1. Objectives

The DIME NoE seeks to address and analyze (1) the generation, accumulation, and exchange of knowledge; (2) governance, institutional frameworks and public policies; and (3) social and spatial proximity as influencing cohesion and the above. These three topics directly address the objectives of the Priority 7, research area 1.1.2.

DIME was established to create a research-oriented NoE analyzing the governance of dynamic economic and social systems from the micro to the macro level, specifically involving the study of spatiality in these processes. One explicit goal is to address contemporary challenges facing the European Union, its Member States, its companies and its citizens in managing the transition to a knowledge-based economy and society in the context of EU-enlargement and of the globalization of the economy.

DIME will integrate various social sciences approaches, including, among others, economics, geography and management science, and research activities going on in the enlarged EU and outside. Its joint programme of activities includes three research action lines and three structural activities (described in more detail elsewhere in this Annex). The research action lines are organized around selected topics of joint proven interest to the various disciplines, while the structural activities provide specific platforms for three separate aspects of integration (training activities, IT infrastructure and dissemination and valorization).

The DIME NoE is structured as an open network, consisting both of well-established research institutes and researchers, and smaller, more isolated teams. The DIME governance structure provides opportunities for participation by non-members, as well as opportunities for new members to enter the network. To cope with the large number of potential participants and to secure the excellence of them, DIME went through a strong and serious selection process, and this will be continued over the lifetime of the project. Moreover, section 7 below documents specific indicators for monitoring and evaluating performance and excellence.

NoEs can make an important contribution to the integration of the European Research Area to the extent that they are able to bring together lines of research and groups of researchers into a cohesive and well-articulated network. However, the ‘frontier’ of advance in social science research is less likely to be sharply defined than similar frontiers in the natural or physical sciences, or even in engineering disciplines. A consequence is that the integration of research involves complementarities and extensions of comparative frameworks more often
than ‘rationalization’, i.e., the concentration of research effort on the most promising lines of advance and the elimination of duplicative research. In light of this, DIME sets as its specific objective to develop means of integrating the conceptual, theoretical, and measurement tools employed by different social science communities, dealing with the above described project goals, in order to discover better means of mobilising existing knowledge as well as generating organisational and policy-innovation.

This is translated into operational goals and measurable indicators in the following three ways:

1. Measures of integration related to participation and access: The DIME network seeks to increase the participation of researchers and research institutes that have not previously been centrally active in the research areas represented by DIME and to enhance the participation of women in DIME related research. The appropriate measures for such participant integration that will be monitored and that will provide a basis for directing efforts at continuous improvement include:
   a) the extent to which DIME events realize the aim of balancing participation by larger and more well-established institutions with smaller and newer institutions (based upon event participation rosters),
   b) the progress made at including female researchers at every level of participation in DIME (including, but not limited to, participation in leadership of research and structural actions, submission of working papers and publications, participation in DIME events). Further monitoring of gender issues is undertaken in relation to the gender policy to be adopted by DIME.
   c) the extent to which individual researchers (including doctoral level researchers) mobility from smaller institutions and ‘less central’ countries is enhanced by DIME (this measure is to be derived from self-reporting of partners about mobility to DIME events and to events in which ‘DIME participation was a contributory influence’) and
   d) qualitative accounts of the effect of DIME participation on access to relevant knowledge, funding opportunities, and collaborative activities (to be derived from self-reporting of partners on an annual basis)

2. Measures of integration related to stakeholders: The DIME network seeks to improve access to and the relevance of social science research findings for stakeholders including national and regional policymakers and others who might benefit. The appropriate measures for integration related to stakeholders that will be monitored and that will provide a basis for directing efforts at continuous improvement:
   a) a database on interested stakeholders will be compiled from the various ways in which these stakeholders may interact with DIME (participation in events, registration at the DIME website, downloading working papers, etc.). The analysis of this database will provide indications of the types and numbers of stakeholders that DIME is serving directly
   b) direct feedback from stakeholders will be sought in the form of questionnaires delivered to a representative sample of identified stakeholders after DIME has been in operation for two years and annually thereafter. This questionnaire will
identify areas where improvements in access and research relevance can be made in the view of stakeholders.

3. Measures of integration related to research: In facilitating interaction between researchers, DIME intends to foster collaborative research and to strengthen research fundraising based upon the interactions within the network. The appropriate measures for such research integration that will be monitored and that will provide a basis for directing efforts at continuous improvement include:
   a) Scientific papers (counts of working papers, papers submitted for publication, and published submissions) that participants identify as having been ‘facilitated or prompted by participation in DIME’ will be recorded along with information about the institutional affiliations of authors.
   b) Qualitative reports on research integration stimulated by DIME. DIME research participants will be surveyed at the end of 16 months and twice again at 18 month intervals concerning the extent to which DIME participation has contributed to collaborative research and strengthening of research funding capabilities and outcomes.

2. Potential Impact

The main background of DIME is the still prevailing fragmentation of the knowledge base concerning the industrial development in Europe at the national and regional level. There is a basic need for integrating a long series of disciplines and research perspectives in order to develop a better understanding of why the overall picture of the European scene still has the character of being a patchwork. A second function of DIME is linked to the existence in Europe of a few research centres and/or researchers (DIME members) with worldwide visibility. They are able to compete in terms of excellence and visibility with the most prestigious centres in North America. DIME is an extraordinary opportunity for them to further develop and enhance their capabilities by creating a necessary critical mass and a relevant cognitive infrastructure to assure the spread of excellence and to allow a younger generation to benefit from the. The Structural Activity Lines devoted to training and to dissemination and interactions are critical in this respect.

Within the structural activity line devoted to dissemination, the Stakeholder Advisory Committee plays an important role. The committee reports to the Executive Committee and assesses once a year the relevance of DIME in terms of research quality and of relevance to the research and structural activities. It also engages in periodic consideration of the evolution of the Joint Programme of Activities in connection with the evolution and the needs of society, and suggests developments and orientations to the EC. It pays particular attention to the structural activities aiming to develop the dissemination and co-production of research agendas and results.

