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MIRIAD
Managing and Infusing Research Investment And
Development

D7.2 Synthesised Documentation

November 2007



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Section 1 – Introduction

MIRIAD (Managing and Infusing Research Investment and Development) is a European 6th Framework project designed to benchmark regional R&D assets in four European regions. These four regions consist of:

- Yorkshire and the Humber in the UK
- Central Macedonia and East Macedonia/Thrace (including Thessaloniki) in Northern Greece
- The Western Turkish region from Istanbul (inclusive) to the Greece and Bulgarian borders of Turkey
- The South Eastern Bulgarian region from Sofia (inclusive) to the border with Greece and Turkey, including also the Bulgarian Black Sea region.

One of the key outputs of the MIRIAD project is the production a regional R&D strategy for each of the four regions in order to stimulate investment in R&D and contribute to their economic development and promote their competitiveness.

In order to produce an effective R&D strategy for each of the four regions a number of activities were undertaken. To briefly summarise, these activities involved analysing regional economic performance through examining public available data sources on a number of indicators; examination and evaluation of regional policy interventions; developing and presenting future scenarios for regional development, surveying the knowledge assets of regional SMEs; surveying regional knowledge supply; and involving regional policymakers in a discussion of the findings and obtaining views on the future requirements for the regions.

The aim of this report is to provide a synthesised overview of this process, in order that the MIRIAD methodology can be adopted by others through a visible and transparent process. The rationale behind each stage is outlined and how each step contributes to the overall project is clearly detailed. Therefore, this document serves as an outline for future projects of similar scope and intentions, and offers a detailed review of how to undertake such a task.

This report is presented in three sections; Section 2 outlines the background to the project and details the aims and objectives in greater depth. Section 3 presents the policy background and outlines the analytical framework underpinning MIRIAD in terms of regional development and R&D. Finally, section 4 presents the instruments used for data collection. In order to view the resulting regional intervention reports and final regional R&D investment strategies please visit the MIRIAD website (www.miriad.org).

Section 2 – Overview and Background to MIRIAD

Aims & Objectives

The major objective of the MIRIAD project is to stimulate policy interventions focused on raising levels of R&D investment in regions across Europe. In summary the key aims are:

- To formalise policies with regional and national government aimed at improving levels of R&D investment by businesses, government and higher education.
- To establish tools by which SMEs are able to identify and measure their knowledge assets through developing a range of benchmarking and scorecard instruments.
- To establish a regional mutual learning platform for promoting the trans-national exchange of practices towards enhancing regional R&D investment.
- To facilitate the transfer of good practices in terms of participation to EU funded research, links and co-operation between SMEs and research performers.
- To establish and launch an R&D Investment Strategy for each of the regions that is complementary to the existing policy initiatives and activities already being undertaken.

In addition to these aims, the project was designed to examine the current and potential knowledge capability of SMEs and the scope for improving their competitiveness with a focus on the development of knowledge transfer and business alliances strategies within supply chains and across industries and markets. The project was also designed to assess the barriers and opportunities for the expansion of SMEs, draw out the specific knowledge deficits and/or surpluses within SMEs and identify and understand the likely intermediaries and institutions (particularly universities) required to be involved in establishing knowledge transfer platforms. These further aims were all intended to increase our understanding of the processes best suited to stimulating engagement from SMEs in each region, thereby tailoring the interventions to each region.

One of the most significant features of MIRIAD is the fact that the demand and supply of knowledge are both incorporated into the analysis. In the past, R&D investment policies and strategies have focused either on stimulating transfers/spillovers or facilitating knowledge absorption. R&D investments are a function of a region's ability to transfer, spillover and absorb knowledge; therefore this project integrates all these aspects, aiming to address both the supply and demand-side barriers associated with R&D transfer, absorption, and investment.

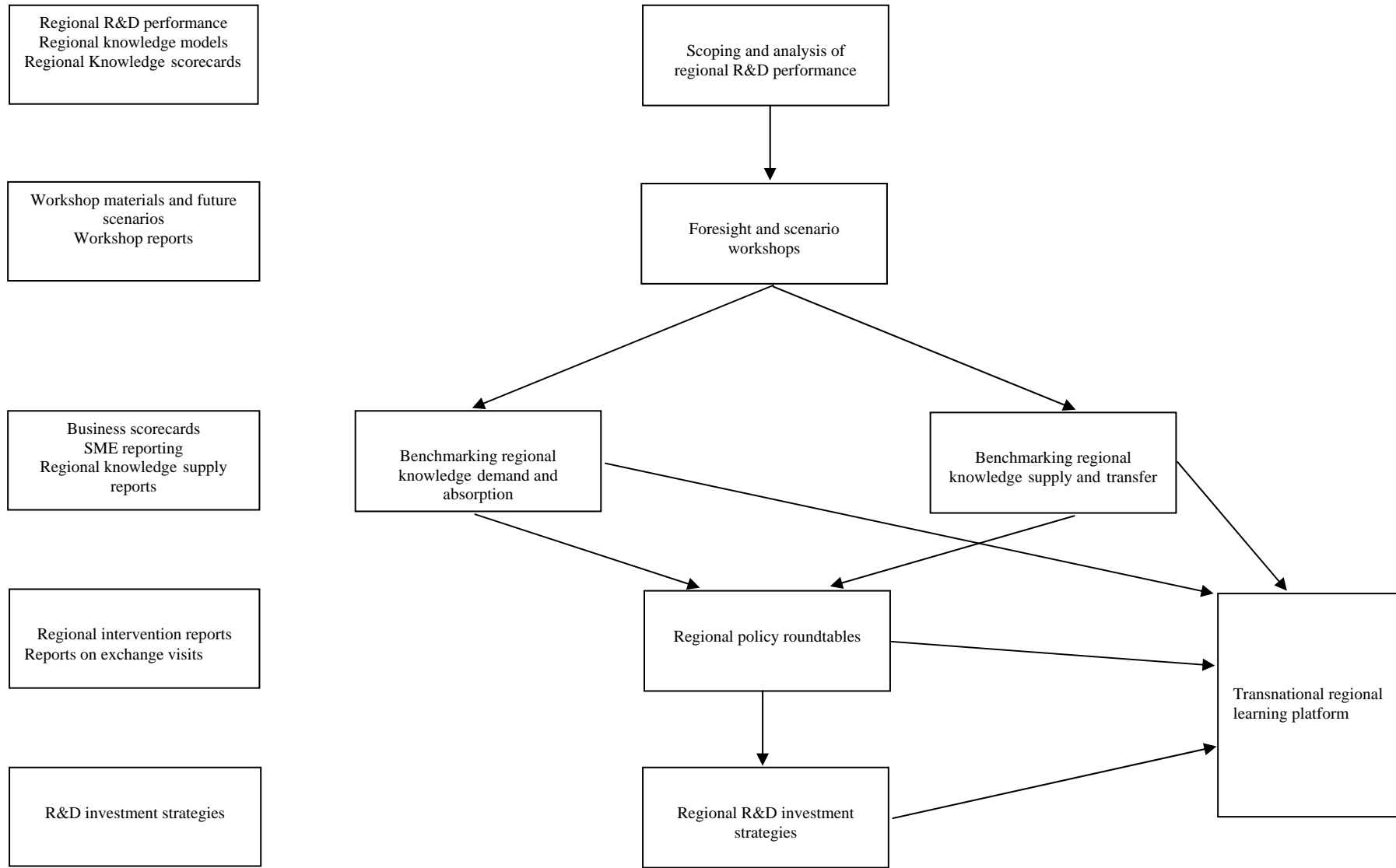
The project contributes to raising the level of R&D investment and expenditure across Europe, through:

- Gaining access to SME thinking and assisting regional policymakers in their quest to develop a more knowledge-based economy and climate.
- Explaining the benefits of accurate knowledge asset measurement. For example, measurement provides organisations with a better overall understanding of their business that may be communicated to a variety of stakeholders.
- Promoting relationships and boosting regional research activities.
- Catalysing the cross-fertilisation and transfer of relevant policies and strategies across the participating regions.

