaken in Objective 2 regions¹⁴.

RITTS and RIS Initiatives

Objectives

- to improve the capacity of regional actors to develop policies which take into account the real needs of the business sector and the strengths and capabilities of the regional innovation system.
- to provide a framework within which the European Union, the Member States and the regions can optimise innovation policy and infrastructures at regional level, focus on the needs of SMEs and promote co-operation between relevant actors.

Main steps

- building a regional consensus for the initiative among all key players from the public and private sectors and R&D community;
- analysing the main technological and industrial trends affecting the region;
- assessing the strengths and weaknesses of regional firms (their innovativeness; barriers and problems; their use of existing services etc);
- assessing the existing regional innovation capacity and supply (including higher education/training establishments, government support measures, technology transfer institutes, innovation related services of economic development organisations etc);
- defining a strategic framework on the basis of the above analysis, including the identification of concrete measures and projects; and,
- establishing a monitoring and evaluation system.

The following discussion focuses on four of the *IQ-Net* regions which have undertaken a RITTS/RIS/RTP exercise and where a degree of integration has taken place with the Objective 2 programme. These are the two UK regions, Industrial South Wales and Western Scotland, Ångermanlandskusten in Sweden and Lower Austria. Descriptive presentations of the main elements of the RTD strategies are provided in Annex I. The aim of the discussion is to highlight key lessons to be learned from the experience of integrating the RTD strategy with the Objective 2 programme, highlighting the impact on strategic thinking and practical initiatives in particular.

Case Study 1: Industrial South Wales and Western Scotland, UK

The experience of the two UK regions, Industrial South Wales (ISW) and Western Scotland, is instructive as the Scottish RIS exercise was able to

¹⁴ CEC (b) (1997) *Practical Guide to Regional Innovation Actions*, Commission of the European Communities, Luxembourg.

benefit to a certain extent from lessons learned in the Welsh case. The Welsh RTP was one of the eight pilot initiatives and the final report was submitted to the Commission in March 1996. This timing was not ideal in terms of integration with the ISW Objective 2 programme. The strategic discussion for the latter took place in the summer of 1997, a full 16 months after the completion of the RTP. The strategic thinking behind the RTP was still relevant and thus could feasibly guide the Objective 2 RTD actions. However, this time delay was more problematic in terms of using Objective 2 money to fund any of the 66 projects outlined in the RTP.

In terms of the strategy, the 1997-99 SPD does incorporate some of the underlying thinking of the RTP. The rationale for Priority 4 (Increasing Innovative Capacity of SMEs), for example, builds not only on the 1994-96 SPD but also incorporates the results of the RTP. It highlights the key elements identified in the RTP and recognises the importance of on-going monitoring and evaluation of the strategy's impact. Importantly, it also mentions the consensus built up through the RTP exercise, focusing on the process of producing an environment which can stimulate innovation as much as the details of actual support measures. Further, innovation is recognised as a horizontal priority throughout the SPD and "actions under Investment in the Valleys (Priority 2) and for SMEs (Priority 4) throughout ISW will be directed by the principles of the RTP".

The practicalities of the integration process were not completely smooth. As the RTP was developed, the Steering Group recognised an opportunity to use the strategy as a framework for decision-making in this area. This framework, therefore, would have potential to influence the funding direction of the Objective 2 programme as well as corporate strategies. Regular reports were sent by the RTP Steering Group to the Objective 2 Programme Management Committee but with only erratic response. A key link was the presence of a member of the RTP Steering Group on the Structural Funds Monitoring Committee which helped to raise the profile of the RTP and ensure that it was taken seriously. However, formal links were not established. This also meant that, while integration of the strategic RTP thinking was ultimately included in the 1997-99 SPD, the process was more random, relying on personal contact and individual motivation.

The integration into the Objective 2 programme of projects and practical initiatives identified in the RTP was less successful. This was related largely to timing. The completed RTP Action Plan fell between two Structural Fund programming periods, too late to be included in the 1994-96 SPD and too early for projects to be funded through the 1997-99 programme. This was unfortunate as the identification of other funds for supporting RTP projects was sometimes difficult and Objective 2 support would have been well-suited. However, a member of the RTP Steering Group, who is also the Technology Programmes Manager in the Welsh Development Agency, sits on the project selection committee for Priority 4 of the 1997-99 SPD. This is positive in a number of ways. It ensures that the RTP has a 'voice' in the implementation of the Structural Fund programme and also gives confidence to applicants who know of his involvement with the RTP.

The Strathclyde RIS project was able to learn from the Welsh experience and the link between the RIS and the West of Scotland Objective 2 programme is much more explicit. Critically, the responsibility for managing and carrying out the RIS project lies with Strathclyde European Partnership, the same body which implements the Objective 2 programme. This direct link was considered crucial both for tapping into an existing, well functioning partnership and for linking the RIS to a potential source of funding for its implementation. One of the key lessons learned from the Welsh experience is that the *process* of establishing a strategic approach and building a regional consensus between and within the public and private sectors is central to creating a culture for innovation. By exploiting the pre-existing partnership through SEP, some of the work in establishing such a consensus was already achieved and immediate agreement was possible to set up a Steering Group for innovation including key public sector agencies, higher education institutions, local authorities, Scottish Enterprise and Local Enterprise Companies and the private sector.