Specifically, through the structural activity line on dissemination, DIME aims to produce results relevant for the following three broad categories of stakeholders:

1. The general public as a whole. This is achieved through the policy reports on selected topics, prepared by some of the most senior and esteemed members of DIME, in
collaboration with non-DIME members of the same caliber; and through the regular European Work Seminars, which are aimed at mixing academic and industry and business specialists.

2. Industry. The interaction between practitioners and academics is traditionally made difficult by the adoption of rather idiosyncratic methods, languages and mindsets. DIME proposes to fill the gap between practice and science by identifying specific boundary objects that will enable researchers and practitioners to define a common language to interact, while retaining their specific cognitive approaches to problem solving. A boundary object is an artefact, a document or a concept that can help people from different communities build a shared understanding.

3. Local actors and policy makers. DIME will select regional policies as the locus of interaction with policy makers in the knowledge economy. Development Agencies throughout Europe and beyond are facing unprecedented pressures to change their inherited modes of operation in the face of globalisation, the knowledge economy and the imperatives to boost innovative entrepreneurship. DIME’s objective here is not only to disseminate knowledge resulting from its research actions, but moreover to interact and share experiences with the local actors and facilitate the co-evolving of understanding among them.

3. Outline joint programme of activities (JPA) - for the full duration of the project

The activities are structured with the aim to further the emergence and the development of a common research and training platform in the interdisciplinary fields covered by DIME. The structural activity lines are crucial in this respect but have to be grounded in lively joined research activities. The overall challenge for DIME is to articulate both types of activities, in an open and interactive way, within the network as well as towards the stakeholders.

3.1 Integrating activities

STRUCTURAL ACTIVITY LINE 1 (SAL1): INTEGRATING AND DEVELOPING TRAINING ACTIVITIES ASSOCIATED WITH DIME

Training is critical for a NoE such as DIME, for three main reasons:
- It is the best way to develop specific research capabilities in a field that is both complex and interdisciplinary. This capability will need a dense interaction between the joint research actions, the researchers involved in their implementation, and the graduate and post-graduate students interested and attracted by the field of DIME.
- It is an essential mechanism for raising awareness of both academics and stakeholders to the issues raised by a dynamical and institutional approach to economic and social questions.
- It is the first tool to furthering gender equality by encouraging female students.
- Training is the basis for furthering Integration and excellence by providing economies of scale and improved quality.

The training activities related to DIME aim at three target groups:
future policy makers, professionals, officials and administrators, in particular with specific competences on regional development;

- managers for and from industry and consultants for rapidly evolving enterprises;

- future researchers and teachers in the field.

Training programmes are long-term activities as are research ventures, i.e. they are long term investments, the pre-requisite for the sustainability of the network. The 5-year objectives have to be considered at four levels of action: doctoral, master level training, long-distance/e-learning and short courses for specific target groups. A more specific action will concern the training of supervisors (see below objective S4.3).

It should be stressed that training will play a critical role within DIME for integrating researchers (both experienced and young researchers) from the new member states.

The integration and rationalisation levels reached at various stages as well as the development of new advanced training schemes for students and other audiences will serve as an indicator of success of this line of activity.

**Objective S4.1: Establishing a coordination platform**

The main task of the coordination platform is to support and develop the training activities as such in coherence with both the other structural activities (in particular with the information base) and the integrative research lines. This latter aspect is crucial to develop “frontier oriented” training schemes, related to advanced research programmes, in the tradition of the university training principles.

The following actions have been identified to achieve the proposed objectives with a 5-year horizon:

- General diffusion of the information about training activities (collection and dispatching information)
- Fund raising, both from international public funds and private organisations (e.g. Socrates and Marie Curie);
- Integration issues, i.e. securing access of isolated researchers (in particular younger ones, and from new member states)
- Design of new programmes and actions, in particular aimed at new target groups and/or with new contents
- Support of specific actions: advertising of the programmes, follow-up of students (career prospects...), get together actions (conferences, ...), harmonisation of procedures...

This activity will be responsible for allowing real time mapping of the training activities in the network (contents, duration, structures, accreditation, fees, ...), fostering the design and the development of new programmes and activities, sustaining the existing ones by facilitating access to new target groups (new members states, female participants, less developed regions and/or thematically isolated young researchers...)

**Objective S4.2: Actions for Master training**

Even if the Master level is not directly within the scope of research programmes, it is a matter of fact that in most European countries research-oriented Master programmes have
been developed. It is again important for DIME to design and influence the content of the training at that level. The main objective is to foster the development of relevant training modules in the existing master programmes, to support interfaces between existing master programmes in related fields, and to facilitate integrated master programmes.

Objective S4.3: Actions at the doctoral level
The basis of training related to research activities is the development of doctoral training.

DIME attaches great importance to the fact that all supervisors are active researchers within our field(s) of study, and DIME will provide a targeted training programme to improve supervisory competence, and will engage eminent European and foreign scholars to share their experience, establish standards and disseminate a common code of good supervisory practices.

Objective S4.4: Short courses and knowledge dissemination activities through training

The DIME network will have to develop specific short courses and teaching material in order to reach particular audiences. It is certainly true for the different stakeholders of DIME: regional policy makers, or regional developers; but also managers from emerging and/or rapidly evolving industries. This objective will be achieved in interaction with the different Research Activity Lines and other structural activities (such as the disseminating one). It will be also used as an experimental device for more ambitious programmes, to test the existence of specific needs and audiences.

Objective S4.5: Development of Long Distance Learning

One of the goals of DIME is to provide access to doctoral and master education (in DIME related areas) to students who are not able to attend traditional universities because they cannot afford to stop working and/or because they live in hard to reach geographical areas that they cannot leave. The solution for these types of students, who are often older than average, is part time “long-distance” education. One of the key partners in DIME is the Open University (UK), the recognized international leader in long distance learning. DIME will work closely with the Open University to develop a specifically designed long-distance module(s) in the Master and Doctoral programmes, which will allow it to reach new target groups that are, for the most part, not currently reached by the existing doctoral initiatives. It will also build on the experience of CERGE-EI in this area. Although the master and doctoral programmes in both the Open University and CERGE-EI have courses that teach the economics of innovation and other areas related to DIME, DIME will take advantage of their expertise to create new long-distance modules dedicated specifically to DIME research.