Project Structure

In order to achieve the aims outlined above, a series of workpackages were developed and undertaken. These workpackages each contribute to the overall aims, with each one designed to accomplish a particular task. Each workpackage concluded with the production of a report, all of which are listed in Appendix 1 and are publicly available through the project's website (www.miriad.org). Exhibit 1 provides a diagrammatic outline of the various workpackages of MIRIAD and illustrates how each piece of work feeds into the next and how they all contribute to the production of the final outputs, the a regional R&D strategies.

Exhibit 1: The Structure of MIRIAD



The first workpackages were designed to collect and analyse publicly available data on the economic performance of each region. This not only allowed each region's economic performance to be assessed and benchmarked in terms of relative performance compared to the EU average, but also provided a starting point for the construction and examination of future scenarios for the development of the regions. This stage of the project also involved examining the regional strategies in place for promoting knowledge based economic development, specifically:

- The development of regional knowledge assets;
- The transfer of knowledge between those organisations involved in knowledge creation and those organisations requiring knowledge for innovation;
- The creation of infrastructure to support knowledge intensive industries;
- Business support policies; and
- Other economic development initiatives.

The second phase of work, creating future scenarios for each region, was achieved through extrapolating trends in the data collected in phase two. This allowed us to assess the scale of the interventions necessary to promote economic growth and develop regional competitiveness. At this point, the scenarios and the associated interventions necessary to achieve the outcomes suggested were presented to regional policymakers in a series of workshops across the four regions. This enabled us to obtain not only feedback on our work so far but also to receive the input of policymakers into the project in order to ensure that the policymaking community 'bought into' the MIRIAD initiative.

The third phase of work was to collect data from SMEs and knowledge providers in order to benchmark their knowledge assets. This was an important part of the project as it is these organisations which influence the performance of the regional economies as a whole. Therefore, understanding the strengths and weaknesses of these organisations is paramount to the production of the final strategy. In order to collect data on these organisations, two scorecards were developed which were specifically designed to generate data on the various facets of the organisations and present an overall picture of knowledge creation and transfer among the regions' firms and knowledge creating organisations.

As previously noted, throughout the project the policymaking community was involved as much as possible in order to gain feedback on the work undertaken. In order to present our data from the first three phases of the project, a policy 'roundtable' meeting was held in each region. The meetings were intended provide a formal setting for the presentation of the data obtained and also a forum for the discussion of the results and their implications for the regions' economies. As the task of producing a strategy for intervention requires the cooperation of the policymaking community, in order that any recommendations are implemented, this formal meeting played an important role in ensuring that this could be achieved.

The final strategies were all presented to the regional policymakers at the end of the project. The formal launch served to ensure maximum publicity for the strategies among the policymaking community so that it may contribute to their work in promoting knowledge based economic development. In addition, the completed strategies were widely distributed among regional policymakers to promote understanding and debate on the subject.

Section 3 – Policy Background and Analytical Framework

This section gives an overview of the policy issues that form the basis of the project. These are briefly outlined in the following section in order to present the main factors of the analysis. The final part of the section presents the analytical framework underpinning MIRIAD - the triple helix model of regional development which emphasises the contribution of firms, government and knowledge creating organisations in promoting knowledge-based economic development.

Policy Background

The economic analysis of regions has become widespread as attention has turned away from analysing the dynamics of national growth. As a result a wealth of work has been produced based on the region as the unit of analysis and focussing on and examining the economic development of a location through factors such as competitivenessⁱ, governanceⁱⁱ, innovationⁱⁱⁱ and social capital^{iv}.

Economic development is one of the main priorities for governments across the world; indeed the performance of the economy during a government's time in office comes to define that government's performance. However, regional research highlights the fact that economic development is not uniform across space. Typically, economic growth is not shared evenly between the regions of one nation. Therefore, a single economy may feature a number of 'core' regions which perform exceptionally well and are highly competitive as well as a number of 'peripheral' regions characterised by lower levels of growth. Thus, there may be a need to promote development in these lagging regions in order to ensure that living standards are consistent across the regions.

One logical solution to the problem of regional disparities would be to ensure that transfer payments are made from prosperous regions to less prosperous regions in order to ensure the benefits of growth are spread more evenly. Yet, this approach does not tackle the underlying causes of the disparity. Instead it merely serves to prolong the disparity and does not promote any convergence. As an alternative, economic development policy is directed towards promoting the development of lagging regions in order to ensure *real* convergence between the regions based on tackling the underlying problems and building a solid economic base.

A number of factors feature prominently in regional economic development policy, these factor are viewed as important for competitiveness and growth and are common policy features across the industrialised world. These factors include:

- Innovation;
- Research and Development;
- Knowledge Networks;

- Knowledge creating Institutions; and
- Knowledge Intensive Industries.

It is these factors are at the heart of the MIRIAD project. The remainder of this section discusses each these factors, giving a brief outline of their role in economic development.

Innovation

After being neglected by mainstream economic thought for much of the Twentieth Century, innovation has reached the top of the policy agenda as advanced economies attempt to compete with countries such as China, India and Eastern Europe, which are able to produce low cost manufactured goods. Thus, the future for the modern economy is viewed as competing through knowledge-intensive, high value-added, niche industries, which rely on a highly skilled and highly trained workforce. No longer is global competition about possessing traditional resources, i.e. labour, land or capital, to mass produce goods but is instead focussed on utilising the knowledge assets to produce high technology products and services.

Innovation is typically defined as the introduction of new products or services, the adaptation of existing products or services, the modification of production methods or the development of new production techniques. In short, innovation is about change and development rather than standing still. Innovation promotes productivity growth as new methods of production are 'trialled' in order to improve the efficiency of the production process, as well as developing new and increasingly sophisticated products. Improving the efficiency of the production process means that the same resources produce a higher number of goods, therefore increasing the capacity of an economy to trade for other goods and growing the economy overall.

Research and Development

Closely linked, but distinct, from innovation is research and development (R&D). R&D involves undertaking work in order to increase the understanding of a discipline, technology or knowledge area. The difference between R&D and innovation is that it is not necessarily undertaken for commercial reasons, but instead adds to the general body of knowledge. The timescales for R&D may also be longer. However, this is not to say R&D cannot be commercialised but the end result may require further work to be of commercial use.

R&D promotes economic development in the same way as innovation. R&D involves the discovery of new ideas, materials, compounds or properties of existing materials as well as new applications of existing technology. While the lead time may be longer, the knowledge developed can be applied to improving efficiency of production, developing new products and processes, as well as increasing the overall capacity of the economy.

Knowledge Networks

Innovation and successful R&D activities require knowledge. While it can be argued that undertaking these activities generates knowledge it can also be argued that a certain level of knowledge is required in order to undertake these activities. The existence of knowledge networks enables firms to access knowledge they are not able to generate themselves, an especially important factor for smaller firms which may lack the resources, be it financial or human capital, to generate large amounts of knowledge internally.

Knowledge networks are comprised of firms interacting with each other as well as other institutions and exchanging knowledge through these interactions. There are two distinct types of knowledge network: knowledge contact networks and knowledge alliance networks. Knowledge contact networks are formed through the interaction of firms and other organisations/institutions in the course of relationships based on trading goods and services. Thus, trading with other firms may involve the sharing of knowledge on various facets of the business, observing the production process of another firm or adopting another firm's products into their own product. The second type of knowledge network, the knowledge alliance, is based on formal collaboration between firms. Typically these alliances are based around a specific project aimed at developing a new product or service jointly between the partners involved.