The direct link has meant that *both* the strategic thinking and the practical implementation of the RIS can be incorporated into the 1997-99 SPD. The RIS exercise covers an 18 month to two year period starting at the beginning of 1997. This means that the thinking and results can feed directly into the implementation of the Objective 2 programme. Priority 2 (Applied Research, Technological Development and Innovation) of the 1997-99 SPD states that the RIS “will provide a strategic policy framework for investment to improve the innovative capacity and competitiveness of the regional economy. A range of required projects/actions will be identified within this framework, which will have been agreed by the partnership”. In the description of certain sub-measures, once again the results of the RIS are awaited, ensuring that there is continuity between the two programmes. In Measure 2.1, for example, ERDF support is to be provided for applied research centres based around key technologies or innovative SME clusters, “as identified by the RIS”. Annex 3 of the SPD details the activities and scope of the RIS exercise.

Further, the SPD states that “it is anticipated that a number of the projects/actions identified by the process of preparing the RIS and on its completion will be supported through the 1997-99 Programme”. This explicit link written into the Objective 2 programme, together with the link already mentioned in the management structures of the two initiatives, should greatly improve the implementation options for the RIS. However, both regions made clear that perhaps the optimal way forward would be to top-slice a designated amount of finance for the specific implementation of projects developed through the RIS/RTP. This was done in Limburg from regional government funds, for example, for the implementation of their RIS. In the Strathclyde RIS case, while the SPD states that projects can be supported through the Objective 2 programme, the applications still have to go through the standard Structural Fund procedure in competition with other projects. Where the strategic RTD-related thinking has fed directly into the SPD, as is the case in the West of Scotland, it would be more effective and potentially faster to have a designated package for projects identified through the RIS which could bypass this other procedure but still be in line with the development priorities of the SPD.

One issue to emerge from both Wales and the current Strathclyde RIS is the importance of the process of encouraging innovation and of creating an innovative culture. The process of building consensus among regional agencies and of links to the private sector through the identification of strategic aims is of critical importance and should become one of the principal long-term benefits. The strategy itself will need to evolve as circumstances in the region change. Its continued evolution, indicating a willingness by the region to 'learn' and move forward, will be facilitated if agencies have experience of working together, highlighting good practice and discussing relevant issues as they emerge. The current secondment of one of the SEP programme managers to the RIS is a practical example of how the process of learning and network building is being supported.

Another commonality between the Welsh and Scottish exercises has been the emergence of a broader definition of innovation. In the Scottish RIS, for example, initial discussions with companies led to the following definition: "Innovation ultimately results in the development of improved products, services and production processes. The innovative company has the desire and the capability to exploit new ideas, methods and technologies, faster than other companies". It was recognised that innovation is difficult to define and can encompass a wide range of activity of varying levels of novelty from incremental to radical innovation. The importance of non-technology specific factors such as the existence within a company of people with the right attitude, culture and ambition also widens the understanding of innovation and the necessary drivers required to promote it.

Case Study 2: Ångermanlandskusten, Sweden

The experience in Ångermanlandskusten is another example of the positive impact of a more direct link between the RITTS exercise undertaken in the region and the Objective 2 programme. The RITTS study was carried out over the 1994-95 period, at the same time as the Objective 2 SPD for 1995-99 was being drafted. The more extensive RTD-specific scope of the RITTS study led to the identification of certain factors which might not have been picked up in the more wide-ranging SWOT analysis for the SPD. These included, for example, the importance of stimulating technological *demand* in the north of Sweden where the principal role of RTD policy had previously been on more traditional supply-side issues. The RITTS study informed the policy emphasis of the RTD section of the SPD and promoted the goal of ensuring that the genuine needs of companies were met through the programme's priorities and measures.

As is the case in both Wales and the West of Scotland, there was a direct personal link between the RITTS and Objective 2 personnel. The motivation for the RITTS emerged from meetings between the four northern County Administrative Boards (CABs) which met on an *ad hoc* basis to discuss RTD issues. The representative of one of the CABs later became the programme manager for the Objective 2 programme.

The RITTS initiative has also influenced the type of projects which are funded under the Objective 2 programme. The RTD strategy has been referred to as the "theory to hang projects on" and appears to have acted as a practical way of increasing awareness of RTD issues within the Objective 2 programme and

the region more generally. The influence which the RITTS thinking has had on the programme has meant that it has functioned not simply as an isolated technology-related study, but rather as an analytical tool-kit against which the usefulness of RTD projects can be assessed. The RITTS study, for example, questioned the type of assistance being awarded to companies and advocated a pro-active mentoring approach particularly for SMEs. This emphasis was subsequently taken on board in the development of the measures and project selection criteria for the Objective 2 programme. The boxed example illustrates a key initiative which has been influenced by the RITTS project and has impacted the approach to RTD within the region.

**Regional Technical Centre Kramfors (LTCK)
Kramfors, Sweden**

LTCK is a technology transfer and innovation centre operating in the town of Kramfors in the Ångermanlandskusten Objective 2 region. It was established in 1988 with substantial national financial support shortly after the closure of Saab-Scania's cable wire harness operation in the town. It is funded by local companies purchasing its technical services and aims to co-ordinate resources in industrial development, education and training for the benefit of engineering companies in the county of Västernorrlands.

The current activities of the LTCK include:

- training in skills relevant to mechanical engineering eg. CAD/CAM and CNC technology;
- customised corporate computer training;
- use of networks to help Västernorrlands companies in areas such as the co-ordination of logistics, marketing, international partners search, development projects etc;
- video conferencing facilities; and
- co-ordination of EU funded projects (including a number funded under the Objective 2 programme).

LTCK is linked to the nine other technical centres in Västernorrlands. Each centre offers a well defined area of competence with a distinct common focus on the creation of successful clusters within the local economy. The RITTS project, which involved the technical centres, has had the positive effect of promoting more regular co-operation and meetings between the individual technical centres in the region. Following RITTS recommendations, the centres meet on an on-going basis every 6-8 weeks to discuss the co-ordination of their activities. This has improved co-operation between them and led to initiatives such as joint marketing exercises, shared promotional literature and collaboration when dealing with technology providers outside the region.