Furthermore DIME will investigate the possibilities offered by e-learning, one of the promising technologies, in order to learn more efficiently from the previous experiences of its members and to develop new training modules aimed at different types of audiences, with the possibility to contribute to the dissemination of knowledge.
STRUCTURAL ACTIVITY LINE 2 (SAL2): DEVELOPING THE INFORMATION STRUCTURE OF DIME

One of the essential axes of DIME will be the development of a common research infrastructure that should promote de facto integration and make it irreversible. The main infrastructure will obviously be an intangible one and will be based on the development of common practices and mutual trust due to the management of common projects within DIME, and on the exchange of young and advanced researchers. However, it will be reinforced by the development of common tools to allow a collective and dynamic management of information and knowledge to which ubiquitous access will be organized thanks to Information Technologies.

The platform will be primarily based on the building of an intranet accessible by the DIME members to manage their scientific projects. The Intranet will be aimed at

i) Supporting cooperative work
ii) Pooling research capabilities
iii) Supporting the development and the sharing of information

In addition, the Intranet will be combined with the development of a web site aimed at supporting the dissemination policy of DIME

Objective S5.1: To build an Information Infrastructure to Support Cooperative Research Efforts

Information Technologies are also an essential tool to support the coordination and the integration of research since they allow the sharing of information and knowledge among researchers that are mobile and might work on common projects in remote locations.

For that purpose, DIME seeks to develop an Intranet type infrastructure aimed at enabling the DIME research community to share information and to support cooperative workflow.

For that purpose three types of tools will be developed

- Tools facilitating the matching among researchers.
- Tools aimed at sustaining cooperation among members of groups working on common projects.
- Tools aimed at collectively managing (at the DIME level and not only at the working group level) information and knowledge.

Objective S5.2: To develop an Information Platform for the Dissemination of DIME’s results

The DIME Intranet should rapidly become an infrastructure on which a lot of information related to DIME will be available. This information will cover the results of the researches carried out within the DIME Research Programme frame (and more generally the results of the researches completed by the various teams involved in DIME). It will cover also the information that is at the root of these results: working papers, bibliographical references, data sources, etc. Lastly, the Intranet will organize and archive a lot of information about the teams involved in DIME and more generally about the research community of interest on the topics covered by DIME. It will be worthwhile to bring part of this information to the public.

The DIME Web Site will be a major tool to disseminate information related to DIME. It will be based on the information databases developed for the Intranet, but it will add new
features since the major goal is not to organize cooperation among researchers, but to bring results to the public. The publication process will be supervised by the coordinators of the various Research Programmes and Structural Activities of DIME. Indeed, in addition to research results, the DIME Web site will be aimed at providing:

- Training resources
- Information dedicated to a non academic audience, especially policy makers, business specialists, NGOs, citizens that are interested by multi-level governance problems associated to the raise of the KBE in the context of Europe and its regions

3.2 Programme for jointly executed research activities

RESEARCH ACTIVITY LINE 1 (RAL 1): DYNAMICS OF INDIVIDUALS AND ORGANISATIONAL KNOWLEDGE IN A REGIONAL CONTEXT

A large and growing body of evidence that new and better knowledge plays a central role in advancing economic growth and employment is matched by a growing dissatisfaction with existing assumptions and policies aimed at promoting the exchange of knowledge. It is obvious that knowledge is unevenly distributed between regions, organisations, and individuals. It is almost as obvious that knowledge has ‘sticky’ properties – adhering to the sites at which it is created despite the many mechanisms that have been devised for ‘spreading’ knowledge more broadly throughout society or between societies. These common sense observations are often ignored in social science due to the pressing importance of other issues. In several social science disciplines, notably economics, sociology and geography, there is a growing interest in how the mechanisms of knowledge exchange operate and what institutions (i.e. rules, norms and standards) might better facilitate knowledge exchange. Knowledge exchange processes constitute a ‘bottleneck’ to economic growth and employment rivalling other constraints such as investment or access to natural resources.

This RAL will bring together researchers with expertise in the issues of knowledge exchange between individuals and between organisations in order to strengthen the foundations of research on knowledge exchange and to communicate findings that are relevant for policymaking.

Objective R1.1: On the institutional foundations of knowledge generation and exchange

This objective focuses on improving knowledge about how processes of knowledge exchange between individuals in different organisational contexts occur and are influenced by different institutional rules, norms and standards. Achieving this objective requires the integration of theoretical frameworks explaining the motives, both intrinsic and extrinsic, of individuals that impel them not only to learn and discover, but also to share and actively participate in collective efforts within firms, networks and communities. The perspective of individual maximisation in knowledge accumulation can easily lead to a social dilemma in which the individual pursuit of knowledge accumulation conflicts with its sharing, thus hindering learning and the recombination of knowledge. The development of socially appropriate institutions (rules, norms, and incentives) supporting knowledge exchange
therefore require establishing a balance between direct self-interest and the social value of knowledge exchanged within groups that effectively share knowledge (which, in turn, augment the value of individual knowledge).

A second theme within this objective involves improving understanding of the relationship between institutions and motivations in order to shed light on the design of public policies within the European Union and of the governance structures at the local, regional and national levels that may promote the knowledge society within a socially cohesive Europe. This agenda is meant to confront and to address the tension between highly ‘situated’ explanations and systemic explanations and to lead to more precise specifications of when, how and why context matters. The aim is therefore to provide important evidence concerning the opportunities and constraints for knowledge mobilisation across different organisational contexts within and between regions.

**Objective R1.2: On the formation and extension of communities of practice...**

This objective seeks to broaden and deepen the discourse on communities of practice – social formations with institutional norms and, sometimes, explicit rules that govern ‘membership’ and participation in knowledge exchange activities. A common source of such communities of practice is the pursuit of a common profession or skill that involves individuals from different organisations. The combination of experiences that are shared within professions or skill groups and that draw upon experience in diverse organisational contexts provides a powerful method of sharing knowledge and creates a broader definition of ‘practice’ than ‘how we do things’ in one organisation at one time. In recent years a powerful new body of thought has emerged, claiming that both routine and path-breaking innovations are powered by the practices of communities of mutual interest and obligation. This new emphasis on communities of practice potentially radically alters our thinking on knowledge generation and exchange, which now appears to be a bottom-up, interactive, non-rational, and boundary crossing process. It draws policy attention to the local, the prosaic, the alignment of objects within a network, the reproduction of communities, the social and the sociable, the alignment of different communities into a common project, and the governance of communities.