Knowledge Creating Institutions

It is increasingly recognised that innovation is a more systemic than atomistic process in that it is not an activity that a firm undertakes alone. As outlined above, knowledge networks are an important aspect of innovation. It must be noted however that as well as firms there are other knowledge generating institutions that are relevant to this process. One obvious example is universities, which undertake R&D activities and can be important sources of knowledge to firms. As well as universities, public sector research institutes or laboratories may perform a similar role, as do private sector institutes.

As well as specific knowledge for innovation, there are also a wealth of business support organisations which offer more general advice centred on aspects of running a business, e.g. health and safety advice, recruitment, IT support or advice on developing new markets. These organisations may be found in both the public and private sectors; typically the public sector organisations are government funded and the private sector organisations may be industry associations or chambers of commerce.

Knowledge-Intensive Industries

Another key component of a successful regional economy is the presence of knowledge-intensive industries. Knowledge intensive industries are those in which knowledge is regarded as being the most important input, or where ICT or advanced

production techniques are the norm. In terms of manufacturing, aerospace engineering, pharmaceuticals are biotechnology cited as common examples, as they do not rely on mass-producing products with unskilled labour but their output typically involves a high level of work in R&D. As well as knowledge-intensive manufacturing, knowledge-intensive services are also of importance. These industries include accountancy services, solicitors, financial intermediation and computer related services such as software and applications.

Successful regions typically have a significant proportion of knowledge intensive industry, for example Silicon Valley or financial centres such as London or New York. These industries generally produce high value-added goods and services which make a significant contribution to the regional economy. Also, the smaller the niche for the product then the less likely there will be any other firms producing something similar; thus, niche products can dominate the world market.

Analytical Framework: The ‘Triple Helix’

For the purposes of this research, the analytical framework employed was the ‘triple helix’^v model. The ‘triple helix’ model of economic development seeks to promote increased interaction across three broad institutional spheres, namely: government; business/industry; and higher education. Triple helix approaches to development are considered as capable of producing new forms of collaboration and partnerships to drive regional development. Such approaches operate through a range of regimes and basic tendencies in their formation, which have the capacity to evolve over time. These approaches are divided into three distinct types:

- the ‘statist’ triple helix, whereby government is the dominant actor and the role of universities is largely restricted to teaching activities, whilst industry is based around national champions operating large scale projects;
- the ‘laissez faire’ triple helix, whereby the role of government is limited to addressing perceived market failures and universities are the providers of basic research and human resources, whilst industry is predominately linked through market interactions; and
- a triple helix regime based on the transition to overlapping spheres of state-industry-academia through the establishment of hybrid organisations, such as intermediaries, innovation and incubation centres.

While one regime is not necessarily superior to any other, it is the third approach based on overlapping spheres which has come to the fore of policymaking in many advanced economies, with success determined by the ability to establish effective hybrid organisations and actions, especially relating to the extended remit of universities. Of course, many of the globe’s leading regions, such as Silicon Valley, have implicitly operated a successful triple helix development model for many years. However, the triple helix formulation has also gained significant currency as an approach for improving the fortunes of economically lagging regions.

Section 4 – Data Collection: Types and Instruments

In order to undertake the empirical work outlined in section two and assess the importance of the factors outlined in section three, a programme of data collection was required. The data collection had three distinct phases:

- The collection of publicly available socio-economic data;
- The collection of SME data; and
- The collection of data on knowledge suppliers.

The three phases were designed to collect data on specific aspects of the regions. The collection of publicly available was required to produce an overview of the regional economies and assess their socio-economic characteristics. Increasingly national governments are making a wider range of data available at the regional level, allowing a greater depth of analysis. One of the most important aspects of undertaking a comparative analysis of a number of different regions, especially those in different countries, is the number of indicators that are available for all regions in the study. For MIRIAD eight core indicators were identified which were available for all regions. These provided an interesting comparison of the regions, although in this case expanding the number of indicators was constrained by the availability of regional data in Bulgaria and Turkey.¹

Another of the key pieces of analysis was the benchmarking of the knowledge assets of SMEs and knowledge suppliers within the region. In order to obtain these data two scorecards were developed as survey instruments for SMEs and relevant knowledge generating organisations. These scorecards were designed to obtain data on a number of factors including the importance of various sources of knowledge, the interaction through which knowledge is shared, the types of knowledge transmitted and the ability to generate knowledge.

The remainder of this section outlines the data collection process in more detail for each of the three types.

Publicly Available Data

The collection and analysis of publicly available data was an important element of the analysis as it allowed the benchmarking of the regions. The data gathered included:

- GVA per capita
- R&D expenditure

¹ The collection of regional data is relatively new for these countries but is developing

- Productivity
- Unemployment
- Economic activity
- Earnings
- Innovation and patent activity
- Knowledge transfer
- Skills and training
- Employment in knowledge-based sectors.

This data was then used to present a comprehensive picture of the socio-economic make-up of the regions. However, despite the ability to access a wealth of data, the core of our analysis required data on SMEs themselves. Exhibit 2 presents an example of the data collected during this phase of the project. The data outlines various socio-economic indicators for the Greek regions of Central Macedonia and East Macedonia/Thrace. An identical table was produced for each region (see Regional R&D Performance Reports).

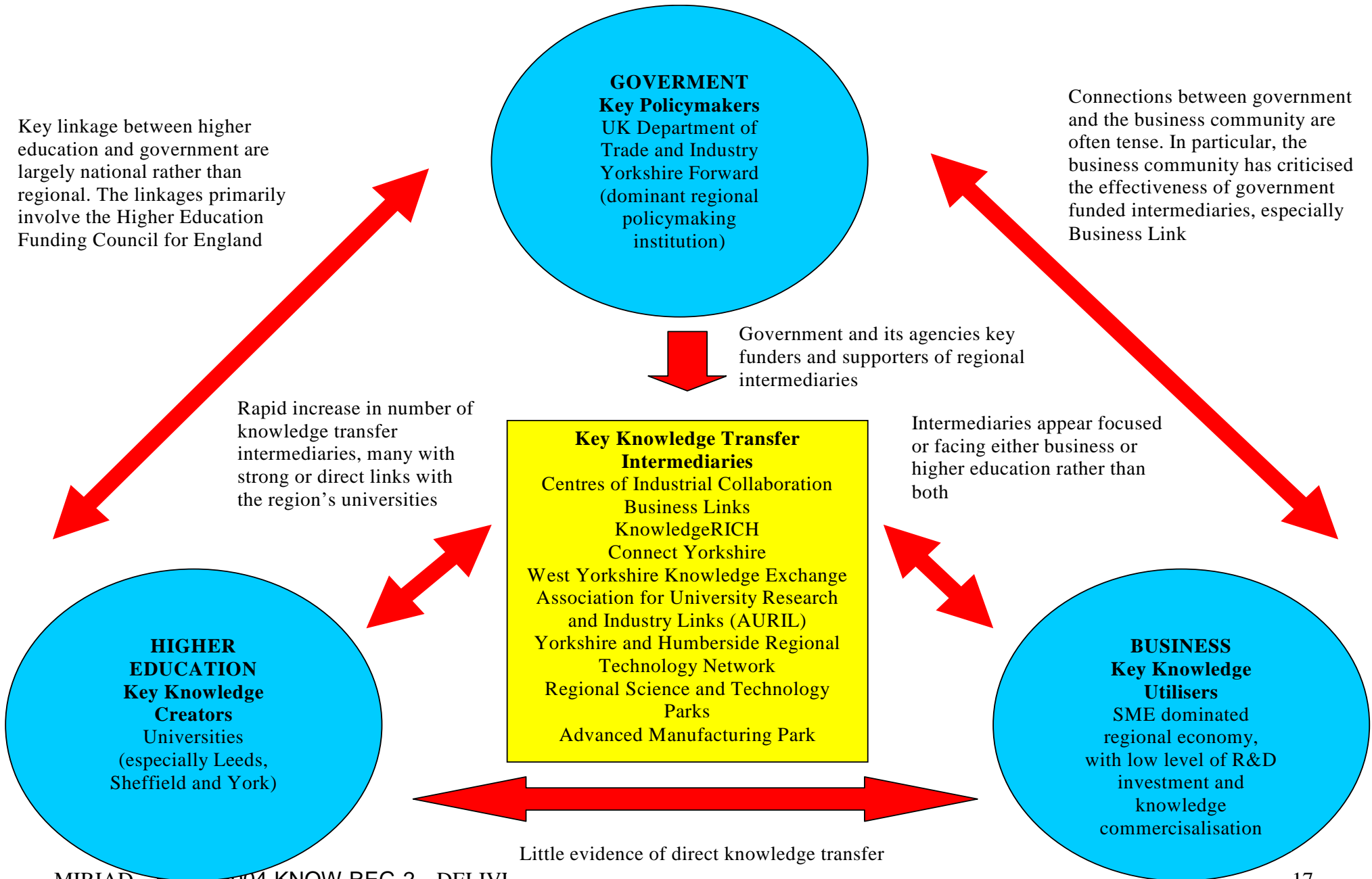
Exhibit 2: Example of Data on Key Competitiveness Indicators