A further benefit of the RITTS project for LTCK was to increase their awareness of the need to cater their services more specifically to the needs of the members. In the place of general CAD/CAM courses, for example, the centre now runs customised courses for individual clients and groups of customers.

Case Study 3: Lower Austria

The final example is the current Lower Austrian RIS. The RIS initiative, which covers the whole of the administrative *Land* of Lower Austria, started in March 1997 and will be completed towards the end of 1998. Given that the Austrian Structural Fund programmes cover the period 1995-99, the results of the RIS will come too late to influence the current Objective 2 programme in any real way. However, there is a specific understanding that the RIS will feed directly into the strategic planning and practical implementation of the next Objective 2 programme. It is expected that the RIS study will identify a range of possible projects and initiatives of differing scope and timescales. Some of the more immediate pilot projects may be initiated within the second phase of the RIS but some of the longer-term and larger scale projects could be included in a new Objective 2 SPD. Equally, other sources of finance for implementation, including related European RTD programmes, are currently being investigated.

This concern with identifying finance for the implementation of the RIS is an important one. As highlighted above, the Welsh RTP had some difficulty in identifying sufficient financial sources to implement the projects identified in the RTP. This was also a problem, for example, in the RITTS project which was carried out in Lower Austria South, a sub-region of the current Lower Austrian RIS. This study was completed in mid-1996 but subsequently experienced difficulties in financing some of the identified projects. A direct link to the Objective 2 programme would have been one clear possibility to help overcome this problem. However, the general lack of information and co-ordination, as well as the relative inexperience of the region in operating EU programmes, were among the factors which prevented this.

One interesting development to emerge from the Lower Austrian RIS exercise is its direct application to areas which are not specifically RTD-related. Certainly, the RTD component of the new Objective 2 programme will be strongly oriented towards the strategic thinking, as well as specific initiatives, which may come from the RIS exercise. Indeed, current *Richtlinien*¹⁵ may be adapted, or new ones drafted, to reflect RIS results and allow more targeted support both generally and through their inclusion in the new Objective 2 programme. However, the process of the RIS exercise has also highlighted the importance and relevance of the innovation theme to wider areas. This understanding has resulted in the commissioning of an additional study, involving one of the consultants involved in the RIS, to examine the issue of innovation across the broader industrial and commercial support spectrum. The results of this study will directly influence the direction of this part of the new Objective 2 programme, including areas such as new firm formation and the attraction of new businesses.

4.2 On-going strategic Influence

The incorporation of a separate, specific RTD strategy is not the only way of engendering a more strategic approach to technology and innovation

¹⁵ *Richtlinien* are the regulatory guidelines which govern the operation of each individual assistance measure within the Austrian business support system.

development at regional level. A second approach is to stimulate on-going debate on the RTD preconditions and requirements in the region which feeds into the decision-making and debate in wider related areas, including the drafting and implementation of Structural Fund programmes. The experience of North Jutland in Denmark and Aquitaine in France are more illustrative of this approach.

Case Study 4: North Jutland, Denmark

In North Jutland, the focus on technology and innovation has been apparent since the initiation of the first major EU funded programme in the region in the mid-1980s and has been influential throughout the various subsequent Structural Fund activities. The on-going input is based on a process of dialogue and consultation at regional level between politicians, social partners, the regionally-based university and other interested parties. In addition, organisations which have been established, sometimes co-financed with European monies, have later contributed to this debate thereby keeping it relevant and up-to-date. The North Jutland Science Park (NOVI) is a key example of such an organisation which has been influential in the region (see box)¹⁶.

The Objective 2 programmes, as well as other European funded initiatives such as RENAVAL, have given technology and innovation support a central role both through direct support for knowledge projects and investment in individual firms and through new innovation-related services. The new Business and Innovation Centre North is a recent example of the latter and provides a strategic partner for entrepreneurs and SMEs trying to initiate or expand industrial development projects. The technology theme is considered a horizontal one throughout the Objective 2 programmes, as well as being promoted specifically in particular priorities (eg. Priorities in the 1997-99 SPD for implementation of product and process innovation and for strengthening innovation, competence and reorganisation).

A number of factors contribute to the more on-going and incremental approach to the strategic consideration of RTD in North Jutland. First, the wider context and environment for innovation and technology development is a positive one. Technology development and innovation are an important national focus in Denmark and the European programmes, and STRIDE in particular, have encouraged the regional innovative culture through the support of networks between business and research in the region. As this process encourages a higher level of technological capacity in the region, new initiatives are able to use this new basis as their starting point.

¹⁶ Damborg, C and Halkier, H (1998) *Development Bodies, Networking and Business Promotion in North Jutland*, European Studies Series of Occasional Papers, European Research Unit, Aalborg University.

North Jutland Science Park (NOVI)
North Jutland, Denmark

NOVI was established in 1989 and has become a key player in the industrial and technological development of the North Jutland region. NOVI was set up using ERDF co-finance but is run on a commercial basis. The central objective of the NOVI is to act as a knowledge mediation catalyst, principally in co-operation with the regional Aalborg University.

NOVI has a unique construction within Denmark, combining three main fields of activity:

- *Science park*

NOVI offers 55,000 square metres where high technology companies, entrepreneurs and company development teams can establish themselves. In addition to the function of the park as an 'innovative environment', a range of specific services are offered including management consultancy, administrative support and available meeting and conference rooms.