For the regional knowledge-based economy, a key question to be explored in this Objective is what determines whether communities of practice operate in concert with other recent trends toward the regional concentration of innovation.

**Objective R1.3: On universities roles in establishing spinoffs and knowledge networks...**

Universities have a particular significance as localised entities in regions. Even though they are typically sponsored and supervised by Ministers of Education, they are subject to pressures, and offered opportunities from their local environment which may condition, if not shape, the development of curricula, the contents of their research activities, and the reach of their national and international contacts.

We observe both success stories of universities acting as gateways to global knowledge exchange, and failure stories of “ivory towers” quite at odds in dealing with many local actors (such as SMEs and their associations, policy-makers, or minority groups), as well as stories of local economies unresponsive to the knowledge opportunities provided by their universities and colleges. Among the most desirable features of universities’ contribution to
local development are:
- the supply of qualified workforce for innovative activities (including technology adoption and R&D absorption), well beyond the mere “production” of undifferentiated white collar employee skills;
- the formation of social networks for exchange of both knowledge and information, not only within the realm of academic research but also in the one of industrial research; the production of the ‘spin-off’ enterprises involving staff and students. Assessing and improving the specific contributions that universities can make to regional and sectoral development depend upon achieving a better knowledge of how these features of the university as an actor in the knowledge-based economy operate.

**Objective R1.4: The Influence of Rules, Norms and Standards on Knowledge Exchange**

The legal standards for qualifying ‘bits’ of knowledge as intellectual property (IP) are only one part of a larger institutional framework (composition of rules, norms and standards) that governs formal mechanisms for knowledge exchange. Other components of this framework include the ways that firms seek IP and identify its spontaneous generation, the mechanisms for assuring intellectual property right (IPR) enforceability according to legal standards (e.g. making patent applications), how IPRs are ‘bundled’ together into packages for licensing, the terms of IP licensing, and contracts for the provision of ancillary knowledge in support of knowledge transfer accompanying IP licensing. Collectively, these processes are governed by the interaction between firm strategic management and an evolving set of legal standards defining IP and the contractual exchange of IPRs. In addition, the operation and performance of the IPR system is inter-dependent with the social capital embedded in sectoral systems through which trust, communication, and collaboration play a central role in knowledge exchange.

In examining IPRs as one component of a larger system of knowledge exchange, it is possible to develop alternatives to the traditional view of IPRs as ‘competitive property.’ Such alternatives involve examining new forms of governance of knowledge exchange in areas with substantial technological complexity and organisational interdependency or how knowledge exchange is organised where IPRs are viewed as problematic, as in some areas of technology and many forms of cultural expression. Changes in the IPR system and the external environment are influencing the evolution of the system of knowledge exchange, new approaches to understanding the economic and social effects of IPR can be derived and new insights into the ways in which IPRs do or do not provide the basis for market power or monopoly. These new insights are necessary to avoid unintended and unwanted effects that may emerge from ‘reduced models’ that only focus on the trade-off between the exclusivity of IPRs and the incentives to innovate. Research in this area is expected to provide important new and policy-relevant evidence concerning the consequences of the current operation, as well as opportunities for alteration, of the IPR system.

**SECOND RESEARCH ACTIVITY LINE 2 (RAL2): THE CREATION, ACCUMULATION AND EXCHANGE OF KNOWLEDGE IN NETWORKS, SECTORS AND REGIONS**

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Most of the issues mentioned in the Call under Priority 7 Research Area 1.1 and included among the DIME Challenges are taken up by the second Research Activity Line RAL2. It will shed light on hybrid configurations such as the role networks play in the management of collective coordination problems related to knowledge creation, accumulation and exchange; it will look at entrepreneurship as an effective tool to foster the generation of new knowledge, innovation and innovation systems; it will focus on activities occurring at the meso level (i.e. sectors, regions and territorial clusters).

More particularly, RAL2 moves the focus of the investigation from the micro level of RAL1 to a higher level of aggregation by looking at the relationship between knowledge and innovation through the analysis of networks, systems, geographical clusters and industries. The analysis will focus on the way heterogeneous capabilities are networked and coordinated within sectoral systems, territorial clusters and institutional frames. The dynamic analysis of systems of innovation, industries, networks, regions and institutions will enhance our understanding of the structuring forces that organize knowledge, innovation and economic activities at the meso-level.

RAL2 could be seen as combining four different complementary focuses. First, the analysis of the dynamics of networks at the local, regional or sectoral basis is used to analyse how knowledge created by heterogeneous agents, individuals and firms interact and grows on a decentralized basis to result in complex systems. Second, the analysis of knowledge-based entrepreneurship is used to investigate the impact of this type of entrepreneurship on the dynamics of industries, territorial clusters and regions. Third, the analysis of knowledge creation, accumulation and diffusion within sectoral systems focuses on the structure and dynamics of these systems arising from the interaction among firms and other organizations such as universities, government, financial organizations and so on. Fourth, the mechanisms through which knowledge and information is distributed and aggregated are used to understand the emergence and growth of markets at the local, regional, national or global level.

From a policy-making perspective, RAL2 helps to identify key dimensions for public policies, and the ways they can be implemented. Also managers at the firm level will benefit from a better understanding of the geographic and institutional settings of economic activities.

From the methodological viewpoint, the goal of RAL2 is to integrate different scientific fields such as economics, geography, management science, political science, cognitive science, technology studies as well integrate sub-fields within the same discipline (such as regional economics, industrial economics, economics of innovation, economics of knowledge and institutional economics). Similarly, it aims at integrating several methodologies and tools of analysis such as case studies, conceptual work, quantitative analyses, formal modelling and simulations techniques.