Indicator	Central Macedonia	East Macedonia & Thrace	Greece	EU-25 Regional Mean Average
Gross Domestic Product per Capita (2002, Euros)	16,710	12,522	16,425	20,685
Labour Productivity (2002, Euros)	48	35,7	45.9	45.5
Unemployment Rate (2004, %)	10.1	11.9	10.3	9.0
Economic Activity Rates (2004, %)	N/A	N/A	51.9	57.5
Mean Gross Monthly Earnings (2002, Euros)	1,238	1,103	1,278	1,887

Source: Eurostat

In conjunction with the collection of data on the socio-economic features of the regions we also examined the existing policy initiatives relevant to facilitating regional R&D and innovation. This was then used to identify the key policymakers in each region with respect to R&D policy. A number of face-to-face interviews were then carried out with these policymakers in order to model the regions in terms of the triple helix framework outlined in Section 3 (see Appendix 2 for the outline interview schedule). A representation of the triple helix model for the Yorkshire and Humberside region is presented by Exhibit 3. The diagram highlights the links between the three sectors, government, universities and the business sector as well as the key characteristics of each sector. The report 'Regional Knowledge Scorecards' contains a triple helix representation for each of the four regions.

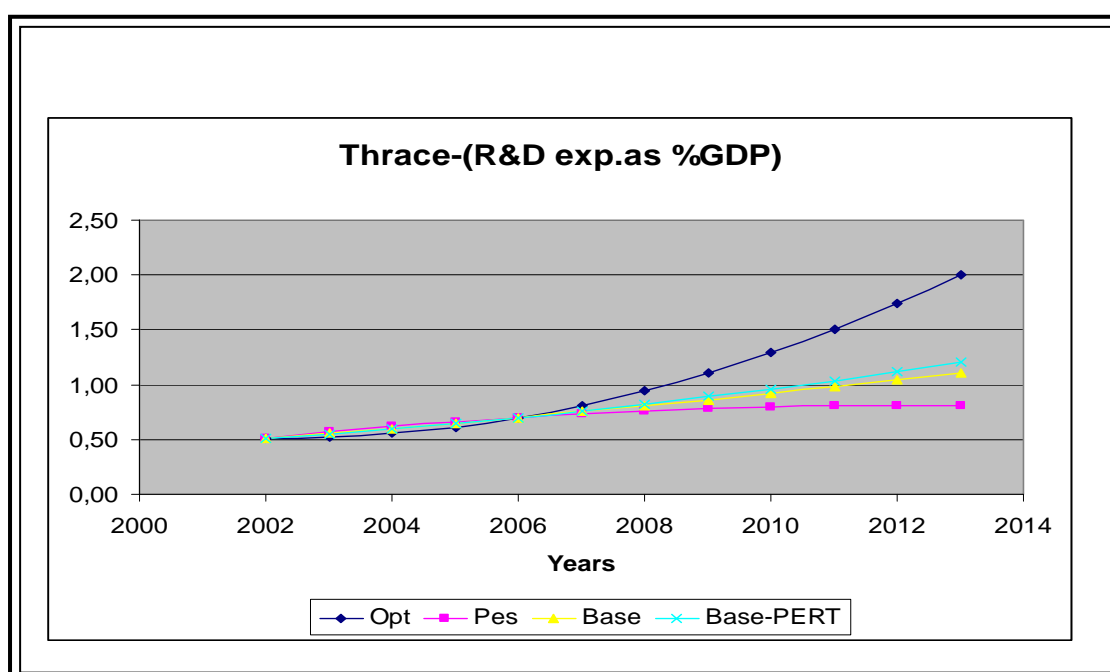
Exhibit 3: Triple Helix Representation of Yorkshire's Knowledge Flow Model



The data collected during this stage of the project was then used to forecast future trends for each region, specifically future trends in terms of R&D expenditure as a proportion of regional GDP. Three scenarios were constructed; a pessimistic case, a base case and an optimistic case. The pessimistic case involved R&D expenditure staying constant, thus declining as a proportion of GDP as GDP increased; the base case involved an increase in R&D expenditure of 5% per annum; and the optimistic scenario involved an increase of 10% per annum.

Exhibit 4 outlines the three scenarios with respect to the Turkish region of Thrace. As the data shows, only the pessimistic case presents a marked increase in R&D expenditure and convergence with more prosperous European regions. This was also the case across all regions in the project, continuing the current trend or a small improvement to the current trend is not sufficient to make significant changes to the regional economies.

Exhibit 4: Example of the Three Scenarios for the Thrace Region



The patterns highlighted by these scenarios were then examined and the policy responses required to promote development along these lines were noted. Therefore, we created and presented a powerful tool that not only showed the impact of the changes in R&D expenditure and also put forward the policy initiatives required to facilitate these changes. This was then presented to regional policymakers in order to obtain their feedback and highlight these results and participate in the regional policy making process.

SME Data

The central tool for obtaining SME data was a business scorecard (See Appendix 3 for the scorecard). This scorecard was developed in order to obtain data on the knowledge

assets and resources of the SMEs within the regions. These resources were divided into the following groupings: human resources, intellectual assets, practices and routines, physical resources and external relations. Other data on participation in knowledge contact networks, knowledge alliance networks, the dynamism of these networks, types of knowledge obtained, barriers to development, interaction with regional knowledge suppliers and firm performance data. In total, the scorecard contained 28 questions.

This scorecard was administered to SMEs identified as being in knowledge-intensive sectors and the respondents were encouraged to follow-up with a discussion of the key issues they face, in order to add to richness to the data. The size of the sample for each region was 50 SMEs, broadly in line with similar studies undertaken within this field. This size of sample enables meaningful analysis to be produced from the data while ensuring the data could be collected within the timeframe of the project.

The questions were mostly quantitative, with the respondent rating the importance and effectiveness of a number of different factors. This approach allowed the analysis to uncover which resources were under-utilised, i.e. those which are more important than effective, and which were over utilised, i.e. those where effectiveness outstripped importance. The scorecard also collected data on the importance of various sources of knowledge both within and outside the region, as well as data on the types of knowledge obtained. Exhibit 5 presents data on the types of external knowledge obtained by SMEs in South and East Bulgaria. All the SME data is presented in the report entitled 'SME Reporting.'

