



EUROPEAN
COMMISSION

COMMUNICATION FROM THE COMMISSION

**Improving knowledge transfer
between research institutions
and industry across Europe**

ANNEX

**Voluntary guidelines for universities and
other research institutions to improve
their links with industry across Europe**

EUROPEAN COMMISSION

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FOREWORD

FOREWORD



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In today's global world, generating new knowledge and turning it into new products and services is crucial to maintain and enhance the EU's competitiveness. Even more so, it is a precondition for sustaining the "European Way of Life". Innovation and excellence will positively impact on our lives in very different ways: through improved medicines, more efficient and sustainable energy resources, and with new technological solutions to protect our environment or to guarantee the security of the citizens. Transforming the results of scientific research into new commercial products is, however, a complex process involving a broad range of actors. We need to ensure that researchers and industry work closely together and maximise the social and economic benefits of new ideas.

The European partnership for growth and jobs highlights the importance of exploiting Europe's research results and makes it clear that simply increasing public investment in research is not all it takes – we need to create a framework which facilitates this process. More than ever, we need to pool efforts and remove the barriers that hinder collaboration between researchers and industry; we need to ensure that Europe operates as a 'single market for knowledge'; and we need to develop platforms where the European scientific community and European industry can work and innovate together.

This Communication calls for our researchers to recognise the advantages of working more closely with business and vice-versa, for research assessments to consider innovation as well as academic excellence, for business to increase its investment in R&D, and for public administrations to make the mobility of researchers between these sectors easier.

The accompanying Guidelines offer operational guidance to research institutions regarding the management and exploitation of the intellectual property they generate, especially in the context of collaboration with industry.

Making sure that research is a source of innovation and that it improves Europe's competitiveness in global markets is a shared challenge. We all have to make an effort to bring it about, but we all stand to gain in the end.



Janez Potočnik
European Commissioner
Science and research



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Enterprise and Industry

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EUROPEAN COMMISSION

Directorate-General for Research
Directorate-General for Enterprise and Industry

**Improving knowledge transfer
between research institutions
and industry across Europe:
embracing open innovation.
Implementing the Lisbon agenda**

**Communication from the Commission to
the Council, the European Parliament,
the European Economic and Social
Committee and the Committee
of the Regions**

2007

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INTRODUCTION

INTRODUCTION

A strong scientific knowledge base is one of Europe's traditional key assets and has allowed us to become world class in several research fields¹. In spite of these merits, the global position of European research is currently being challenged by a rapidly changing research landscape. Simultaneously, European research is faced with the implications of globalisation of markets and industries, digitalisation and new technologies, as well as a need to address societal issues such as an ageing population or climate change.

In its broad-based innovation strategy for the EU², the importance of improving knowledge transfer³ between public research institutions⁴ and third parties, including industry and civil society organisations was identified by the Commission as one of ten key areas for action. This Communication responds to this need and it presents a number of orientations for Member States. It sets out ideas on how Member States and the Community can act together, in a mutually reinforcing way, to overcome some of the existing obstacles, in particular in terms of promoting the trans-national dimension of knowledge transfer. It is accompanied by a Commission Staff Working Document on "voluntary guidelines for universities and other research institutions to improve their links with industry across Europe" which are based on good practices identified by a number of national public authorities and the work of various European stakeholder associations.

¹ Europe currently has the highest per-capita numbers of science and engineering graduates and academic papers (Key Figures – http://ec.europa.eu/invest-in-research/monitoring/statistical01_en.htm)

² "Putting knowledge into practice: A broad-based innovation strategy for the EU" – COM(2006)502.

³ Knowledge Transfer involves the processes for capturing, collecting and sharing explicit and tacit knowledge, including skills and competence. It includes both commercial and non-commercial activities such as research collaborations, consultancy, licensing, spin-off creation, researcher mobility, publication, etc. While the emphasis is on scientific and technological knowledge other forms such as technology-enabled business processes are also concerned.

⁴ For the purpose of this document the term "Research Institutions" is used to cover all higher education institutions (irrespective of their name and status in the Member States, e.g. universities, colleges or polytechnics) and public research centres and organisations.

