



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

Directorate-General for Research

Directorate C - ERA: Knowledge-based economy
Unit C2 - Private investment and technology platforms
E-mail: rtd-invest-feedback@ec.europa.eu

Directorate-General for Enterprise and Industry

Directorate D - Innovation policy
Unit D1 - Innovation policy development
E-mail: entr-innovation-policy-development@ec.europa.eu

***Europe Direct is a service to help you find answers
to your questions about the European Union***

Freephone number (*):

00 800 6 7 8 9 10 11

() certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed*

LEGAL NOTICE:

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of the following information.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu>).

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 2007

ISBN 978-92-79-05521-8

© European Communities, 2007

Reproduction is authorised provided the source is acknowledged.

Printed in Belgium

PRINTED ON WHITE CHLORINE-FREE PAPER

FOREWORD

FOREWORD



Janez Potočnik

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.



Günter Verheugen

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.

A handwritten signature in blue ink, appearing to read "Potočnik".

Janez Potočnik
European Commissioner
Science and research

A handwritten signature in blue ink, appearing to read "Günter Verheugen".

Günter Verheugen
European Commissioner
Enterprise and Industry

CONTENTS

TABLE OF CONTENTS

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

<i>Introduction</i>	6
1. A NEED FOR ACTION	7
2. INDUSTRY AND RESEARCH INSTITUTIONS WORKING TOGETHER TOWARDS A KNOWLEDGE ECONOMY	11
2.1. Creating the conditions for successful knowledge transfer	12
2.2. Promoting an entrepreneurial mindset	13
3. MAKING IT HAPPEN: MEMBER STATES AND THE COMMUNITY WORKING TOGETHER	12
3.1. The European Institute of Technology	12
3.2. Co-operation activities	13
3.3. Financial support	13
<i>Conclusion</i>	16

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

<i>Introduction</i>	18
1. BALANCING THE BENEFITS	19
1.1. Benefits to research institutions	19
1.2. Benefits to society	20
1.3. The balance between openness and exploitation of results	20
2. GUIDELINES	21
2.1. Policy issues for heads of research departments / faculties	21
2.2. Good practices regarding contractual arrangements for research institutions and industry	21
<i>ANNEX I: Definitions</i>	30
<i>ANNEX II: Sources of good practice considered when drafting this text</i>	31
<i>ANNEX III: Existing assistance services</i>	31

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**

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/wimfiles/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%20221006.1161606166446.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.

EUROPEAN COMMISSION

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

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

**Annex to the Commission
Communication “Improving knowledge
transfer between research institutions
and industry across Europe”**

INTRODUCTION

INTRODUCTION

These voluntary guidelines intend to highlight good practices, to European universities, research & technology organisations and other publicly-funded R&D bodies (globally referred to as research institutions¹ hereinafter), regarding the management and transfer of knowledge and intellectual property (“IPR”) in the context of both publicly-funded R&D and delivery of collaborative research. They do not focus extensively on the transfer of tacit knowledge through classical channels such as the trans-sectoral mobility of researchers, which are already addressed in other documents, including the *Commission recommendation on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers* (C(2005)576).

Sources of such good practices include material developed by national public authorities and by stakeholders, some of which are listed in Annex II (Section 5).

Often perceived as a “new activity”, knowledge transfer between research institutions and industry has a long history and has often been beneficial to research and education (further developed in Section 2). Such relations consist of a variety of activities, including, for example:

- research institution-industry staff-exchange programmes,
- gifts and endowments by industrial partners (e.g. professorial chairs, etc.),
- the provision of life-long education and training of professionals,
- collaborative and contract research,
- consultancy work.

However, the development of the knowledge economy is inducing a paradigm change in the innovation process, known as “open innovation” and characterized, among other features, by more collaborative research and sharing of knowledge and intellectual property. Universities and other research institutions have a critical role to play in this new context.

The development of collaborative research is one of the most important knowledge transfer and innovation processes. There is now wide consensus among experts from Universities², Research Technology Organisations (RTOs) and Industry that this process can be beneficial to the respective missions and interests of all parties, provided that certain principles and good practices are observed.

Accordingly, these guidelines aim to help research institutions develop more effective mechanisms and policies to promote both the dissemination and the use of publicly-funded R&D results. Building on the Responsible Partnering and other initiatives, it is a further step to help in the creation of a standard approach to address the aforementioned issues at European level.