Exhibit 5: Example of Data from the SME Survey

Types of knowledge obtained and innovations developed by firms in Bulgaria	Proportion of firms
New product and service development only	44.0
New process development only	7.0
Both new product and new process development	52.0
Intramural R&D	6.9
Extramural R&D	12.2
IT development/support and Acquisition of Equipment	64.8
Training	24.2
License, know-how	30.0
Marketing	29.5
General business support	36.2

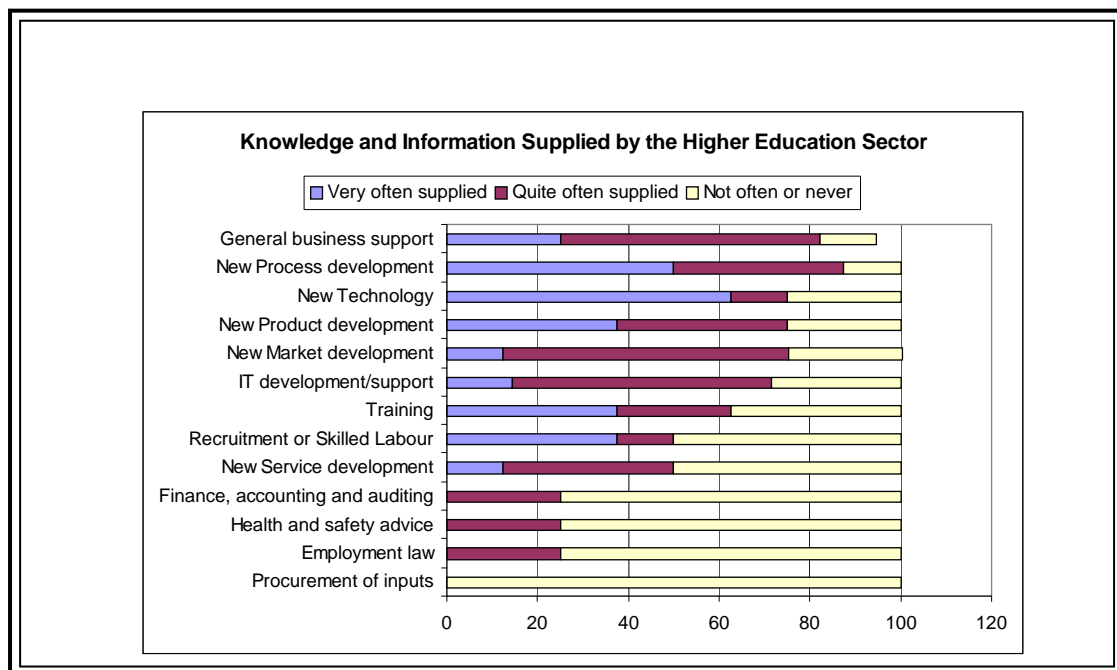
Data on Knowledge Suppliers

A similar scorecard was developed to gather data on the knowledge suppliers in each region (see Appendix 4 for scorecard). This scorecard was based on the SME scorecard in order to obtain comparable data. These organisations were identified in the initial stages of the project as being those involved in knowledge generation activities or general business support activities.

The scorecard was administered to the established contact in each organisation and the respondents were also encouraged to follow-up their response with a meeting via an informal focus group. As with the business scorecard the questions were mostly quantitative and aimed to get the respondent to rate the importance of various activities.

Exhibit 6 presents data on the types of knowledge and information supplied by universities in the Yorkshire and Humberside region. All the data gathered in this exercise is available in the report entitled Regional Knowledge Supply Reports.

Exhibit 6 – Example of Data from the Survey of Knowledge Supply Reports (Yorkshire and Humberside Region)



Appendix 1 – MIRIAD Reports

The MIRIAD project has produced a wealth of information on the four regions. This information is presented in a series of reports, all of which are publicly available. These reports and a brief summary are listed below.

Regional R&D Performance Reports

This report outlines the state of R&D in each of the regions as well as presenting data on the economic performance of each region.

Regional Knowledge Models

This report outlines the policy initiatives and role of knowledge transfer organisations in each of the regions.

Regional Knowledge Scorecards

This report summaries and analyses the findings of the previous two reports, highlighting the relative strengths and weaknesses of the regions.

Workshop Materials and Future Scenarios

This report presents the materials used in meetings with regional policymakers to highlight the current state of the regional economies and the actions required to tackle any problems

Workshop Reports

This report presents a report of the meetings with policymakers and outlines the main topics discussed.

Business Scorecards

This presents the scorecard instrument used to survey SMEs in the regions.

SME Reporting

This report presents the findings of the regional SME surveys, benchmarking their knowledge assets, their interaction with knowledge contacts, participation in knowledge alliances, interaction with the regional knowledge base and perspectives on future directions for regional policy.

Regional Knowledge Supply Reports

This report presents the findings of the regional knowledge supply survey, focussing on knowledge generating institutions, the knowledge they disseminate to SMEs, how they disseminate it and any barriers to knowledge transfer.

Regional Intervention Reports

This report outlines the discussions from a policy roundtable meeting held in each of the four regions intended to create a forum for the discussion of interim results from the project and obtain the views of the policymaking community.

Reports on Exchange Visits

This report outlines the exchange visits undertaken by policymakers from each region in order to facilitate trans-national learning and interaction between policymakers from each of the regions.

R&D Investment Strategies

This report presents the R&D strategies produced for each of the four regions.

Appendix 2 – Consultation Questions

The aim of the consultations was to gather empirical data to provide an analysis of each region based on the triple helix framework. This aim required an open-ended consultation process with varying questions used across the three actor types (universities and research centres, innovation and technology transfer intermediaries, and policymakers). To ensure a broadly common approach in each region, the following represents a questionnaire framework designed to allow each partner to develop a schedule that is tailored to their region.

The initial section presents general questions used to gather background information, before focussing on the particular issues we wished to explore. It was important to be clear in the interviews as to what is meant by ‘knowledge’ and its creation and commercialisation. By ‘knowledge’ we referred to a specific piece of research or a research development that has the capacity to catalyse the innovation of new products or processes. In its most tangible form it may consist of a patent, or the skills required to undertake a specific task, or in a more intangible form a piece of potentially valuable information or data.

General Lines of Questioning (High Level Questions for All Consultees)

1. Are there R&D workers in the regional economy? If so, what type of R&D are they undertaking?
2. Who do the R&D workers work for and in which sectors are they employed? What links do they have both in the region and elsewhere?
3. What contributions do R&D worker make to regional innovation? Are there enough of these workers, and if not in which types of sectors, operations and institutions are they missing?
4. Which firms and institutions are spending money on R&D in the region? What are they using to actually research and develop?
5. What contribution is the R&D expenditure making to regional innovation? What are the sources of the money being spent on? What gaps are there in these sources? Is the money being spent correctly and efficiently?
6. Who are the key knowledge creators/producers in region and what knowledge do they produce?
7. Who are the key knowledge commercialisers/utilisers and what knowledge do they utilise?
8. Do the knowledge creators transfer knowledge to other institutions/firms, and if so, to what extent does this transfer occur within or outside the region?
9. Is knowledge transferred directly from creator to commercialiser, and if so, what type of knowledge is transferred, and is this knowledge received from outside or inside the region?
10. Is knowledge transferred indirectly from creator to commercialiser through an intermediary. If so, who are the intermediaries and what role do they play, also what knowledge do they assist in transferring?
11. Is knowledge transferred from creator to commercialiser as indirect by-product of other factors or activities, such as regional demonstration effects or agglomeration effects?

12. Is there any transfer of knowledge back from commercialiser to creator (reverse knowledge transfer)?
13. What are the key issues and barriers that knowledge creators face in actually creating knowledge?
14. What are the key issues and barriers that knowledge commercialisers face in actually commercialising knowledge?
15. What policies are in place at the national, regional or local level that are focused on the development of a knowledge-based and innovative economy?
16. Are there any policies in place that are aimed at stimulating and supporting knowledge creation?
17. Are there any policies in place that are aimed at stimulating and supporting knowledge demand and absorption?