1. A NEED FOR ACTION

One important problem is how to make better use of publicly funded R&D. Compared to North America⁵, the average university in Europe^{6,7}, generates far fewer inventions and patents. This is largely due to a less systematic and professional management of knowledge and intellectual property by European universities. Moreover, efficient knowledge transfer in European research institutions is hindered by a range of factors, including: cultural differences between the business and science communities; lack of incentives; legal barriers; and fragmented markets for knowledge and technology⁸. All of these factors adversely affect European growth and jobs creation.

That said, the importance of knowledge transfer in boosting competitiveness and contributing to the effectiveness of public research is increasingly recognised by Member States, and is reflected in their National Reform Programmes developed under the Lisbon strategy. Numerous initiatives are being taken aiming at promoting collaboration between research institutions and businesses. Several Member States have taken initiatives to promote and facilitate knowledge transfer (for instance new laws, IPR regimes, guidelines or model contracts) and many others are planning to intensify their efforts in this direction. How-

ever, these initiatives are often designed with a national perspective, and fail to address the transnational dimension of knowledge transfer. There is, therefore, a need for a more level playing field regarding university-industry R&D interactions in Europe.

European universities and other research institutions are equally realising their changing role in the globalized economy and have undertaken interesting initiatives. They realise that they are no longer simply providing the local area with graduates but that they find themselves competing on a global scale for students, researchers and industrial partners. In turn, they realise that they will have to provide world class research to attract said students and researchers in the future. In order to remain attractive, they will need to open up to business and international collaboration, which may also help leverage new funds. Sharing knowledge in particular through R&D collaborations with business – while a potential source of income for research institutions – may well give an important boost to both quantity and quality of the research undertaken.

5 AUTM survey – <http://www.autm.net/events/File/FY04%20Licensing%20Survey/04AUTM-USLicSrvy-public.pdf>

6 ProTon survey – http://www.protoneurope.org/news/2006/art2006/artjanmar06/2asfy2004/attachment_download/file

7 ASTP survey 2006 – http://www.merit.unu.edu/publications/docs/200605_ASTP.pdf

8 http://ec.europa.eu/invest-in-research/pdf/download_en/consult_report.pdf

2. INDUSTRY AND RESEARCH INSTITUTION - WORKING TOGETHER TOWARDS A KNOWLEDGE ECONOMY

The need for sharing knowledge between research institutions and industry has become increasingly evident in recent years. Historically, research institutions were perceived as a source of new ideas and industry offered a natural route to maximising the use of these ideas. However, the past decade has seen a significant change in the roles of both parties.

Many companies are developing open innovation approaches to R&D, combining in-house and external resources, and aiming to maximize economic value from their intellectual property, even when it is not directly linked to their core

business. In particular, they have begun to treat public research as a strategic resource.

In parallel, it has become clear that research institutions need to play a more active role in their relationship with industry in order to maximize the use of the research results. This new role⁹ requires specialist staff to identify and manage knowledge resources with business potential, i.e. how best to take a new idea to market, ensure appropriate resources (funding, support services, etc.) to make it happen, and to obtain adequate buy-in by all stakeholders.

2.1. CREATING THE CONDITIONS FOR SUCCESSFUL KNOWLEDGE TRANSFER

It has been recognized that the involvement of business in the governance of research institutions can help to orient research and education activities towards the needs of society, bring expertise to support knowledge transfer activities, and signal willingness to introduce innovation-oriented approaches in all activities. Such interaction has helped to facilitate inter-sectoral mobility, namely through temporary staff exchanges as well as through the hiring of young graduates by industry.