- *Science broker*

NOVI provides an important link between science and research institutes, focusing particularly on Aalborg University, the hospitals of North Jutland and the North Sea Centre and Hirtshals. The underpinning philosophy of this work is an understanding of the interactive process of transfer and qualified innovation consultants are used to promote dialogue and co-operation between industry and researchers. Close contact is established with departments and individuals in Aalborg University who keep NOVI informed of research developments and act as a pool of expertise for potential technology transfer opportunities or joint projects. There are currently over 70 co-operative arrangements between companies and departments in the University. Promising joint projects have the potential to be funded through NOVI's venture capital function. NOVI receives an annual payment from the Ministry of Science to support its role as science broker.

- *Venture company*

NOVI has been approved as a development company by the central government and invests risk capital in new ideas and projects. Two principal types of investment are undertaken:

- initial investment for starting a company in an 'incubator environment' provided by the five Danish science parks (including those outside North Jutland) - particular priority is given to innovative and unique ideas with promising business potential;
- growth investment in existing firms for development projects of both a technological and commercial nature, including marketing activities. This investment is more regionally-focused and is limited to firms located either in the NOVI or the neighbouring Funen science parks.

The development company status increases the risk-bearing possibility of NOVI because the government covers 50 percent of the investment loss should a company fail. NOVI has in the range of ECU 8 million in net investment capital.

Second, many of the Objective 2 activities are linked specifically to regional institutions such as Aalborg University and NOVI and their experience, as well as that of other technology and innovation providers, is taken into account in programme design. These key regional organisations played a direct role in the five sectorally based working groups established to identify priorities for the 1997-99 Objective 2 programme. Third, the treatment of innovation and RTD development as a horizontal theme was evidenced by the SWOT analysis carried out on innovation, entrepreneurs and finance, based on a separate analysis of the industrial structure of North Jutland. Results of the analysis confirmed that there was a well-functioning system of business support and that firms were, in general, responding positively in terms of innovation. It further influenced the specific direction of RTD measures in the SPD.

The approach in North Jutland is one characterised by a continual openness to the integration of RTD elements and the consideration of innovation within the entirety of the regional development programmes. The long practice of consultative involvement of the main innovation and technology actors has meant that the importance of these elements is almost taken for granted. The central involvement of NOVI and Aalborg University, the two main regional organisations promoting research, technology transfer and innovative activity, both in strategic discussion and implementation of the Objective 2 programme means that a distinct innovation strategy may not bring much value added to the process. The drafting of a more formal strategic framework might be beneficial with a particular remit eg. the framework for the development of industrial clusters.

Case Study 5: Aquitaine, France

The process in Aquitaine has many similarities with the North Jutland approach. The region's RTD strategy has developed over time and is not encapsulated within a single formal document. The framework is responsive and coherent and able to change in line with regional circumstances and technology-related opportunities. It has been a long-term process, with an initial network for technology diffusion being established in the region in the early 1980s involving key regional actors and with the aim of listening to business needs and establishing interactive contact. On-going partnership can be seen between key players in the RTD field and particularly the so-called 'Band of Four' ie. the regional council, the two state offices in the region supporting research and technology and business development respectively (DRRT and DRIRE) and ANVAR, state technology agency. These organisations form a strategic group for technology transfer issues in Aquitaine and provide a forum to ensure their activities are complementary and allow the development of more focused approaches to regional RTD policy. Annual prioritisation meetings, also including the university in Bordeaux, means that longer running initiatives can be developed while at the same time remaining responsive to changing technologies and opportunities.

The regional council is an important player in the 'Band of Four' and has a tradition of pursuing pro-active RTD and innovation policies which are tailored to regional characteristics. The council works within the framework of the national and regional Contrat de Plan, which contains a strong research and technology transfer component - both specifically and horizontally. This

positive regional and national framework influences the direction of the Objective 2 programme, linking it to the wider RTD objectives covering the region as a whole.

A RITTS study has also been carried out in the region and, in the context of on-going strategic RTD planning, served more to confirm and add direction to some of the existing thinking. This is particularly notable in the regional approach to structuring industrial and technological expertise into 'pôles' (see box).

Against this background, it is not surprising that the Objective 2 programme was strongly oriented towards RTD and innovation and its approach drew clearly from the regional dialogue, focusing on areas of identified need and potential. Continuing the process of strategic planning in the region, the Structural Funds were viewed as an opportunity to contribute to the region's longer term competitiveness through the provision of an environment responsive to innovation and advanced business needs. The objective of refining the region's framework conditions and improving the medium- to long-term environment for co-operation and innovation was central to the direction of the RTD measures included in the programme.

The Pôles Approach Aquitaine, France

The pôles, or centres of excellence, represent a major strategic element of the Aquitaine technology strategy and have been supported through the Objective 2 programme (for two specific examples see Annex II). The underlying rationale is to achieve a tight focus in order to optimise the current and potential assets in the technology field and avoid spreading resources too thinly. In highlighting and developing specific fields, synergies have been realised and the fields have gained a greater visibility.

The foci selected are structured around both new and established areas where major change was evident. The RITTS study was used to verify this approach and appraise the foci chosen. A slight reformulation was suggested and the pôles which emerged comprise:

Sectoral foci:

- health sector
- agro-industries/nutrition
- forestry, wood and papers

Multi-sectoral foci:

- materials
- electronics/IT/modernisation

Each pôle is an open network structure rather than a more formal and closed one. A carefully selected *animator* is appointed for each pôle with the objective of structuring its development and ensuring its efficient operation. The animators themselves do not offer specific services, but rather provide an interface between firms and technology providers/schemes. They also promote links between firms and between the supply side organisations.

The role of the animator is centrally important. They explore demand in their sector through direct contacts with firms and business service organisations. This is supplemented with an analysis of available research facilities, projects and services which meet the identified needs. The needs can then be more creatively matched to supply, responding to the real situation. The animators stimulate information loops, passing information back to business service organisations on projects which are underway. This function ensures that more actors are better informed and possible networks can be more easily identified.