Questions Specifically for the Knowledge Creators – Universities and Other Research Institutions

18. Does your institution have a knowledge commercialisation and/or transfer plan?
19. What is the overall attitude of institution towards knowledge transfer and commercialisation activities?
20. What are the main objectives of your institution's knowledge commercialisation and/or transfer activities? E.g. create new companies, exploit or develop commercial expertise, increase revenue from commercialisation, provide consultancy or research services, diversify sources of income
21. Which of the following activities is your institution involved with to any great extent?
 - Patenting of inventions
 - Licensing of technology to commercial organisations
 - Creation or support of spin-off companies, or joint ventures
 - Collaborative research with businesses.
22. Is your institution involved in any other forms of knowledge commercialisation and transfer?
23. Concerning the above activities, where does the knowledge produced by your institution flow? Please give a broad indication of the location of the key actors involved within the region, within the nation, and overseas.
24. Conversely, where do you consider your institution receives most its knowledge related to commercialisation activities?
 - Mainly within the region
 - Mainly within the nation
 - Mainly overseas
25. How successful do you consider businesses in your nation and region are in absorbing and making use of the technology and knowledge generated by your institution?
26. Of those businesses that absorb and using the knowledge and technology generated by your institution, which industrial or business sectors do they mainly relate to?
27. How successful do you consider the 'culture' in your institution to be in terms of generating knowledge commercialisation links and collaborations?
28. What is the overall perception of the research staff within your institution of the business community within your region?

Questions Specifically for Intermediaries

29. Do universities and other research institutions play a role in helping to drive forward the competitiveness, innovation and development of regionally located companies? How has this role changed in recent years?

30. In overall terms, which are the most important actors in your region for helping and working with businesses in undertaking research and development? E.g. Other businesses, universities, private research organisations, or other public sector research organisations

31. What are the most important technologies of relevance to improving the performance of businesses in your region?

32. Where the businesses in this region generally source their R&D from?

33. Which sectors in your region do you consider currently require the biggest increase in R&D if they are to become more competitive in the future?

34. How effective do you consider the 'culture' in your region's business community to be in terms of generating R&D through collaboration with other actors?

35. What is the overall perception of the business community in your region towards the research community in your region?

36. What are the most significant barriers to preventing the further interaction between the business and HEI communities in your region? E.g. lack of innovation and research drive from the business community, lack of applicable research emanating from the research community, lack of awareness by businesses as to the potential existing within the research community, lack of awareness by the research community as to the potential role of regional businesses as collaborative partners, lack of funding and finance to facilitate knowledge transfer and interaction, lack of a robust intermediary to facilitate transfer.

Questions Specifically for Policymakers (and where relevant intermediaries)

37. At national, regional or local level, what policies and strategies are currently in place in relation to stimulating innovation and developing a knowledge-based economy?

38. Are there any strategies or policies specifically targeted at R&D and improving levels of investment on R&D?

39. Who are the key actors involved in the development and implementation of these policies?

40. What are the key components of the policies (e.g. technology policy, entrepreneurship initiatives, support for SMEs, support for universities, investment in R&D, etc.)?

41. Overall, to what extent do you consider that public policy has influenced the evolution of the knowledge economy in your region?

42. What is the role of national government in promoting universities and other research actors as drivers of the economies within which they are located, please describe

43. What is the role of regional/local government in promoting universities and other research actors as drivers of the economies within which they are located, please describe

44. What are the policies of regional/local government towards enhancing the knowledge commercialisation and transfer activities of regional universities and other research actors?

45. Please outline the key policy levers available to regional/local government to intervene in this area.
46. How has this level of intervention changed in recent years?
47. Has the focus of policies changed much in recent years?
48. In overall terms, which are the most important actors in your region for working alongside businesses in R&D activities? E.g. Other businesses, universities, private research organisations and other public sector research organisations.
49. What do you consider is the scope for universities and other research actors in your region to become key drivers of knowledge-based economic development? Please describe what shape this role might best take?
50. How effective do you consider the 'culture' in your region's business community to be in terms of generating R&D through collaboration with the research community?
51. From a government perspective, what are the most significant barriers to preventing the further interaction between the business and research communities in your region? E.g. lack of innovation and research drive from the business community, lack of applicable research emanating from the research community, lack of awareness by businesses as to the potential existing within the research community, lack of awareness by the research community as to the potential role of regional businesses as collaborative partners, lack of funding and finance to facilitate knowledge transfer and interaction, lack of a robust intermediary to facilitate transfer.
52. Assuming your government department has been involved and/or is currently involved in R&D and innovation programmes. What are the most important lessons that can be learnt from this involvement and what improvements should be made to future programmes?

Appendix 3 – SME Scorecard

In order to introduce the project an introductory page was added to the scorecard that explained the nature of the project, the definition of the region and definitions of key parameters such as importance, effectiveness and competitiveness.

The key aim of this questionnaire is to gain an understanding of how companies in your region can be helped to improve their performance. In order to achieve this, it is necessary to gather some information on your company and its operation. All the information you supply us with will remain confidential and will only be used in an aggregated form along with information supplied to us by other companies.

Furthermore, the design of the questionnaire is such that an analysis of the results could be used to provide your company with performance data relating to key operational strengths and weaknesses.

We are particularly interested in how the region in which you are based plays a role in the operation of your company. In this case the region is defined as [PARTNERS TO INSERT AN APPROPRIATE GEOGRAPHIC DEFINITION OF THE REGION].

We are also very interested in how the knowledge your company has, or may wish to have, can be used to improve the performance of your company. Throughout this questionnaire, **knowledge is defined as broadly consisting of research and development, ideas, expertise, and other information that is, or potentially can be, used to make the operation of your company more effective.**

Within a number of the questions we ask you to rate the importance and effectiveness of various factors for the competitiveness of your company. In this case, please consider the following:

- Importance – relates to how necessary a particular factor is to the competitiveness of your company.
- Effectiveness – relates to how efficient the use is by your company of a particular factor.
- Competitiveness – relates to the ability of your company to maintain or improve its financial position through maintaining or improving the market share for its products and/or services.

Knowledge Stock

1. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

Human Resources	Importance	Effectiveness
Employee skills		
Employee qualifications		
Employee competences		
Employees' problem solving capacity		
Employees commitment		
Employee loyalty		
Management skills		
Management qualifications		
Management competences		
Management commitment		
Management loyalty		

2. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

Intellectual Assets	Importance	Effectiveness
Patents filed		
Copyrights held		
Trademarks registered		
Trade secrets		
Management experience		
Market knowledge		
Process manuals		
Internal training programmes		
Website		
IT facilities		

3. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

Practices and Routines	Importance	Effectiveness
Process manuals		
On-the-job training		
External training		
Management style		
Forums for solving problems		
Communication with customers		
Communication with suppliers		

4. To what extent are the company's practices and routines formally documented or recorded?

Always	Most of the time	Occasionally	Rarely	Never

5. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

Physical Resources	Importance	Effectiveness
Industrial buildings		
Retail premises		
Land		
Plant equipment (owned)		
Plant equipment (leased)		
Physical location		
Road links		
Rail links		
Proximity to customers		
Proximity to suppliers		

6. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

External Relations	Importance	Effectiveness
Distribution arrangements for your company's products and services		
Customer loyalty		
Brand image of your products/services		
Reputation of your company		
Customer satisfaction		
Responsiveness to customer demands		
Relationships with your customers		
Relationships with your suppliers		
Licence agreements with other firms (for your products)		
Licence agreements with other firms (for their products)		

Knowledge Creation and Acquisition

7. On a 1 – 10 scale, how important (where 1 is of no importance and 10 is extremely important), and effective (where 1 is completely ineffective and 10 is extremely effective) are the following for creating the knowledge (i.e. the research and development, ideas, expertise, and other information) required to maintain or improve the competitiveness of your company:

	Importance	Effectiveness
Management		
Shop floor workers		
Specific workers employed to undertake R&D		
Specific teams created to undertake R&D as required		
A specific department (e.g. an R&D department)		

8. Approximately, what proportion of your company's workforce has the skills necessary for creating the type of knowledge the company requires?