Furthermore, many European research institutions have set up knowledge transfer offices in recent years, aiming to improve collaboration and exploitation of research results and their uptake by business. Their success is largely dependent on the skills and competencies of their staff as well as the strategic role assigned to them and their

managerial autonomy. **The personnel working on knowledge transfer must possess a wide range of skills in order to carry out their tasks effectively.** However, relatively inexperienced staff is often appointed to such positions. Continuous professional development exists in a limited number of countries but it is often inadequate in terms of cost and/or delivery. The Commission is currently studying ways to address this problem. Seven Member States¹⁰, with the support of the Commission¹¹, are building a framework to provide new knowledge transfer officers with a qualification which is mutually recognised between them. Furthermore, PROTON Europe¹², building on the UK's *Institute for Knowledge transfer*¹³, is looking to create an accreditation scheme for existing knowledge transfer officers based on their experience and track record.

⁹ When referring to universities, this new role is also known as the "third mission."

¹⁰ AT, NL, FR, IT, SE, BE, LT.

¹¹ OMC-Net project "Certified trans-national technology transfer manager."

¹² one of Europe's leading knowledge transfer associations – <http://www.protoneurope.org>

¹³ <http://www.ikt.org.uk/>

To perform knowledge transfer activities effectively, research institutions need to have sufficient autonomy to recruit experienced knowledge transfer staff on a competitive basis. Increased mobility between the public and private sectors will help research institutions' researchers and managers identify shared needs with industry. However, certain rules and administrative obstacles can discourage such mobility. For instance, rules relating to internships and labour-market regulation, in particular those dealing with social security and pension arrangements, can impede staff exchanges. Furthermore, in some countries, public-sector researchers are not allowed to work for industry on a part-time, consultancy or other basis¹⁴.

There is also a need for existing resources to be made more accessible. This can be partially achieved through co-ordination. At present, certain research institutions have staff who actively pursue links with industry, but who do not interact amongst themselves. By pooling their knowledge transfer competencies, they can ensure that such skills are made more widely available throughout the research institutions. Furthermore, significant benefits may arise by outsourcing certain specialised functions or by pooling resources or R&D results (and associated IP rights) between several research institutions¹⁵. Examples of pooling resources between several knowledge transfer offices include the patent marketing and knowledge transfer agencies established in Germany, the *North of England Science Initiative* or the Belgian *VIB*¹⁶. Alternatively, such pooling can address a single industry sector (for example the *White Rose Consortium*¹⁷) or a single knowledge transfer activity.

It is particularly interesting to note the range of benefits which can be obtained by pooling patents between research institutions. A patent pool can help create a critical mass of intellectual property which is necessary for an innovative idea to be attractive to the private sector. If marketed properly, every relevant industry player could be made aware of the research centres that generated the IP and this would help catalyse links with industry. Furthermore, building a patent pool can lead to stronger relationships between knowledge transfer offices and provide a basis for further inter-institutional endeavours. Such pooling of resources appears to be particularly appropriate for those research institutions that do not have the scope and volume of exploitable research results to justify the establishment of a knowledge transfer office. Where it is appropriate, **Member States should actively promote and support the pooling of resources among research institutions.**

However helpful such pooling of resources can be at a national or regional level, these initiatives rarely address the transnational dimension. To address this shortcoming, the Commission created a trans-European network aiming to facilitate transnational technology transfer, namely the *Innovation Relay Centres (IRCs) network*¹⁸. The IRCs are based in 33 countries and provide personalised assistance for universities and industry (especially SMEs). By collaborating closely with a leading European university knowledge transfer association¹⁹ they have created a simple and effective system which allows universities to share information on new, commercially relevant technologies in a structured manner with companies across Europe.

14 SEC(2006)971

15 See *Irish report on technology transfer* – <http://www.universitiesireland.ie/news/techtransfer.php>

16 <http://www.vib.be>

17 <http://www.whiterose.ac.uk>

18 <http://irc.cordis.lu>

19 *ProTonEurope* – <http://www.protoneurope.org>

2.2. PROMOTING AN ENTREPRENEURIAL MINDSET

The need to publish and make results freely available is often viewed as being incompatible with industry's need to keep information confidential and protected by intellectual property rights such as patents. However, experience shows that promoting innovation and disseminating new knowledge can be compatible, provided that intellectual property issues are understood and managed professionally. Interaction on these points can be facilitated by tools such as the CREST decision tree²⁰, model contracts such as the UK's *Lambert agreements*²¹, or guidance such as the Danish document on *Contacts, contracts and codices*²², as well as through awareness initiatives by the European and national patent offices. The *Responsible Partnering initiative*²³, developed by 4 major European university and industry associations (EIRMA, EUA, PROTON, EARTO), presents key insights into how effective research collaboration can be created. **Member States have a role in the development and delivery of such initiatives and should support them actively.**