¹ Annex I (Section 4) contains a list of definitions

² See for instance the policy statements of EUA, EARTO, ProTon Europe and EIRMA

They are divided into two main sections:

- the first (Section 3.1) relates to issues which should be addressed by research institutions in order to ensure that their policies relating to IPR, incentives and conflict of interest optimize knowledge transfer activities, i.e. promote the use of publicly-funded R&D results by industry, while remaining compatible with the research institutions' missions of education and dissemination of knowledge; and
- the second (Section 3.2) presents good practices specifically relating to contractual arrangements which, in the broad context defined in the first section, should be taken into account by all staff who negotiate research collaboration contracts.

Although these guidelines are not binding, it is recommended that the specific policies of individual research institutions (e.g. charters) regarding interaction with potential industrial partners should follow similar principles, adapting them to the local context (e.g. national legislation).

These guidelines will be reviewed regularly, and complemented with more specific provisions and examples after consultation with stakeholders. They complement the Commission Communication "*Improving knowledge transfer between the public research base and industry across Europe – Implementing the Lisbon agenda*" which highlights a number of actions which public authorities may wish to implement in order to facilitate knowledge transfer.

In addition to the guidelines per se, this document also contains three annexes:

- Annex I is a list of definitions and acronyms
- Annex II is a list of references which were considered in drafting the guidelines
- Annex III is a list of several assistance services available at EU level.

1. BALANCING THE BENEFITS

Examination of successful research collaborations in Europe and the USA show that sustainable “win-win” arrangements can be obtained, which produce good science, publish results without unreasonable delay, contribute to the general education and training of new graduates, and generate valuable intellectual property that

supports innovation by industrial partners.

When managed in a professional and balanced way, knowledge transfer can be beneficial both for the research institutions concerned and society in general.

1.1. BENEFITS TO RESEARCH INSTITUTIONS

Benefits to research institutions resulting from knowledge transfer to industry are not – and should not be expected to be – primarily financial, even though any revenues resulting from knowledge transfer can help fund additional R&D activities, in addition to the knowledge transfer activities themselves. Instead, the main benefits are indirect and should be considered in the longer term. They include for instance:

- The development of mutual trust between the research institution and industry, beneficial to the establishment of long-term strategic partnerships (as opposed to one-off contracts);
- The enhancement of research institutions research activities (access to state of the art industrial equipment, improving research institution project management skills, complementing the research institution competence base by new skills and techniques developed in industry, improved understanding of market needs and of industry problems);
- Gaining status and prestige (resulting from

successful partnerships and products);

- The enhancement of research institutions teaching activities (involvement of industry-based lecturers, enrichment of teaching contents and materials with practical examples, learning how to apply skills and knowledge to solve real business problems ...);
- The identification of potential new clients or partners for further research;
- Attracting, retaining and motivating good scientists interested in entrepreneurial aspects or in new professional career opportunities;
- Contributing to public authorities better recognising the socio-economic relevance of publicly-funded research, potentially leading to increased funding thereof.

These benefits will have further positive consequences, such as facilitating exchanges of staff between the research institution and industry, or the hiring of new graduates from the research institution by industry.

1.2. BENEFITS TO SOCIETY

The successful implementation of policies to deal with inventions and collaborations with industry can lead to a number of benefits for society at large and, in particular, the local economy. These benefits include new jobs, new products on the market and better education.

An example of such a success story may be seen in Imperial College London, where Imperial Innovations technology commercialisation companies generated revenues in excess of £30 million from

spin-outs and licenses and created over 1,000 jobs since 1997.

To take another example, among the 36 patented inventions of the 90s selected by EPO on the basis of their economic significance for the 2006 *Inventor of the Year Award*, about half are based on discoveries by public research institutions. For another 25%, the proof-of-concept was achieved through collaborative research with industry.

1.3. THE BALANCE BETWEEN OPENNESS AND EXPLOITATION OF RESULTS

The balance between the cost-free dissemination of research results and their exploitation is a delicate issue for publicly-funded R&D. There is a growing tendency towards open access to research data and publications³, in order to ensure that academics can exchange information freely and this should be welcomed.

However, it should be realised that certain new products or processes (especially in the biotech or “new materials” sectors) are virtually impossible to further develop and transfer to market without intellectual property rights having been filed, which requires confidentiality to be maintained

for a limited time period. This is largely due to the high proof of concept and marketing costs that certain sectors entail – and thus, unless a monopoly can be granted, commercialization becomes unattractive - meaning products which could benefit society might remain unused.