On the basis of the analysis of business needs and opportunities, the animators are in a position to influence research providers and make them more responsive to firms. The autonomy and core functions of the research institution are never questioned but the animator can seek to influence specific issues such as highlighting the applied relevance of the research. Equally, animators can influence firms through, for example, thematic seminars which bring firms together and at which discussion or the presentation of potentially relevant new technologies can be undertaken.

Where specific projects are identified, animators help with the process of project development, of building project teams and identifying possible funding sources. The principal advantage for the animator is his/her wider view and the ability to see opportunities to involve other actors or other routes to promotion.

4.3 Points of Comparison

The above examples illustrate two possible ways of integrating a more strategic approach to RTD in Objective 2 programmes. They are, in many ways, interlinked and it is not the case that regions can easily 'choose' between them. In some regions, the initiation of a specific strategy development process may lead to the emergence of a more incremental and on-going approach to strategic RTD planning. In other regions, the benefits of having a specific strategy may be such that future development remains based around a distinct strategy document which undergoes a periodic process of review. In regions where there is already a process of on-going strategic thinking, a strategy may still be considered necessary to make the philosophy more visible and accessible to external onlookers and, more importantly, to regional firms.

It is important to remember that the overall aim of the two approaches is the same ie. the provision of strategic information which gives a better understanding of both the specific regional deficits and opportunities in terms of RTD/innovation and of the wider policy environment. This understanding then provides the basis for informed and targeted RTD measures, helping to ensure that the Objective programme has a genuine impact in this field. How this is achieved will depend to a great degree on the starting point of the region in question.

The development of a specific strategy may be of particular consequence in regions where the issue of strategic RTD thinking is underdeveloped. In these cases, the process of putting the strategy together and co-ordinating the disparate regional actors for common goals can be as important, if not more so, than the actual strategy which emerges. The process can act as a catalyst in starting to create the culture which is so necessary for any longer-term development in this area. The integration with any regional development

programmes at this stage may be weaker because of the inevitable learning curve which is involved. However, the programme's RTD measures can be oriented towards the promotion of co-operation, thus supporting the wider attempts to create a more co-operative environment for innovation and technological development.

The situation in many regions is one where there is a degree of debate at regional level on RTD related issues and some *ad hoc* co-operation, but no real sense of coherent purpose. The input of a strategy into this kind of environment should help to build on existing areas of co-operation but provide a much more clear-cut framework within which both supply organisations and firms can orient themselves. Explicit issues such as the division of competence and common goals can be addressed and opportunities or problems which might otherwise have been missed can be highlighted. Where this process is successful, a more permanent environment of co-operation might result. The informing power of such a strategy for regional development programmes is also much higher, clarifying where measures could be targeted or specific areas of co-operation which could be supported.

There are some regions where the level of on-going strategic debate is already positive and where considerable integration of RTD and wider regional development programmes already occurs. This may negate the necessity for the development of a specific strategy, given that the process of promoting collaboration and dialogue is already well advanced. There is the potential danger of 'strategy overload' and the expending of resources on an exercise which results in little value added. However, the opposite danger in regions such as this is that of intransparency, where good co-operation and dialogue exists but is relatively self-enclosed and beneficial only for those 'in the know'. An explicit strategy can help to cast light on the functioning of the system and provide a clear document with which to inform regional firms. An explicit strategy can also be useful in providing a concrete starting-point for review and evaluation to ensure that the system remains responsive to change. Equally, the development of a strategy can be more targeted, looking at the existing framework conditions specifically in the light of a particular aim such as, for example, a cluster-building approach. Where this is the case, there are again clear links to wider regional development programmes.

The initiation of an RTD related strategy and the attempt to promote more strategic thinking at regional level does not automatically result in technological progress and the emergence of a stimulating innovative environment. This cause and effect relationship is broken by a range of factors including seemingly petty issues such as whether key individuals can work together. Co-operation and networks are not just theoretical concepts but must be worked out in the realities of stressed working environments, individual personalities and power struggles. Issues such as these should not be overlooked and can be influential in understanding whether the development of a specific strategy might be required to provide an element of initial compulsion. This is particularly true where external consultants are involved (a condition of RITTS exercises) who can provide a degree of objectivity in the analyses. The time component should also not be forgotten - building trusting relationships and changing mentalities cannot be achieved

overnight and persistence (again usually in key individuals) may be one of the most important components in ultimate progress.

5. SUMMARY AND CONCLUSIONS

In conclusion, a number of key issues emerge from the consideration of ways to implement a more strategic approach to RTD within Objective 2 programmes. These are drawn from the theory and the practical experience of regions and comprise both summary points and challenges.

- *The process of strategy building is of integral importance*

The support of innovation is an extremely complicated area. A very wide range of factors influence the ability of a firm to innovate, including internal company issues, lack of finance, inability to access or apply new technologies, mentality issues and difficulties in achieving effective co-operation. No single set of measures will be able fully to meet all the needs. More important for longer-term development in this area is the creation of a regional environment which supports and promotes innovative activity and where innovation is viewed positively. Where there is consensus and clear direction from the main research providers and support institutions, this is far more likely to emerge.

The process initiated by the decision to draft a regional RTD strategy is a key contributor to the establishment of such an environment. The process of consultation, consensus building, co-operation promotion and bringing together aims, objectives and ideas under a common framework is essential to the longer-term viability of RTD and innovation-based development. Such a process can be difficult to initiate in the absence of a definite goal, such as the formulation of a strategy document. Once this process has been established, however, the opportunity exists to strengthen and build upon it. The regional circumstances will inevitably change, influenced by external trends as well as the implementation of national and regional level policies and strategies. This will correspondingly require change in strategic direction or incentives and this will be much more easily facilitated when the practice of consultation, consensus and co-operation is already in place. Establishing this climate of dialogue and co-operation has been one of the main benefits of the Structural Fund programmes in many Member States. This experience can potentially be repeated in the RTD field, with positive ramifications for co-operation with wider regional economic development initiatives.