Various "creative commons"²⁴ approaches (open access, open publications, open software...) are increasingly endorsed by many universities. These mechanisms can ensure a more effective dissemination of results although in certain cases formal protection (e.g. design rights, patents or material transfer agreements) may be necessary if a product is to be brought to market successfully. It is therefore important to ensure that researchers are aware of the benefits of both approaches and that decisions are made on the basis of socio-economic impact. Given that the rules governing the ownership of publicly-funded R&D results still vary across Europe, **it may be**

appropriate to revisit in the near future the question of a single European ownership model for publicly funded research.

Fostering an entrepreneurial mindset²⁵ as well as the relevant skills among researchers can greatly contribute to the reduction of the cultural divide which exists between research institutions and industry. In order to foster interactions between them, researchers need to be provided with basic knowledge transfer and business skills. Entrepreneurship education should be offered to provide training on how to manage intellectual property, interact with industry, start and run a business. Although tertiary education is normally highly decentralised, there are examples of national strategies for promoting entrepreneurship in higher education (e.g. the *Science Enterprise Challenge* in the UK). To help address the question of content of such courses, **the Commission is currently funding a project²⁶ to create a core set of training materials to raise awareness of the importance of IP management issues amongst a variety of actors.**

In addition, one of the most effective methods of developing such skills and sharing knowledge is the movement of staff between research institutions and industry. The Commission has been an active proponent of such activities through the "*Marie Curie Industry-Academia Strategic Partnership*" scheme which supports the development of such long-lasting collaborations via the exchange of researchers. The new *research, development and innovation State aid framework* has also introduced a measure on aid for the loan of highly qualified personnel from research institutions (or large companies) to SMEs.

20 Crest decision tree – http://ec.europa.eu/invest-in-research/policy/crest_cross_en.htm

21 Lambert agreements – <http://www.innovation.gov.uk/lambertagreements>

22 Contacts, contracts and codices – <http://billed.di.dk/wimpfiles/lores/image.asp?objno=/686201.pdf>

23 <http://www.responsible-partnering.org>

24 See e.g. <http://creativecommons.org>

25 COM(2004)70.

26 IP4Inno – <http://www.proinno-europe.eu/ip4inno.html>

In many countries, research institutions have created reward systems whereby the inventor receives a share of any profits made when licensing or spinning off inventions. An illustrative model is one where profits are split evenly between the researcher, the research institution and the business partner. However, although

some financial incentives may apply, many staff remain reluctant to take part in such activities, especially as they are not taken into account for career progression. **It is therefore important that the appraisal criteria also take into account other activities such as patenting, licensing, mobility and collaboration with industry²⁷.**

3. MAKING IT HAPPEN: MEMBER STATES AND THE COMMUNITY WORKING TOGETHER

Both research institutions and industry can benefit from public policy support at regional²⁸, national and Community level. This support can take different forms, from the promotion of exchange of good policies to direct financial support to knowledge transfer mechanisms. Member States cooperation activities in the *European Research Area* (ERA) and through the Lisbon strategy via the implementation of the “3% action plan”²⁹ continue to deliver concrete results. **Member**

States should make full use of the available funding sources, and encourage research institutions to do so. Cohesion policy funding (the *European Regional Development Fund* and the *European Social Fund*), national funding in line with the new *Community framework for State aid for research and development and innovation* (RDI)³⁰, and the *European Framework Programmes* should all be used to leverage more links between industry and research institutions.