Thus, it is necessary for each research institution to have the necessary policies and mechanisms in place in order to identify inventions with commercial potential and, with the assistance of skilled Knowledge Transfer professionals, identify the best way forward – either to publish immediately or to protect said invention before publication.

³ See <http://europa.eu.int/comm/research/press/2004/pr1506en.cfm> and http://www.oecd.org/document/15/0,2340,en_21571361_21590465_25998799_1_1_1_1,00.html

2. GUIDELINES

2.1. POLICY ISSUES FOR HEADS OF RESEARCH DEPARTMENTS/FACULTIES

2.1.1. Intellectual Property (IP) policy

The research institution should define and communicate a long-term strategy in relation to the management of IP and Knowledge Transfer (or more broadly innovation), including a strategy as to how these activities should be pursued⁴. A written policy explaining how IP management relates to and supports the overall mission of the research institution should be developed, published and implemented. This policy should include guiding principles relating to the emphasis the research institution places on the financial and non-financial benefits of the effective management of IP exploitation and Knowledge Transfer.

It is considered a good practice that an adequate research institution Intellectual Property policy will:

- ensure that inventions can be identified easily and, where appropriate, protected;
- make the research institution a more attractive partner by providing evidence relating to the research institution's expertise in IP management;
- make inventions more visible to external stakeholders, in order to promote their exploitation (through licensing, etc.) ;
- promote the use of publicly-funded research results, including the spinning out of new companies;
- provide a formal incentive mechanism for staff who participate actively to knowledge transfer.

Although they vary from one research institution to the other, typical IP policies often cover the following issues:

- Ownership of research results and associated IP rights;
- Rules applicable to “non-employees” of the research institution such as students;
- Management, protection, and promotion of the exploitation of IP rights;
- Negotiation of IP issues raised during interaction with industry (ownership of IP, confidentiality, etc.);
- Incentives for researchers who participate actively to knowledge transfer;
- Management of conflicts of interest;
- Monitoring and reporting of Knowledge Transfer activities.

⁴ Ideally, this will be developed in consultation with the research institution's stakeholders.

Good practices regarding specific IP issues:

Record keeping: Staff engaged in research activities/projects should be required to maintain laboratory notebooks, to make it possible to prove under which conditions certain R&D results were generated (when, by whom, etc.).

Disclosure requirements: A formal procedure for the timely disclosure of new ideas / discoveries (including inventions, software, databases, etc.) with potential commercial applicability by research staff to the Knowledge Transfer Office (KTO) should be established. Ideally, such procedures are swift and straightforward (for example, through the use of standard invention disclosure forms and a clear system of information exchange) so that research activity is not disrupted. All discoveries are kept confidential⁵ for a limited period of time until a timely evaluation of the new idea / discovery – including patentability assessment, the case being – has taken place.

Evaluation: All disclosures of new applications or discoveries should be formally evaluated to determine the owner of the “invention” and assess its potential for use.

The role of the research institution’s KTO may vary according to the context :

- *Research where industry is the owner:* the KTO ensures that any invention is disclosed to the industrial owner in as timely a manner as is possible;

- *Research where the research institution is the owner:* the KTO considers protecting and/or promoting the exploitation of the R&D results;
- *Research where research institution staff (including researchers and students) are the owner:* the KTO provides the members of staff with advice regarding possible exploitation routes.

Evaluators should consider that the open dissemination of results relating to particular discoveries can, in some cases, be the most appropriate course of action, if it is in line with the wider Knowledge Transfer strategy of the research institution.

Where the KTO is the chosen route for protection/exploitation: The staff member(s) concerned (inventor(s)) are expected to provide reasonable assistance in the exploitation process by (for example) providing information promptly upon request, attending meetings with potential licensees, advising on further developments, signing relevant legal documents (including after leaving the institution if needed), etc.

Liability: The research institution should ensure that staff do not become personally liable for product liability claims arising from research institutions (or third parties e.g. licensees) exploitation activities.

⁵ To ensure, in particular, that inventions are not made unpatentable by premature publications

2.1.2. Incentives policy

The research institution should develop and communicate clear incentives for researchers who take part in Knowledge Transfer activities. These incentives should be communicated to all existing and new staff and should not only be financial in nature, but also promote career progression.