The RAL 2 has set up 4 main objectives for its 5-year programme:

**Objective R2.1: To understand the dynamics of networks and knowledge creation**

*The focus will be to analyse empirically and theoretically the determinants of emergence and*
development of networks of knowledge and assess the geographical implications of their evolution. The purpose is to employ empirical and theoretical results (using simulation techniques as well as experimental economics), advance suggestions and formulate guidelines for policies on the role of networks in promoting growth and development at the country and regional levels.

Objective R2.2: To analyse knowledge based entrepreneurship and its relations to industries and clusters

New firms are one of the challenges of European growth and competitiveness. RAL2 will appraise the different roles played by new firms as well as corporate entrepreneurship in determining the evolution of industries. Particular attention should be addressed to the consequences of knowledge-based entrepreneurship for the evolution of territorial clusters.

Objective R2.3: To enlighten the intertwining between sectoral systems and geography

The purpose is to improve our understanding of the functioning, the determinants and the knowledge as well as geographical boundaries of sectoral systems of innovation. Usually these different approaches are taken separately by economists, geographers or sociologists. DIME aims to apply different methodologies to the analysis the dynamics of industries, in order to take into account the multi-dimensionality of the evolution.

Objective R2.4: To analyse the emergence and growth of new markets

Multidisciplinarity allows certainly a deeper understanding of the factors, both economic and institutional, that influence the functioning of existing markets. Economic sociology and geography will assure for new insight to the phenomena. In particular DIME proposes to identify new markets and apply its understanding to the study of their emergence.

RESEARCH ACTIVITY LINE 3 (RAL3): DYNAMICS OF KNOWLEDGE ACCUMULATION, COMPETITIVENESS, REGIONAL COHESION AND ECONOMIC POLICIES: A MICRO-TO-MACRO-APPROACH

The macroeconomic evidence that knowledge and innovation are the prime drivers of the growth in economic well-being is overwhelming. Obviously, this view is also behind the European goal, expressed at the Lisbon Summit in 2000, to become by 2010 “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”.1 Recent convergence between, by and large, an economic and a sociological approach to innovation dynamics emerging in networks of interacting actors, as explored in RAL2 of the DIME programme, have taught us that innovation and knowledge generation are both about capabilities and organization. Innovation is a collective phenomenon, the outcome of which depends both on the quality of the players and the way in which they interact.

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1 Presidency Conclusions, Lisbon European Council, 23 and 24 March 2000, para. 5.
The traditional view on the relationship between technology and economic growth, on the other hand, has been dominated by an economic theory dealing mainly with capabilities, which is expressed in the economist’s main line of reasoning as the idea that knowledge can be enhanced by investment in R&D and related activities. Although such aspects as the relation between basic and applied R&D are taken into account, it is fair to say that the economic theory of the organization of the knowledge creation process is underdeveloped.

This RAL picks up the challenge to take these issues, which were developed in detail at the level of actors, regions and sectors in the previous RALs, to a higher level of aggregation. It thus asks the fundamental question how interactions at the micro- and meso-level will feed into the macro-relationship between knowledge and the development of the European Union in the global economy. Three main objectives emerge:

**Objective R3.1: Understanding the factors of competitiveness of European Regions, sectors and countries**

This objective addresses the fundamental issue of European competitiveness. It investigates the factors affecting the competitiveness of European regions, sectors and countries, both from a qualitative and quantitative way. In qualitative terms, the aim here is to identify the regions and sectors that play a leading role in the European economic structure, by means of case studies of sectors and technologies in European regions, using also the insights from RAL 2. From a quantitative point of view, the approach will be to establish the relationships between competitive performance and the factors underlying it using econometric methods.

**Objective R3.2: How to design policies to promote economic and social cohesion**

The focus of the second objective shifts more explicitly to the analysis of the issue of regional cohesion, recognizing that European diversity is especially large at the regional level. The traditional policy instrument aimed at increasing regional cohesion, i.e. the Structural Funds have now come under pressure both by ‘internal’ dynamics related to the issue of their effectiveness, and by ‘external’ factors such as the enlargement of the EU. This topic addresses these issues with the aim to provide an outlook on the future of regional cohesion and policies aimed to increase this in the EU.

At the micro- and meso-level, a theory about emergence of structures has proven to be the best perspective for looking at innovation dynamics. Specific ways of interaction between actors in the innovation process (firms, consumers, policy makers) are seldom designed in a top-down way with the explicit aim to reach some well-defined optimal result. Instead, interactions at the micro-level lead to various, more or less stable, forms of organization at the meso-level. Such a perspective has successfully been applied to analyze and explain relatively isolated phenomena, such as the specific trajectory along which an industry life cycle proceeds, or the lines along which a regional system of innovation can be observed to be organized. Certainly one main conclusion coming from these lines of work is interaction between different ‘parts of the system’ may lead to surprising dynamics, and that there is not a single optimal way of these parts relative to each other.

**Objective R3.3: Towards new foundations to macroeconomic policies**
Although recent developments have enhanced our understanding of the nature emergent phenomena and the way in which they come into existence, it is probably fair to say that our understanding of how such emergent trends may affect the performance of larger economic systems, such as the European Union, is still in its infancy. The last objective is to apply these notions to the issues of technology policy and (more traditional) macroeconomic policies, and aims to apply a micro-to-macro bottom-up way of modelling this dynamics. The proposed way to do this is both by means of implementing a convergence between the traditional ways of looking at macroeconomic policies and technology policies (incorporating both demand-pull and supply-push approaches), and by implementing more explicitly micro-founded theories.

3.3 Spreading of excellence activities

STRUCTURAL ACTIVITY LINE 3 (SAL3): DISSEMINATING TO AND INTERACTING WITH STAKEHOLDERS

An important dimension of the activities of a NoE, in addition to the other structural activities is the exchange of knowledge and practices within the relevant scientific communities but also between these communities and the stakeholders. For a field such as DIME, the stakeholders are of an extraordinary diversity and one of the challenges is to work with these stakeholders and to benefit not only from their experiences but also from their diversity. The objectives and the WP that we are proposing are exactly meant to deal with both the richness and the specificity of the different ‘milieus’.