3.1. THE EUROPEAN INSTITUTE OF TECHNOLOGY

The establishment of a *European Institute of Technology* (EIT) is a good example of how the EU can implement innovative governance models - as set forth in the modernisation agenda for universities - to inspire change and accelerate the processes of knowledge transfer in existing institutions, as well as increase their links with industry, as an integral part of the strategy to harness Europe’s innovation capacity. Since the Commission first launched the idea in 2005, a wide consultation process and an extensive impact assessment work have taken place. The Commission expects that discussions

in the European Council and Parliament will be completed in 2007 and that the EIT will become operational in 2008.

The EIT is a visionary and bold endeavour for the long term. It will focus on the development and integration of all aspects of the knowledge triangle – innovation, research and education – in areas that present challenges for Europe’s future. **In particular, the EIT will promote research institutions - industry interactions and knowledge transfer.** It will feature a balanced composition of both business and academic

27 *EUA Vienna conference conclusions* – http://www.eua.be/fileadmin/user_upload/files/EUA1_documents/report_web%202210.06.1161606166446.pdf

28 *E.g. in support of clusters, “business eco-systems”*

29 COM(2003)226.

30 *RDI State Aid Framework* – OJ C 323 of 30.12.2006

expertise in its governing body and will provide a reference model for experimenting with more business-oriented approaches to governance.

The EIT will bring important added-value to existing EU initiatives in the area of knowledge transfer:

- The business sector will play a crucial role in every EIT activity. The final goal of the EIT is clearly innovation and translation of the results of research and education into innovative solutions.
- It is intended to be Europe's innovation flagship, sending a clear message of Europe's commitment to reinforce innovation and inspire change in its research institutions.
- It will integrate for the first time the three

components of the knowledge triangle on an equal footing. Education especially is seen as an essential element in the innovation process.

The Commission has proposed the establishment of an 'integrated EIT' model combining both a bottom up and a top down approach based on a two-tier structure. Firstly, a governing board representing both business and academia will provide strategic guidance on the selection, evaluation and coordination of *Knowledge and Innovation Communities* (KICs). Secondly, a set of autonomous KICs will be selected to carry out the work of the EIT across Europe. They will fully integrate and perform innovation, research and education activities on designated themes. They will be joint-ventures of partner organisations representing universities, research organisations and business.

3.2. CO-OPERATION ACTIVITIES

Efforts to enable public research institutions to develop more effective links with industry, in particular SMEs, have been at the core of Member States and Community cooperation activities to implement the 3% R&D target of the EU's Growth and Jobs strategy. These activities have taken place within the *Committee for Scientific and Technical Research* (CREST), which acts as an interface to put into practice the open method of coordination, a policy cooperation tool based primarily on exchange of information and best practice. Previous sections refer to some of the results of this cooperation that take the form of expert advice, policy recommendations, guidance documents, peer review of national policies and awareness raising initiatives³¹.

These co-operation activities will continue and results should feed into Member States action to improve knowledge transfer and research institutions - industry links. The more relevant policy initiatives should be included in the next generation of National Reform Programmes (2008-2011). As a follow up to a seminar held in Lisbon for national Lisbon coordinators on knowledge partnerships, Member States have forwarded a range of interesting examples. However, these initiatives are obviously often designed from a national perspective, and do not address the trans-national dimensions of knowledge transfer. **The elaboration of concrete initiatives at Community level should be**

³¹ Report of the CREST Expert Group "Promote the reform of public research centres and universities in particular to promote transfer of knowledge to society and industry" – http://ec.europa.eu/invest-in-research/pdf/download_en/final_crest_report_march2006.pdf

explored to support Member State efforts and raise the trans-national dimension of some measures.

Two areas requiring special efforts at Member State and Community level are the development of tailored measures to promote research institutions - SME interaction and of tools to measure progress:

- Promoting research institutions - SME interactions

Most interactions between research institutions and companies involve large firms. This is due to the fact that such collaborations are considered to be more durable and regular than with SMEs.

Evidently, SMEs are a very diverse clientele for knowledge transfer services. Manufacturing SMEs in the high-tech sectors typically have proportionally high R&D budgets and close links to academia as a result of the very short product cycles. In traditional sectors, the capacity of SMEs to actively engage in knowledge transfer activities is typically limited by constraints in human and financial resources. It is therefore important to encourage SMEs to absorb new and external knowledge for faster innovation.