- *Evaluation and review are critical components of a strategic approach*

Technology, by its nature, is always changing and progressing. This means that the systems of support put in place to promote technological innovation must be similarly flexible and open to revision. Regions must be able to learn and 'un-learn' to ensure that opportunities are grasped and competitiveness maintained. An RTD strategy is not a static entity and, while certain elements of it may remain valid over longer time periods, other components will become out-dated or require a change of focus. Where this does not occur, there is a danger of stagnation or apathy and identified measures, including those integrated into wider programmes such

as the Structural Funds, may become off target. Similarly, if outdated strategic objectives are used as the basis for RTD measures in an Objective programme, the effectiveness of the policy intervention is undermined.

This process of evaluation and review must be applied to both distinct strategies and also to situations where the strategic input is less formal. An example of the former case is the recent review of the Welsh RTP, which resulted in the 1998 Review and Update document. The review looked at the strategic direction and operational achievements of the original RTP and assessed them in the light of changed conditions and future challenges. The overall objective, for example, shifted from a focus on consensus-building, where considerable progress has been made, towards creating a culture of innovation. Similarly, the review reaffirmed certain innovation issues, but also highlighted new aspects, and introduced new emphases in the operational priorities of the RTP. In many cases these were refinements or extensions of original priorities eg. focusing on sub-regional cluster building within the priority for supply chain and network development. Finally, four new areas were identified for particular implementation attention.

The thematic evaluation of the RTD priorities of the Aquitaine Objective 2 programme is an example of reviewing a more on-going strategic input. The relatively integrated nature of RTD support in the region meant that, while the evaluation remit was for a specific programme, it was in effect looking much wider at the regional RTD policies which influenced its format. Indeed, the review provided a form of summary of the current position of the region in relation to RTD thinking and implementation. As in the Welsh case, the review was able to confirm the direction of certain actions and encourage further support for them and highlight areas which are currently underdeveloped eg. networks. The review recognised the importance of the 'ground preparation' laid by the traditional on-going collaboration in the RTD area within the region. One interesting conclusion was that there was a need to monitor the capacity of the regional innovation environment and that the possibility of achieving this through an extension of the Structural Fund monitoring system should be explored.

- *Effective implementation is imperative*

The implementation of definite projects and initiatives, rooted in the strategic thinking which has been developed, is an essential complementary component to the process of creating a positive environment for innovation. The strategy is not an end in itself, but rather a means for promoting more targeted and strategically-rooted activity within the region. The ideal scenario is a continual feedback loop involving the experience and results of innovative activities influencing the strategic thinking of the research support and supply institutions which, in turn, is modified to support new activities more effectively. The visibility and reputation of the strategy, and the key organisations behind it, will also be improved where clear and tangible results can be shown.

The RITTS/RIS/RTP methodology specifies the inclusion of an implementation plan incorporating concrete measures and projects. A key element of implementation, however, is necessarily related to finance.

Identifying possible sources of funding at an early stage for measures which emerge from the strategy is a critical task. In the area of RTD and innovation, delays can be particularly damaging. Effective co-operation between the proponents of the RTD strategy and wider regional development agencies, including Structural Fund programme managers, is necessary in this regard.

- *Explicit co-ordination should exist between Objective 2 programmes and RTD strategy*

The paper has highlighted potential advantages available to Objective 2 programmes where it is possible to tap into the wider RTD strategic framework and thinking offered by a distinct strategy document. However, the time and resource pressures associated with planning and administering a Structural Funds programme mean that achieving co-ordination is not always a simple matter. Experience has shown that integration has sometimes resulted from the most tenuous links or coincidental meetings. This is not an effective basis for longer-term, mutually reinforcing co-operation.

It is important, therefore, that the need for co-ordination is recognised both by the team undertaking the RTD strategy and the Objective 2 programme management. Where this is not the case, the move for co-operation can become one-sided and this is difficult to maintain. Identifiable benefits exist both from the RTD and regional development perspective and this can help to promote a positive atmosphere for communication and co-operation. Personal links between the two areas are important (and have sometimes been the only ones) but should not be relied upon solely. If too much of the linkage depends on one individual, the possibility of a significant breakdown in communication should they leave is relatively high. Good personal links are certainly to be encouraged, but formal co-operation through, for example, mutual representation on key committees is an essential complementary action. In cases where a good co-operative environment develops in the region, the need for such formal links may diminish as they become more assumed.

Effective RTD policy development and implementation requires the commitment of all interested parties at grass roots level, the careful tailoring of policy and a pro-active approach to implementation. The successful integration of the strategic thinking and resulting measures of a distinct RTD strategy into Objective 2 programmes is one way of, at least partially, meeting these requirements. The wider strategic understanding of the conditions and requirements for RTD support can ensure an improved tailoring and definition of the nature and direction of the RTD priorities of the Objective programme. The measures which emerge from the RTD strategy, which should be based on a better understanding of the genuine needs of business, can be financially supported or complemented by the Objective 2 programme. Finally, the successful process of strategy development should, by its nature, promote and engage the commitment of relevant parties. The exact nature of the strategic intervention will vary between regions but consideration about how this type of approach could best be adopted would appear in the majority of cases to be a worthwhile exercise.

ANNEX I

Welsh Regional Technology Plan (RTP)

The RTP was developed between 1994 and 1996 with the aim of creating a framework for public resource allocation in innovation and technology transfer in Wales. The Welsh Development Agency, Cardiff Business School and a range of related Welsh organisations were among those involved in the development of the RTP.