We have defined basically three types of stakeholders, independently of their legal characteristics.
- ‘policy makers’, and policy ‘decision makers’ and ‘designers’, belonging directly to the policy arena or to their supporting staff. They are situated at the local, regional, national and European / International scenes. They belong to governmental, or non-governmental organisation, to public administrations as well as to private ones; they are national or regional specific or generic…
- the ‘industrialists’, are connected, integrated, interacting strongly with the production of goods and services. Usually, this category is limited to private firms. Here we also consider their associations (NGO), the consulting firms and related activities, their specific training organisations (such as Enterprise specific ‘universities’)…
- the ‘local actors’, i.e. all the actors at the regional and local levels. They include Development agencies (at regional and local levels), civil service officers, University/Industry transfer personnel…

There is certainly some overlap between the 3 types of stakeholders, but for each of the groups specific tools are designed and implemented in order to assure dissemination and interactions.

It is a core belief of the DIME NoE that knowledge is produced by interactions and diversity, and the scope of this Structural activity is to apply that belief to ourselves and to develop interactions with the diversity of our stakeholders.
Objective S6.1: Establishing a Stakeholder Advisory Committee to DIME
We need to be able to grasp the contents and the needs of our stakeholders, to have an integrated body into DIME. It is the main purpose of the Stakeholder Advisory Board. It main focus is to assess and advise the Executive Committee about its activities. It is composed of 8 members representing the range of stakeholders and appointed by the Executive Committee of DIME. Its function is a key element for the credibility and the coherence of the research and structural activities in terms of meeting the general objectives (see Organisation and Management).

More particularly, and to take into account the diversity of situations, it is planned to have specific and targeted ad hoc committees, linked to particular types of stakeholders (see below for more information).

Objective S6.2: Developing dissemination and interaction mechanisms towards policy makers
Policy makers, policy decision makers and developers are seeking direct access to scientific knowledge relevant to their main concerns at a given period in time. The objective of DIME is to support an activity which allows such interfaces in an independent way. DIME will provide room for ‘free speeches’ of reputable scientists in the field of social sciences on critical subjects in the field of DIME with the only constraint to be relevant to Europe in the broad sense.

Objective S6.3: Organising opportunities to meet and interact
To benefit from the diversity it is not sufficient that DIME has “bilateral” relationships with each type of stakeholders, but DIME needs and should create opportunities to meet them in a collective and congruent way. Such opportunities are usually rare. DIME should be one of the initiators, the research field of DIME being at the crossroad of many interests, and constituting a common challenge for all the stakeholders.

Objective S6.4: Developing dissemination and interaction mechanisms towards industry
The key issue for the interactions and dissemination towards industry-oriented actors is to find a common ground of interest. DIME wants to avoid the usual presentation of ‘final’ results of abstract and disconnected research programmes. DIME wants to provide a locus of interaction for international scholars as well as practitioners.
DIME intends to develop an activity which aims to fill the gap between practice and science identifying a specific boundary object that will enable researchers and practitioners to define a common language to interact, while retaining their specific cognitive approaches to problem solving. A boundary object is an artefact, a document or a concept that can help people from different communities build a shared understanding. Boundary objects will be interpreted differently by the different communities, and it is by acknowledging and discussing these differences that a shared understanding will arise.

The first boundary object around which we propose, during the initial period of 18 months, to structure the dialogue within DIME and between DIME and practitioners is the concept of modularity.
Objective S6.5: Developing dissemination and interaction mechanisms towards local actors

Development Agencies throughout Europe and beyond are facing unprecedented pressures to change their inherited modes of operation in the face of globalisation, the knowledge economy and the imperatives to boost innovative entrepreneurship. Having evolved as economic strategy administrations with skills in place - marketing, factory building and attraction of foreign direct investment - they now find themselves confronted with the demands of relocation of foreign firms to Eastern Europe, North Africa, India and China to name a few destinations.

The objective of DIME is to design specific bridges, and to develop answers to knowledge demands from Development Agencies that can be interactively supplied by DIME members in the form of conferences and workshops, in-house training courses or single advisory exercises. However this should not be a one-way transfer process but rather an exchange and academics should benefit from the practical experience of stakeholders and by confronting their knowledge they should together provide for a better understanding of the needs and problems at stake and come up with solutions to compensate deficiencies.

4. Gender Action Plan

Although the gender imbalance in the field of research covered by DIME may not be as striking among the younger generation of researchers as in other disciplines and topics, a concerted effort by DIME participants is necessary to promote equal opportunity. As can be seen from the original proposal, DIME relies on a number of women to lead some of the work packages, both in integrative and research activities as well as in dissemination activities. This however takes stock of existing competences but DIME must go beyond and propose policies that can promote a better involvement of female students and researchers and a better consideration of female specific topics.

The promotion of gender equality should start at a very early stage. Considering the coverage of DIME this means at the Master’s and PhD levels. Some easy measures will consist in positively discriminating in the selection process for participation in DIME sponsored training; it is expected that funds will be too scarce for supporting all participants in training programmes of various kinds and DIME will help female participants as much as needed. Participation will provide a clear indicator.

One aim of the development of distant learning in the field of DIME will be to reach larger parts of the population with a more difficult access to classes; this is in particular the case of women, especially with families who might find it more difficult to attend classes and training. Special attention will be devoted to their growing inclusion into these ventures.

The same will apply to mobility. Participating institutions will have to commit themselves to helping families to move. Following the example of the “scientific visa” issued by French authorities to allow families to travel with their supported parents, to work and to send their children to school, it will be expected from all institutions participating in the mobility scheme to help with family issues. The new “mobility centres “scheme recently launched by the European Union should provide help and support in that respect. DIME is ready to assist this venture through its own experiences.
In terms of research, the network will keep in mind possible gender-specific issues to be integrated into research approaches. One of the first sessions of the CAC will be used as an opportunity to assess and support the gender dimensions of all our RALs and to implement the relevant measures to use the SALs to enhance gender equal access and participation to all the DIME activities. One of the WP of RALs will for example develop further the gender issues for inventors and in particular academic inventors.

At all levels the DIME network will keep gender-disaggregated statistics as a performance indicator.