An example of existing good practice is the Netherlands' innovation vouchers scheme whose main objective is to enable SMEs to

buy knowledge and strategic consultancy from research institutions through innovation vouchers (worth €7500) and thus to stimulate interaction and exchange between the knowledge suppliers and SMEs. The knowledge supplier can then hand in the voucher to the Innovation Agency SenterNovem and receive payment. State aid rules allow supporting such consultancy with public funds³².

Member States should use the mechanisms at their disposal to promote such knowledge transfer activities (e.g. innovation vouchers or R&D tax credits allowing the reimbursement of R&D outsourced to research institutions).

- Measuring progress

Monitoring knowledge transfer activities has several purposes including helping research institutions promote what has been achieved for the public good. While several university rankings exist, they mostly rely on academic indicators such as publications and numbers of PhDs, and do not consider performance in the exploitation of R&D results. There is evidence that³³ **the benchmarking of “innovation-related activities”, especially if conducted on the basis of comparable metrics across the EU, would allow research institutions to compare their own achievements at European as well as at national level.** The Commission will set up an expert group in 2007 to tackle these issues.

³² Such support could fall either under the provisions on consultancy in Commission regulation(EC) No 70/2001 on the application of Articles 87 and 88 of the EC Treaty to State aid to small and medium-sized enterprises, OJ L 10 of 13.1.2001, or under point 5.6. of the new RDI State aid framework.

³³ ITTE report on “Improving institutions for the transfer of technology from science to enterprises” – http://ec.europa.eu/enterprise/enterprise_policy/competitiveness/doc/itte_expertgroupreport.pdf

3.3. FINANCIAL SUPPORT

- **State aid**

The new *RDI State aid framework* intends to clarify the State aid rules applicable to R&D&I-funding activities, including the financing of knowledge transfer activities. This clarification was necessary since public research institutions have increasingly acted as private undertakings in domains bordering market activity, making State aid issues more relevant for them.

The framework considers that the primary activities of public research institutions, in particular the conduct of independent research for more knowledge and better understanding, including collaborative research, and the dissemination of research results will normally be of a non-economic character (i.e. there are no goods or services provided on an existing market)³⁴. Knowledge transfer activities have a non-economic character if they are “internal”³⁵ and all income from these activities is reinvested in the primary activities of the research organisations³⁶.

Evidently, any economic activity performed (e.g. consultancy, contract research, renting out infrastructures, etc.) should take place at normal market conditions, and public funding of such activities will generally be considered to constitute State aid, and are subject to the corresponding regulatory provisions.

The new framework also provides that research institutions should separately allocate costs and revenues to economic and non-economic activities, in order to avoid possible cross-subsidisation. To achieve this, it is suggested that **Member States should encourage and facilitate**

the introduction of full cost accounting in research institutions, which will also have the added benefit of facilitating participation in the Seventh Framework Programme. If such measures are not introduced, any public funding in support non-economic activities may be deemed to constitute State aid.

- **EU cohesion policy**

The proximity of research institutions and firms often facilitates knowledge transfer, which emphasises the crucial role which regional and local authorities can play. Support for knowledge transfer activities is available through EU cohesion policy as part of the Growth and Jobs strategy.

For example, cohesion policy’s main instrument, the *European Regional Development Fund* (ERDF), is used to support incubators and science parks (infrastructures and accompanying services) which are an effective means to spin-out knowledge into the market place and can help create better SMEs – university links. Well-run incubators and clusters have significant advantages which make them outstanding instruments of knowledge transfer, most notably for high technology. A distinctive feature is that services are available which increase the likelihood of knowledge transfer occurring successfully. However, as well as support for infrastructure, the ERDF provides co-financing of around €4 bn in the period 2000-2006 for innovation and technology transfer and for establishing networks and partnerships between business and research institutions. The ERDF therefore plays a significant role in facilitating interaction between public research organisations

³⁴ Point 3.1.1 of the framework.