_____ %

9. Is the proportion of the workforce with the right skills:

Above the company's needs	Only slightly above the company's needs	Adequate for the company's needs	Slightly below the company's needs	Inadequate for the company's needs

10. On a 1 – 10 scale (where 1 is never and 10 is very often) how often does your company utilise the following sources to obtain knowledge?

	Within the Region	Outside the Region	If Outside Region, Please State Main Locations
Customers			
Suppliers			
Rival firms			
Public sector organisations, such as government business support agencies			
Private sector organisations, such as private training or research providers, and consultants			
Universities or other higher education institutes			
Professional networks (e.g. chambers of commerce, trade or business associations, business clubs or other professional networks).			
International Organisations/Donors			
Other (please state)			

11. Do the organisations and individuals from which you company sources knowledge change or remain mainly the same (please tick)?

Are Always Changing	Quite Frequently Change	Occasionally Change	Rarely Change	Virtually Never Change

12. Do you or your colleagues engage in social activities outside of the work and business environment - such as informal lunch, dinner, drinks, or other recreational, sporting, or leisure activities – with individuals from those companies and organisations from whom your company sources its knowledge (please tick)?

Very Frequently	Quite Frequently	Occasionally	Rarely	Virtually Never

13. To what extent do you think these social activities would continue if your company could no longer source the knowledge it requires from these companies and organisations (please tick)?

Would continue as before	Would continue, but slightly less frequently than before	Would continue, but only occasionally	Would continue, but only very rarely	Would cease to occur

14. To what extent do the social contacts you and your work colleagues have outside the company (i.e. friends, family, or other non-work or non-professionally related contacts) act as sources of knowledge for your company (please tick)?

Very Frequently	Quite Frequently	Occasionally	Rarely	Virtually Never

15. What type of knowledge does your firm obtain from all of its external sources?

Knowledge Type	Very often obtained	Quite often obtained	Not often obtained	Never obtained
Employment law				
Health and safety advice				
Finance, accounting and auditing				
New Market development				
New Product development				
New Process development				
New Service development				
New Technology				
Recruitment or Skilled Labour				
Training				
Procurement of inputs				
IT development/support				
General business support				

16. On a 1 – 10 scale, please rate how important (where 1 is of no importance and 10 is extremely important) it is to your company to be able to access knowledge produced from the following disciplines?

Knowledge Disciplines	Importance	Where possible, please state type of knowledge required
Biological sciences		
Medicine and dentistry		
Computer science and information systems		
Engineering technology		
Mathematical sciences		
Business and administrative (e.g. logistics)		
Physical sciences		
Agriculture		
Architecture, building & planning		
Other (please state)		

17. On a 1 – 10 scale (where 1 is of no importance and 10 is extremely important) please rate the following in terms of importance for your company as collaborators to undertake the development of new products, services or processes (either formally or informally) from within and outside your region:

	Within the Region	Outside the Region	If Outside Region, Please State Main Locations
Customers			
Suppliers			
Rival firms			
Public sector organisations, such as government business support agencies			
Private sector organisations, such as private training or research providers, and consultants			
Universities or other higher education institutes			
Members of your professional networks (e.g. chambers of commerce, trade or business associations, business clubs or other professional networks).			
International Organisations/Donors			

18. Do the organisations and individuals that your company collaborates with change or remain mainly the same (please tick):

Are Always Changing	Quite Frequently Change	Occasionally Change	Rarely Change	Virtually Never Change

19. Do you or your colleagues engage in social activities outside of the work and business environment - such as informal lunch, dinner, drinks, or other recreational, sporting, or leisure activities – with individuals from those companies and organisations with whom your company collaborates (please tick)?

Very Frequently	Quite Frequently	Occasionally	Rarely	Virtually Never

20. To what extent do you think these social activities would continue if your company could no longer source the knowledge it requires from these companies and organisations (please tick)?

Would continue as before	Would continue, but slightly less frequently than before	Would continue, but only occasionally	Would continue, but only very rarely	Would cease to occur

21. Are you or your company a member of any of the following:

	Yes	No
Chamber of Commerce		
Trade or Business Association		
Business Club		
Other professional networks		

22. If you answered yes to any of the above, on a 1 – 10 scale (where 1 is of no importance and 10 is extremely important), how important is membership of these networks for the following:

Developing customer contacts	
Developing supplier contacts	
Obtaining knowledge from other parties	
Creating solidarity within your industry	
A means of representing views	
Sharing knowledge with member	
Developing trust within the industry	

Innovation Culture

23. On a 1 – 10 scale, please rate the importance (where 1 is of no importance and 10 is extremely important) and effectiveness (where 1 is completely ineffective and 10 is extremely effective) of the following for the competitiveness of your company?

	Importance	Effectiveness
Core values of firm		
Innovative culture		
Development of new markets		
Development of networking opportunities within the company		
Development of networking opportunities outside the company		
Development of new products		
Development of new services		
Development of new processes		
Development of new materials		
Adoption of new inputs and materials		
Monitoring competitors' products and processes		

24. Approximately, how many new products or services or adaptations to existing products and services has your company made in the last 3 years:

Barriers and Future Support

25. On a 1 – 10 scale, please rate the most important barriers (where 1 is not a barrier and 10 is a very significant barrier) you company faces in acquiring or creating the knowledge it requires to maintain or improve competitiveness:

	Barrier
Unable to access relevant networks	
Unable to access relevant collaborators	
Inapplicability of knowledge created by others in region (e.g. universities, other companies or existing networks)	
Quality or applicability of available business support or advice	
Unable to access suitable finance	
Unable to access skilled labour	
Unable to access suitable training	
Unable to access suitable equipment or plant	

26. Are you are aware of the following organisations and their role in your region [EACH PARTNER TO ADD A LIST OF ORGANISATION IDENTIFIED IN D2.2]?

	Never heard of	Have heard of but not sure what they do	Have heard of and know what they do	Know what they do and have had contact with	Have had contact with them which has been beneficial to the company
e.g. regional development agency					
e.g. university					

27. Where should policymakers most focus and concentrate their resources so as to help companies in your region better acquire and develop the research and development, ideas, expertise, and other information required to improve their performance?

Policy Area	Does not need to be addressed further	Needs addressing but is not the core issue	Should form the core policy
Creating an improved system of business support and advice			
Making more finance available to companies enabling them to become involved further in R&D and knowledge related activities			
Creating more access to training and workforce development opportunities			
Support companies in entering and accessing new markets			
Create better networks that link companies with universities and other R&D performing organisations			
Make improvements to the physical infrastructure allowing companies to locate in better equipped premises			
Provide more support to companies to improve their supply-chains and logistical needs			
Stimulate better supply and demand for knowledge through the attraction of high value foreign investment			
Stimulate the creation of new start-up companies			

28. Please complete the following:

Name of respondent	
Position	
Name of company	
Year of establishment	
Annual Turnover (Most recent year)	
Annual Turnover Three years prior to most recent year	
For most recent year, what was the Operating Profit (i.e. Turnover minus cost of goods and services sold and marketing & administration costs) as a % of Turnover	
For most recent year, what were Employee Costs as a % of Turnover	
Ownership (e.g. limited company, partnership, sole proprietor, subsidiary of another company)	
Number of employees	
Sector of Activity	

Appendix 4 - Knowledge Supply Questionnaire

In order to introduce the project an introductory page was added to the scorecard that explained the nature of the project, the definition of the region and definitions of key parameters such as importance and effectiveness.

The key aim of this questionnaire is to gain an understanding of how universities and other knowledge generating and transfer support organisations in your region can help improve the performance of firms in the region. In order to achieve this, it is necessary to gather some information on your organisation and its operation. All the information you supply us with will remain confidential and will only be used in an aggregated form along with information supplied to us by similar organisations.

We are particularly interested in how your organisation operates in the region in which it is based. In this case the region is defined as [PARTNERS TO INSERT AN APPROPRIATE GEOGRAPHIC DEFINITION OF THE REGION].