5. Work package descriptions

Work package description (18 months period, month 1 - 18)

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<td>Participant id</td>
<td>Person-months per participant</td>
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**Objectives**
The work package pursues: 1) Improvement of the integration of fundamental social science research programmes and mutual understanding between social scientists conducting research involving experimental methods (as they are used in social psychology and economics for example), multi-agent simulation modelling, economic theory and complexity theory to examine processes of knowledge mobilisation and collaborative learning in the context of organisational networks between and within individual organisations, 2) Improvement of the resources available for conducting research in these areas, and 3) Efforts to improve the exchange of fundamental conceptual and empirical research approaches and results within the network and more broadly.

**Description of work**
**RA1.1.1** the collaborative review of existing typologies and frameworks that are used to analyse and compare organisational and institutional forms and their implications for practitioners and policymakers.
**RA1.1.2** the collaborative development of a working paper series on methods of conceptualising and measuring organisational and institutional effectiveness in mobilising knowledge and supporting mutual learning processes.
**RA1.1.3** the convening of a workshop to present ongoing research on the theoretical and empirical understanding of the institutional (norms, standards, and incentives) foundations of knowledge mobilisation within organisations and dyadic collaborative exchanges.

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Objectives
A principal objective of this work package is to bring together social scientists with very different perspectives on the knowledge exchange process. This involves an open process of debate and exchange in which evidence-based claims concerning the highly localised or situated generation and exchange of knowledge are confronted with evidence of more dispersed processes of knowledge generation and exchange. The object is to stimulate discourse concerning the extent of localisation of knowledge generation and exchange processes. This context of this discourse is the claim that the circulation of knowledge is highly constrained by local interaction, a claim that has vitally important implications for the prospects of improving economic integration and social cohesion within the present boundaries of the EU as well as the post-accession boundaries. This objective is to be pursued collaboratively and will involve the development of new evidence and synthetic analysis that will be openly debated in workshop and international conference formats.

Description of work
RA 1.2.1 Review of methods for examining communities of practice including creating a ‘test bed’ sample of communities of practitioner-based communities.
RA 1.2.2 Collaborative development of a working paper series,
RA 1.2.3 Workshop and International Conference.

Objectives
To bring together the empirical research efforts of centres from Italy, the UK, Sweden and France with a view towards creating comparable databases and the foundation for extending such databases to other EU member states. To improve the qualitative understanding of researchers and institutional motivations in both universities and private enterprises to engage in collaborative research and knowledge exchange activities. To support the wider understanding of these issues by forming a working paper series with contributions from all of the participating partners. To bring together members of the network (with invited guests) to address these issues in an international workshop.

Description of work
RA 1.3.1 Qualitative Research on Frameworks Regulating University Entrepreneurship
RA 1.3.2 Collaborative Working Paper Series
RA 1.3.3 Convening a Workshop

Objectives
To bring together the empirical research efforts of centres from Italy, the UK, Sweden and France with a view towards creating comparable databases and the foundation for extending such databases to other EU member states. To improve the qualitative understanding of researchers and institutional motivations in both universities and private enterprises to engage in collaborative research and knowledge exchange activities. To support the wider understanding of these issues by forming a working paper series with contributions from all of the participating partners. To bring together members of the network (with invited guests) to address these issues in an international workshop.

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Objectives
A principal aim of the first 18 months research programme is to build collaboration between the researchers involved, who have made major contributions to research and public debate in the area. Achieving this aim involves: 1) engagement in debate concerning the conceptual foundations employed in analysing formal processes of knowledge exchange with specific reference to the evolution of the intellectual property rights (IPRs) system, 2) improvement of the resources (including case studies, working papers, and data) available for conducting research on formal knowledge exchange processes including IPRs, and 3) efforts to extend awareness of the systemic features and processes of change underway in formal knowledge exchange processes within the academic and policymaking community.

Description of work
RA 1.4.1 Collaborative review of the role of IPR in processes of formal knowledge exchange
RA 1.4.2 Collaborative development of working paper series on formal systems of knowledge exchange and the evolving character of the IPR system
RA 1.4.3 the convening of two workshops (one physical and one virtual, i.e. computer network mediated) to present ongoing research on the theoretical and empirical understanding of formal systems of knowledge exchange and the changing influence of the IPR system.

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Activity Type
Other specific activities

Objective
Provide both theoretical and empirical analysis of the nature, role and functioning of networks of knowledge.

Description of work
RA 2.1.1 Extending further the theoretical knowledge of the functioning of networks of knowledge by looking at the relationship between the architecture of the network and the strategies adopted by participants, the characteristics of stable networks, their dynamic properties and collective efficiency.
RA 2.1.2 Improving our empirical understanding of the functioning of networks of co-invention and co-publications by using data on patent, publications and patent citations. Providing new indicators of Science and Technology activity. Improving our knowledge of the geographical impact of the architecture of networks of firms by using novel cross-sectoral micro-level survey data from seven EU countries (Denmark, Sweden, Germany, France, UK, Spain, Finland).

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Activity Type
Other specific activities

Objectives
Provide both theoretical and empirical analysis of the nature, role and functioning of networks of knowledge.

Description of work
RA 2.1.1 Extending further the theoretical knowledge of the functioning of networks of knowledge by looking at the relationship between the architecture of the network and the strategies adopted by participants, the characteristics of stable networks, their dynamic properties and collective efficiency.
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Objectives
Build up a unified framework to analyse the evolution of sectors, territorial clusters and regions by focussing on the entrepreneurial activity of both start-ups and established firms.

Description of work
RA 2.2.1: Improving our knowledge of entrepreneurial activity. Developing a quantitative and conceptual analysis of the ways start-ups find viable positions in new markets. Analysing the contribution of established firms to entrepreneurship in terms of niche creation and strategies of vertical disintegration for product commercialisation.

Work package number 2.3
Start date or starting event: 1
Activity Type Other specific activities
Participant id
Person-months per participant:

Objectives
Provide and analysis of the structure and the dynamics of sectoral system of innovation and production.

Description of work
RA 2.3.1 Understanding the structure, working and geographical boundaries of sectoral systems of innovation by looking at role played by different actors (firms, universities, institutions etc.) and at their interactions in several industries (pharmaceuticals and biotechnology, ICT, machinery and other advanced sectors, services)
RA 2.3.2 Applying different methods of investigation (econometrics, non parametric statistical techniques, formal models as well as history friendly models) to analyse and measure the dynamics of industrial sectors.