The overall objective of the plan is *to develop a consensus on a strategy to improve the innovation and technology performance of the Welsh economy*. Six priorities were identified for realisation of successful innovation in the region:

- the development of an innovation culture
- profiting from global innovation and technology
- supply chains and networks
- high quality business and innovation support
- finance and innovation
- education and training.

Four areas are identified for particular attention for the implementation of the plan:

- a communication strategy to promote the importance of innovation
- an action programme to address the issue of R&D expenditure in firms
- a programme of actions to implement RTD priorities within the Welsh business support structures
- co-ordination with representatives of the Welsh sub-regions to relate the RTP to local needs and circumstances.

The Action Plan was launched by the Secretary of State for Wales in June 1996. Over 60 practical projects were identified as part of the implementation process, divided into three groups: flagship (for immediate launch; committed (where there was commitment for implementation) and challenge (projects still requiring a backer). Over 50 of these have now been implemented to some degree.

- A recent review of the RTP has been undertaken resulting in a *Review and Update 1998* document which specifies the new overall objective of *creating in Wales a culture which encourages and values innovation*. The review identified the achievements of the RTP since its implementation in 1996 and areas in which the original plan needs updating.

West of Scotland Regional Innovation Strategy (RIS)

The RIS project in the West of Scotland was initiated through the recognition by the main partner organisations of the importance of technology and innovation in increasing competitiveness among SMEs. The initiative was launched in March 1997 and is set to run until September 1998.

The strategy development will involve a number of stages including the completion of a regional economic profile and an assessment of both supply and demand requirements in the region. Pilot projects are to be initiated based on issues raised by firms and the implementation of the strategy is designed to encourage networking. The principal aims include:

- increasing the number of innovative companies in the region.
- improving technology transfer between research, education and industry, and
- improving support systems and the environment for innovation.

The strategic objectives for the region are to:

- encourage the establishment and survival of SMEs having the potential for growth through innovation;
- improve the competitive position and performance of existing companies through innovation and the application of new technologies;
- maximise the advantages to the region's economy arising out of inward investment, firmly embedding them in the economy and encouraging the growth of higher level functions;
- exploit the region's strengths in key business sectors;
- maximise the support available to businesses from the region's Further and Higher Education institutions and improve the linkages between them;
- provide a strategic framework for an effective and coherent network of innovation support services;
- improve the capacity of industry to innovate and benefit from new technologies, including the encouragement of mutual support and exchange of experience between companies; and,
- promote innovation, creativity and technological understanding in the context of lifelong learning.

One of the first steps in the development of the RIS was a *Company Needs Analysis* which involved the contribution of over fifty companies in identifying what companies within the area covered required to help them innovate. It identified management culture, market orientation, process alignment, technology, management of development process, finance, supply of skills and networks and partnerships as key areas on which the levels of innovation are dependent.

Lower Austria Regional Innovation Strategy (RIS)

The development of a RIS in Lower Austria started in March 1997 and is anticipated to finish in September 1998. The focus will be to create networking between various regional actors involved in different aspects of innovation. One of the principal aims is to structure the supply of innovation more towards the demands and requirements of companies.

The specific objectives are:

- increased co-operation on innovation (between companies, between scientific institutes and companies, between public bodies and companies);
- a higher number of research and development projects in the region;
- an increase in the commercial exploitation of research and development results; and,
- the creation of a better awareness of innovation.

To achieve these aims, the necessary pre-conditions have to be provided, including:

- the creation of a communication platform for innovation;
- consolidation and co-ordination of all innovative forces in the region;
- the establishment of a qualitative network for communication; and,
- the efficient use of support funds.

The development of the strategy will involve the following phases:

- phase 0 - defining and structuring the project
- phase 1 - analysing the supply and demand for innovation supporting measures;
 synthesis of the analysis results; formulating recommended action
- phase 2 - establishing the strategy and formulating a catalogue of measures; consensus finding over measures to be carried out; execution of pilot projects

The company analysis carried out under the RIS, based both on written survey and interview work, aimed to identify the requirement of firms for innovation services and their utilisation and opinion of them. The results included the following findings:

- there is a generally low level of information about the technology transfer supply possibilities in the region;
- there is a high demand for assistance measures and strategic consultancy but a negative image of private consultants;
- the mentality among many regional firms shows a degree of dependence of public sector assistance;
- the networking between firms and between firms and public sector R&D supply organisations is relatively poor; and,
- previous pro-active measures and initiatives by regional organisations are viewed very positively by regional firms.

North Sweden RITTS

The Northern Sweden RITTS was officially completed in February 1997, although implementation had already begun in mid-1996. The motivation for the initiative came from the meetings of the four northern County Administrative Boards to discuss, on an *ad hoc* basis, the RTD issues affecting the region. The results of the RITTS had wide regional, as well as national coverage, and were incorporated into a range of other programmes/studies including the Objective 2 programme and a report by the Ministry of Trade and Industry on co-operation between SMEs and universities.

The regional analysis undertaken as part of the first stage of the RITTS project strongly emphasised the importance of stimulating technological demand in the region. The Action Plan which emerged from the second phase included two main areas:

- competence development in small and medium-sized companies
 - pro-active mentoring
 - support for recruiting a first academic
 - subsidised consultancy
 - networks
- increase the transparency of the support system
 - networks between actors
 - marketing of the system

Examples of projects initiated by the RITTS exercise include:

- a network of small technology support providers who met with the aim of getting to know one another better and identifying possibilities for co-operation on larger projects; and,
- the launching of experimental initiatives to stimulate technology transfer to SMEs as part of an effort to increase the transparency of the national-level technology support infrastructure.