We are also very interested in how and where the knowledge your organisation generates and processes is transferred. Throughout this questionnaire, **knowledge is defined as broadly consisting of research and development, ideas, expertise, and other information that is, or potentially can be, used to make the operation of an organisation more effective.**

For a number of questions we ask you to rate the importance and effectiveness of various factors for creating and transferring knowledge. In this case, please consider the following:

- Importance – how necessary a factor is for transferring knowledge from your organisation to the business community in your region.
- Effectiveness – relates to how efficiently your organisation transfers knowledge to the business community in your region.

Knowledge Assets

1. What type(s) of knowledge does your organisation supply to external sources?

Knowledge Type	Very often supplied	Quite often supplied	Not often supplied	Never supplied
Employment law				
Health and safety advice				
Finance, accounting and auditing				
New Market development				
New Product development				
New Process development				
New Service development				
New Technology				
Recruitment or Skilled Labour				
Training				
Procurement of inputs				
IT development/support				
General business support				

2. On a 1 – 9 scale, please rate the importance (where 1 is of no importance and 9 is extremely important) and effectiveness (where 1 is completely ineffective and 9 is extremely effective) of the following to your organisation's capability to create and transfer knowledge to firms in your region?

Intellectual Assets	Importance	Effectiveness
Patents filed		
Copyrights held		
Market knowledge		
Process manuals		
Training programmes		
Website		
IT facilities		

3. On a 1 – 9 scale, please rate which disciplines are significant for knowledge creation within your organisation (where 1 is of no significance and 9 is extremely significant).

Biological sciences	
Medicine and dentistry	
Computer science and information systems	
Engineering technology	
Mathematical sciences	
Business and administrative (e.g. logistics)	
Physical sciences	
Agriculture	
Architecture, building & planning	
Other (please state)	

4. On a 1 – 9 scale (where 1 is never and 9 is very often) how often does your organisation **source and obtain** knowledge from the following?

	Within the Region	Outside the Region	If Outside Region, Please State Main Locations
Small private sector firms (1-49 employees)			
Medium sized private sector firms (50- 249 employees)			
Large private sector firms (250+ employees)			
Public sector organisations, such as government business support agencies			
Private sector organisations, such as private training or research providers, and consultants			
Universities or other higher education institutes			
Professional networks (e.g. chambers of commerce, trade or business associations, business clubs or other professional networks).			
International Organisations/Donors			
Other (please state)			

5. On a 1 – 9 scale, please rate the importance (where 1 is of no importance and 9 is extremely important) and effectiveness (where 1 is completely ineffective and 9 is extremely effective) of the following to your organisation's capability to create and transfer knowledge to firms in your region?

Human Resources	Importance	Effectiveness
Staff/Employee skills		
Staff/Employee competences		
Staff/employee experience		
Staff/Employee problem solving capacity		
Staff/employee teaching skills		
Staff/employee knowledge of specific markets		
Staff/employee consulting skills		
Staff/employee strategic skills		
Staff/employee leadership skills		
Staff/employee development skills		
Staff/employee project management skills		
Staff/employee mentoring skills		
Management commitment		

Knowledge Transfer

6. On a 1 – 9 scale, please rate the importance (where 1 is of no importance and 9 is extremely important) and effectiveness (where 1 is completely ineffective and 9 is extremely effective) of the following to your organisation's capability to transfer knowledge to firms in your region?

Practices and Routines	Importance	Effectiveness
Process manuals		
Training materials		
Customer project materials		
Library		
e-library subscription		
Forums for solving problems		
Communication with beneficiaries		
Communication with other service providers		

7. On a 1 – 9 scale, please rate the importance (where 1 is of no importance and 9 is extremely important) and effectiveness (where 1 is completely ineffective and 9 is extremely effective) of the following your organisation's capability to create and transfer knowledge to firms in your region?

External Relations	Importance	Effectiveness
Reputation of your organisation		
Presentation of your services		
Knowledge of your organisation's role(s)		
Satisfaction of client/customer/partner		
Responsiveness to beneficiary demands		
Relationships with your beneficiaries		
Relationships with other providers		
Collaboration with business to innovate		
Collaboration with other providers to innovate		

8. On a 1 – 9 scale, please rate which disciplines are the most significant for knowledge transfer **from** your organisation (where 1 is of no significance and 9 is extremely significant)

Biological sciences	
Medicine and dentistry	
Computer science and information systems	
Engineering technology	
Mathematical sciences	
Business and administrative (e.g. logistics)	
Physical sciences	
Agriculture	
Architecture, building & planning	
Other (please state)	

9. On a 1 – 9 scale (where 1 is never and 9 very often) how often does your organisation **transfer knowledge to** the following?

	Within the Region	Outside the Region	If Outside Region, Please State Main Locations
Small private sector firms (1-49 employees)			
Medium sized private sector firms (50- 249 employees)			
Large private sector firms (250+ employees)			
Public sector organisations, such as government business support agencies			
Private sector organisations, such as private training or research providers, and consultants			
Universities or other higher education institutes			
Professional networks (e.g. chambers of commerce, trade or business associations, business clubs or other professional networks).			
International Organisations/Donors			
Other (please state)			

10. Does your organisation interact with any of the following?

	Yes	No
Chamber of Commerce		
Trade or Business Association		
Business Club		
International research organisations		
Professional organisations		
Subject focused organisations		
Funding organisations		

11. If you answered yes to any of the above, on a 1 – 9 scale (where 1 is of no importance and 9 is extremely important), how important is this interaction for the following:

	Importance
Developing contacts with firms	
Developing other service provider contacts	
Improving university-business relations	
Sharing knowledge with other members	
Developing trust between research providers and companies	

Barriers and Future Support

12. On a 1 – 9 scale (where 1 is not significant and is 9 extremely significant), please rate the significance of the barriers faced by your organisation in terms of transferring knowledge to firms in the region:

	Barrier
Lack of demand from local firms	
Lack of time to contribute to such activities	
Lack of finance/budget to reach many firms	
Lack of management acumen and skills	
Lack of support from the public sector (based on your experiences)	
Difficulties in undertaking market research to identify opportunities for collaboration	
Lack of contacts in the business world	
Other (please state)	

13. On a 1 – 9 scale (where 1 is not important and is 9 extremely important), please rate the importance of the barriers faced by firms in your region with respect to acquiring or creating the knowledge they require to maintain or improve competitiveness:

	Barrier
Access to relevant networks	
Access to relevant collaborators	
Inapplicability of knowledge created by others in region (e.g. universities, other companies or existing networks)	
Quality or applicability of available business support or advice	
Access to suitable finance	
Access to skilled labour	
Access to suitable training	
Access to suitable equipment or plant	

14. Where should policymakers most focus and concentrate their resources so as to help companies in your region better acquire and develop the research and development, ideas, expertise, and other information required to improve their performance?

Policy Area	Does not need to be addressed further	Needs addressing but is not the core issue	Should form the core policy
Creating an improved system of business support and advice			
Making more finance available to companies enabling them to become involved further in R&D and knowledge related activities			
Creating more access to training and workforce development opportunities			
Support companies in entering and accessing new markets			
Create better networks that link companies with universities and other R&D performing organisations			
Make improvements to the physical infrastructure allowing companies to locate in better equipped premises			
Provide more support to companies to improve their supply-chains and logistical needs			
Stimulate better supply and demand for knowledge through the attraction of high value foreign investment			
Stimulate the creation of new start-up companies			
Other (please state)			

Please complete the following:

Name of respondent	
Position	
Name of Organisation	

Notes

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- ⁱ Huggins, R (2003) 'Creating a UK competitiveness index: regional and local benchmarking', *Regional Studies* 37(1), pp. 89–96
- ⁱⁱ Amin, A and Thrift, N (1995) 'Globalisation, institutional "thickness" and the local economy' in Healey, P (Ed.) *Managing cities: the new urban context*. Chichester: John Wiley and Sons
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