Work package number 2.4
Start date or starting event: 1
Activity Type Other specific activities
Participant id
Person-months per participant:

Objectives
Gaining a better understanding of:
- How new markets emerge, how new products and services enter into market mechanisms;
- What are the institutional conditions (what kind of shaping of the “legal system”) required to promote these new markets; which “rules of the game” were actually implemented, namely: how the products are specified and the transactions organised;
- How the agents emerged and through which types of selection process do they survive, grow or disappear, how do they interact and create new emerging rules; what are the geographical boundaries;
- What types of transactions and market mechanisms are observed in this highly regulated
The extent to what regulations influence the behaviour of the agents and shapes the trajectories.

**Description of work**
RA 2.4.1 Focus on e-markets (both B to B and B to C) to stress the specificities of the goods transacted and the learning processes that they imply for consumers, producers and distributors communities; Application of models of search and of social interaction to explain the emergence and role of consumers and professional communities on these markets; Focus on medical related markets to understand the dynamics of the instituting process peculiar to this market; Focus on issues related to GM technologies in food and non-food crops in Europe, a key example of turbulence and radical restructuring of interdependent markets.

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**Objectives**
Measuring technological specialization and international economic performance of countries and regions and analysing the role that knowledge and innovation play as driving forces underlying the search for competitiveness.

**Description of work**
RA 3.1.1 Developing a cross sector-cross region/country quantitative analysis of the determinants of trade dynamics and international competitiveness of European countries by looking at the role of knowledge spillovers, international technological specialisation.

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**Objectives**
To shed light on the determinants of regional technological advantage and its impact on regional disparities in GDP per head.
To appraise and evaluate existing policy measures aimed at regional cohesion, so as to identify the impacts different sorts of policies have.

**Description of work**
RA 3.2.1 Analysis of the role of technology factors in regional disparities
RA 3.2.2 Appraisal of policy
Objectives
To confront thinking about macroeconomic policymaking with insights about the dynamics of technology and innovation.
To develop a theoretical approach to macroeconomic policy and technology policy founded in the theoretical and empirical results developed in the DIME programme as a whole.

Description of work
RA 3.3.1 The role of technology in macroeconomic policy processes and decision making; Formulating a theoretical framework for modelling processes for technology and knowledge creation in the context of macroeconomic models, supported by econometric work and by the theoretical work coming out of RAL1 and RAL2 in the DIME project.
RA 3.3.2 Microlevel heterogeneity and aggregate policies: the role of technology dynamics; Collect longitudinal datasets on large populations of firms and apply to these several new econometric methods to analyse these datasets as well as data on macroeconomic trends and fluctuations, in order to identify the stochastic nature of macro- or regional dynamics; Developing the theoretical frameworks in which multi-agent models of micro-to-macro interaction can be developed, and formulating actual models for a small part of the EU (e.g., the Eurozone countries); some exercises in calibration of these models.

Objectives
The general objective of the WP is to analyse the existing offers in terms of relevant training in the field of DIME and to design and study the feasibility condition to implement and coordinate a full set of training programmes. The most relevant trainings will be implemented during this first 18 months.

Description of work
SA 4.1.1 Mapping and reviewing existing training programmes at doctoral and master levels
SA 4.1.2 Developing new programmes at the doctoral level and developing exchanges
SA 4.1.3 Developing new programmes at the master level and developing exchanges
SA 4.1.4 Developing pilot modules of short courses
SA 4.1.5 Specific actions towards new target groups
Objectives
To provide access to doctoral and masters education (in DIME related areas) to students who are not able to attend traditional universities because they cannot afford to stop working and/or because they live in hard to reach geographical areas which they cannot leave. To develop a Long Distance Learning programme and specific modules.

Description of work
SA 4.2.1 Preliminary study for a long distance learning programme in the field of DIME
SA 4.2.2 Exploration of the nature and content of the master and doctoral programme
SA 4.2.3 Setting up the courses to be included
SA 4.2.4 Development of a course materials
SA 4.2.5 Development of a Project focused learning programme

Work package number | 5.1 | Start date or starting event: | 1
Activity Type | Other specific activities
Participant id
Person-months per participant:

Objectives
The general objective of the WP is to develop the Intranet and then the Extranet of DIME.

Description of work
SA 5.1.1 Survey among the DIME members to assess needs and to assess the existing resources to be involved in the Intranet; Development of the interface of the website
SA 5.1.2 Development of on-line tools to manage working-group, to allow researchers to decentrally provide information about themselves and their capabilities, to store and retrieve information; Development of on-line tools to manage specific tasks like events, controlled publication of working documents, or budgeted research programs
SA 5.1.3 Edition of the Intranet and of the Extranet; Establishment of cooperative relationships with other websites (including those of the members of the network); Training of the users; Survey among the users to assess further needs and quality of service.

Work package number | 6.1 | Start date or starting event: | 1
Activity Type | Other specific activities
Participant id
Person-months per participant:

Objectives
To develop the interfaces with stakeholders

Description of work
Establishing a Stakeholder Advisory Committee (SAC)  
Creating a DIME Policy Group

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**Activity Type**  
Other specific activities

**Participant id**

**Person-months per participant:**

**Objectives**
To provide a locus of interaction with industrialists, using a "boundary object" i.e. the concept of modularity

**Description of work**
SA 6.2.1. Modularity, knowledge and strategy  
SA 6.2.2. Modularity and organisation design

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**Activity Type**  
Other specific activities

**Participant id**

**Person-months per participant:**

**Objectives**
Establishing a forum specific to the interactions with local policy makers  
Developing interactive learning between local regional developers and the scientific community

**Description of work**
SA 6.3.1 Establishing a forum of interaction between researchers and local policy makers  
SA 6.3.2 Thematic workshops  
SA 6.3.3 Training activities  
SA 6.3.4 Sharing of experiences

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**Activity Type**  
Other specific activities

**Participant id**

**Person-months per participant:**

**Objectives**
Fostering the integration of researchers and research teams from new member states

**Description of work**
Information diffusion towards targeted communities  
Specific calls for tenders