ANNEX II

A component of the Materials Pôle

The adhesive technologies centre, University of Bordeaux

A university department specialising in adhesive technologies forms part of the Pôle Aquitaine Matériaux-Mécanique (PAMM). Firms with an adhesive-related development problem from a very wide range of sectors are referred to this centre.

The centre has existed for the last 15 years as a university department specialising in adhesives and undertook occasional projects on applied problems on an *ad hoc* basis for firms. However, it became clear that there was potential to structure the department's applied work as part of the Materials pôle and thereby better exploit a unique facet of regional expertise to the benefit of business. Applied adhesives problem solving was not already being effectively addressed: glue makers conduct R&D but are too financially interested in the outcomes, resource and information centres do not have research facilities, and the pure research centre (in the form of the department under discussion) was insufficiently organised or resourced to provide effective, comprehensive responses, although it clearly had potential.

As a result, the department's work was structured into three strands of (pre-existing) activity - pure research (as before), training on adhesion and assembly (as before), and applied research (the section of most relevance to business - and mainly concerned with problem solving, rather than the development and then diffusion of new technologies). The applied section is now more visible externally, and has distinctive staff, with distinctive tasks (and also with increasing business awareness).

It has become clear that the new strands - even although they effectively existed before - are filling a very real gap in their new form. In 18 months, they have undertaken ca. 100 projects. They have two staff (soon to be three) who liaise with firms on projects, and pay eight people on in-firm training placements. Half the centre's applied income comes from large firms (some international), and half from helping SMEs, who form 66% of their clients. Among the SMEs they help, most have no technological links or research facilities - precisely those which need outside help. Solutions are developed which are adapted to the technological level of the firm and thus are of most practical benefit. Two-thirds of their applied activities are already self-financed, and a third comes from subsidies (including from the ERDF). They are paid, for example, for the instances on which they provide business advice.

The restructuring would not have taken place without the ERDF (obtained through the DRRT). It has enabled a pre-existing facility to be capitalised upon for the benefit of business by enabling a dedicated staff to be established. Such an initiative needs stable, dedicated personnel to drive it.

**A component of the IT Pôle
Labri, University of Bordeaux**

Labri is an applied research unit specialising in IT/software. It has a total staff of c.140 people (10 administrative, c.50 PhD students, and c.70 researchers). The unit has five departments, each spanning pure/blue sky to applied research.

Research programmes have been redefined within the framework of the Pôle to emphasise their relevance and include units working in very new fields eg. graphic computer applications. The five resulting research units are served by a common 'valorisation' unit which was considered necessary when it emerged that they all functioned in broadly similar ways and faced common liaison problems with business. Most researchers, for example, work on Unix computer systems, while most firms have PCs running Windows based software. In response to this, the valorisation unit established a common Windows based computer lab to help familiarise researchers with the packages used by business. This lab, and other joint facilities also help researchers to network amongst themselves.

Objective 2 funding has been used to purchase a state of the art processor on which to develop and test new software for different projects. Such a processor is necessary (a) to facilitate the software development process which is very slow and (b) to anticipate the speed of future hardware so that a software product, once ready, is not already out of date. In order to remain current, they have to work with hardware which is around five years in advance of that which is widely available.

The majority of projects have been undertaken with small firms where the real centre of decision-making can be reached rapidly. There have been examples of projects with larger firms which have been started but have later failed when they were blocked in the companies' management hierarchy. Three examples of successful projects are given below.

Project: Images for architects

This project was carried out in conjunction with a firm of architects and is designed to improve the package used by the architects to create 'virtual'/computerised models of their proposed buildings. The firm was using the 'industry standard' package which, while sufficient, was not at the leading edge of current technological capabilities. The firm wanted to improve the package to gain competitive advantage and this was achieved through collaboration between the firm and Labri. A Labri PhD student was placed in the firm to pursue the project. The project has had good results and the resulting package has gained the firm productivity benefits of 30 percent in some areas, as well as an edge in the quality of the output.

Project: Interior design 'visualisation' package

A firm making and selling wallpapers wanted to improve its point of sale marketing by allowing people to visualise the products in their homes. They wanted a software room simulation system which, for cost effectiveness, could be installed on a standard Pentium PC and which could produce near photo quality images of customers' choices of decorating schemes in less than five seconds. The available systems required too much computer capacity and produced very crude images.

Labri were approached for help and, after 18 months work, produced a prototype. Using 3D technology, the package enables users to select a room to decorate, specify the style of the room they have and then choose the decorating schemes. Once the prototype was approved, the product was worked on to the point of commercialisation, using Objective 2 assistance. A firm has now been set up to market the package, thereby creating seven jobs. The package is currently in use in Germany and France.

Apart from the considerable unexploited market opportunities for the current package, there are also further potential product developments. A laser robot, for example, could be loaned to customers to scan a 3D image of the room they are decorating, thus allowing them to carry out simulations on their own house. It is also hoped to develop a 'virtual reality' simulation which customers could use to stroll around using a headset. The mini-screen technology used in virtual reality headsets is currently somewhat behind but Labri will be prepared to carry out the relevant research once the technology develops. Ideas can be suggested to potential clients although they can clearly only be taken up when the market demand exists.

Project: Medical imaging

A third successful project was the development of a software system giving doctors remote access to 3D scanner results in order to diagnose patients at a distance. This project was initiated when a medical unit which was interested in this procedure made contact with them. The resulting product, whose development was ERDF co-financed, is being produced and marketed by a new firm with eight employees. Several PhD students were taken on by the new firm, which is seen as a major success, and two people have been recruited to market the system. The firm has now been taken over by Fuji international, and could be marketed by Fuji globally. Current follow-on research is looking for a replacement technology for endoscopies which would enable images to be created without an internal procedure.