³⁵ By internal nature, the Commission means a situation where the management of the knowledge of the research organisation(s) is conducted either by a department or a subsidiary of the research organisation or jointly with other research organisations. Contracting the provision of specific services to third parties by way of open tenders does not jeopardise the internal nature of such activities.

³⁶ The Commission must be notified of all remaining kinds of technology transfer activities receiving State funding.

and industry, both in terms of regional and trans-regional interaction.

Furthermore, the *European Social Fund* (ESF) provides financial support through the assistance to persons (training, guidance, etc.), and for the development and modernisation of educational structures and systems. In the new programming period (2007-13), there is an increased emphasis on strengthening research and innovation, particularly through knowledge transfer.

The *Community Strategic Guidelines on Cohesion*³⁷ set out an indicative framework for Member States' future Structural and Cohesion Funds strategies and programmes. Encouraging innovation is identified as a major priority and the guideline on "*Improving Knowledge and Innovation for Growth*" indicates a range of knowledge and technology transfer activities which should receive attention. In particular, **Member States' support for co-operation between businesses and universities and for knowledge transfer infrastructures and services should be enhanced**, so as to further strengthen the regional dimension of the knowledge economy.

- The EC Framework Programmes for research & development ("FP") and for competitiveness & innovation ("CIP")

Transnational knowledge transfer has always been at the heart of the *Research & Technological Development Framework Programme* (FP). Indeed, most FP projects involve a mix of participants from the public and private sectors,

from several countries. Certain thematic areas, such as the ICT sector, have been particularly successful in this respect: more than 90% of projects³⁸ involve research institutions - industry collaboration. This clearly facilitates the development of technologies ready for commercial exploitation. As well as R&D projects, the FP also funds the intersectoral mobility of research staff, including university-industry exchanges.

The new *Competitiveness and Innovation Programme* will support all forms of innovation, public-private partnerships and measures to improve access to finance including loans, venture capital, and "business angel" finance. It will also fund novel ways to facilitate knowledge sharing between research institutions and companies, in particular for SMEs³⁹, as well as new trans-national clustering initiatives. In the area of eco-innovation, it will in particular support the market up-take of innovative technologies and practices through pilot and market replication projects.

In order to maximise the impact of these two Framework Programmes, they will work together to provide a suite of complementary activities for R&D projects in order to promote knowledge transfer, and the exploitation of R&D results.

Evidently, as well as directly promoting knowledge transfer activities, the Commission also promotes the exchange of good practice in support of knowledge transfer between Governments. In this respect, the Community offers various opportunities for regional and transnational policy learning⁴⁰.

37 COM(2006)386 and Council Decision 2006/702/EC of 6 October 2006.

38 Under FP6.

39 <http://www.europe-innova.org>

40 e.g. ERAnet, PRO INNO Europe, ERIK and OMC-Net.

CONCLUSION

CONCLUSION

Interactions between the public research base and industry have been gradually increasing over the past decade. These can vary from contractual research to collaborative research or even to structured partnerships. Most of these interactions involve the transfer of knowledge between the stakeholders concerned, and enhance the socio-economic impact of publicly-funded research, e.g. by creating new useful products, new jobs and sometimes new companies.

The analysis and policy orientations set out in this Communication constitute a starting point for discussions on a common European framework for knowledge transfer in order to create a level playing field and a more coherent European landscape for knowledge transfer.

Furthermore, the voluntary guidelines presented in the accompanying Commission Staff Working

Document are intended to help research institutions identify shared interests with industry and facilitate mutually beneficial knowledge transfer arrangements. These guidelines will become a living document, complemented by additional work to be undertaken by a group of high-level industry and academic actors. This group will be launched in 2007 and will provide advice on other actions which it could take to promote knowledge transfer in Europe.

In addition, co-operation between Member States and the Community level will also continue in the context of the Lisbon strategy for growth and jobs. Major policy initiatives in this area taken by Member States should be reflected in the *National Reform Programmes*, and the exchange of good practice will continue to be promoted by the Commission.