An adequate incentives policy will encourage staff to engage, where relevant, to protect of IP and in promote its exploitation. In principle all those directly involved in generating IP should benefit, including non-academic staff when their inputs are above and beyond their normal responsibilities.

Such a policy should:

- be transparent and widely understood
- be fair and treat all inventors in a similar fashion
- assist in the career advancement of research institution staff
- reflect the returns generated (including non-financial contributions to the research institution objectives)
- be large and immediate enough to influence behaviour
- avoid exerting any unintended influence on the orientation of the research institution's R&D strategy (such as a shift towards short-term applied research).

Many research institutions have adopted a formula-based approach to the allocation of financial returns from licensing revenues⁶. Most embody a number of common themes:

- profits are split three ways - between the research institution, the department and the individual inventor(s), enabling all the groups to benefit;
- rewards are net of the costs of knowledge management (patenting, etc.), enabling the research institution to recoup some of its outlay. In some cases, the cost of the KT Officers' time is also taken into account;
- as net returns increase, the share of the inventor falls, whilst that of the research institution increases;
- reward schemes rarely specify how the inventors' portion will be shared when there is more than one inventor. In practice these shares are usually at the discretion of the inventors.

Financial returns resulting from the creation of a spin-off company, however, are usually dealt with differently due to the higher levels of commitment required from inventors during the early stages, and due to the uncertainty which exists over potential returns. For these reasons, giving inventors a share of the equity in a spin-off can be a more appropriate way of providing incentives than a simple share of returns. Inventors have then a direct, and continuing, interest in the company's success, and financial risk to the research institution is minimised.

⁶ *It is important to note that all purely financial incentive schemes can raise unrealistic expectations in members of staff and as such should be implemented in carefully and after consultation with key stakeholders.*

2.1.3. Conflicts of interest policy

The research institution should publish a clear conflicts of interest policy for staff engaged in situations that could lead to their obligations to the research institution being influenced, in order to ensure that the research institution's scientific objectiveness and academic independence are not affected, and that the research institution does not engage in activities which conflict with its basic missions and values.

An adequate conflicts of interest policy can help:

- staff to identify actual or potential conflicts of interest, and report them according to clear procedures;
- to avoid circumstances where the research institution's reputation may be brought into disrepute;
- to avoid potential legal actions against the research institution or its staff.

Such policies often require that members of staff notify their Head of Department and the KTO when they are engaged in actions or situations that could lead to their obligations to the research institution being influenced in particular by considerations of personal gain.

Issues or actions which should be disclosed include:

- Executive and non-executive directorships;
- Licensing of intellectual property;
- Outside activities and consultancy;
- Research projects;

- Equity interests;
- Teaching and assessment of close relatives;
- Continuous professional development delivery of courses/programmes.

In addition, specific funding terms and conditions in funding contracts should also be disclosed where relevant.

2.1.4. Knowledge Transfer resources

Adequate mechanisms and professional resources must be in place if Knowledge Transfer activities are to take place effectively – preferably through the creation of a Knowledge Transfer Office (KTO), either for individual institutions or clusters thereof.

Although many variations may be encountered, a typical KTO :

- Is staffed by professional knowledge transfer experts, including – or with access to – legal, financial and intellectual property (IP) advisors;
- Develops and executes the research institution's strategy in respect of working with industry and users of research results, and the exploitation of intellectual property;
- Helps identify, evaluate and – where appropriate – protect intellectual property;
- Advises on commercial and IP issues, in particular in the negotiation of research contracts;
- Promotes the use of inventions and other

R&D results, in particular by negotiating technology transfer agreements or facilitating the creation of spin-offs;

- Disseminates information – in particular to potential users – regarding what intellectual property the research institution owns and what is available for licensing;
- Administers license agreements and equity

participations, collects and distributes the revenues.

If an institution creates a new KTO, it is recommended that it be empowered first as a service organization and only if required and presumed it is capable, as a strategic exploitation office. Once it has necessary experience and capacity to fulfil its function, it could be authorised to generate, protect, and enforce IPR.

2.2. GOOD PRACTICES REGARDING CONTRACTUAL ARRANGEMENTS FOR RESEARCH BETWEEN RESEARCH INSTITUTIONS AND INDUSTRY

In order to make negotiation with a third party easier, members of the research institution staff should consider the issues outlined below.

2.2.1. The need for openness

The great majority of research collaborations are built on personal relationships between a member of research institution staff and a counterpart in industry (either through the KTO staff or through individual researchers). This element of personal trust requires that negotiations be an open process which establishes clear intentions.

2.2.2. Beginning negotiations

In a first instance, the research institution should ensure that collaboration with an industrial partner is compatible with the research institution mission and that such a collaboration will help it achieve its objectives. The research institution must consider whether its charitable or other not-for-profit status (where applicable), eligibility for public funding and other existing partnerships may suffer as a consequence of any agreement reached.

Both parties should then identify who has the authority to sign any agreement, as well as their respective legal and strategic latitude in a dialogue with their respective advisers and decision-makers. For example, there are situations, such as the R&D programmes set up by public authorities, where a number of provisions are mandatory and not open to negotiation.

Once this has been done, it is recommended that both parties consider the questions raised in the CREST decision guide (see Section 3.5 of the CREST report⁷) or in similar sources of good practices. The Decision Guide will help users to identify the relative importance of certain issues and so focus on those areas that need to be resolved by negotiation.

2.2.3. Who should be involved

In most research institutions, only management can commit the research institution to co-operation⁸ regardless of whether the research institution co-finances the project or not. It is therefore important that the negotiation team keeps them informed of progress on a regular basis, in order to ensure that there are no

⁷ http://ec.europa.eu/invest-in-research/pdf/download_en/crestreport.pdf

⁸ *Since the Knowledge Transfer Office is often the main contact point for industrial partners and as it often provides legal advice, it is recommended that, as a general rule, the manager thereof be given the authority necessary for them to negotiate the agreement.*

unforeseen delays in the signing of the contract.

It is also recommended that, at the earliest opportunity, the parties enter into agreement on the composition, meeting frequency and procedure of the project management. It is also useful to clarify the parties' monitoring of the project development and how to handle any disputes.

Once these circumstances have been defined, the researchers of both organisations should clarify and describe the research content. It is relevant that both parties are in continual and positive dialogues with their legal advisors. Such procedures may prevent the parties from running into legal problems at a later stage.

Furthermore, clarity regarding expectations may contribute to avoiding many unnecessary misunderstandings and complications, even if the scope of co-operation develops as the project progresses.

2.2.4. The distribution of rights between the parties

Agreements should clearly delineate the distribution of rights between the parties, including ownership of the background knowledge brought to the project, and ownership and access rights in relation to inventions, results and know-how arising from the partnership (and any associated IP rights).

Discussion between parties should include consideration of three key factors: (1) intellectual input, (2) capacity to exploit, and (3) financial and human input of each partner, although in some cases this issue is to be negotiated rather than a predetermined starting point.

Financial and human input

- Relative financial contribution from the parties;
- Requirement to strike a fair and reasonable incentivisation between all parties involved in the project (considering, where appropriate, total investments up to commercialisation);
- Other input to the project including researchers, equipment and provision of materials, and a clear understanding and financial outline of in-kind contributions;

Intellectual input

- Nature and scope of the proposed collaboration;
- Level of intellectual input from both sides, is there a genuine and balanced collaborative effort?
- Relative abilities of the partners to obtain, maintain and, where necessary, defend IPR.
- Impact on future research – is it compromised? All parties should understand the relationship of the current research to future academic research (e.g. due to possible confidentiality constraints).

Capacity to exploit

- Likely commercial applications of the IP, the optimum exploitation route and the partner(s) best positioned to execute it;
- Degree of alignment of the research with the industrial partner's technology development and acquisition strategy;

9 *Non-employees includes, for example, students and third party consultants/contractors*

- Likely costs and resources required to develop the results of the collaboration into commercial products or services, and associated risks;
- Stage of the research: early or closer to market?
- Scale and timeframe required for pre-commercial development.

If model contracts are used, they should be flexible enough to permit a certain amount of negotiation on the basic aspects outlined below:

1. The specific background knowledge contributed to the project by the research institution should be listed or otherwise defined, together with the conditions for access and use. This provides bilateral assurance that the contributions of the parties are recognised and compensated, and will avoid potential disputes about the background's origin.
2. Written contracts between each of the partners and all individuals (both employees and non-employees⁹) potentially contributing to new IP should address at least ownership and confidentiality issues. The way IP issues are managed in the project should also take into account any relevant regulatory framework, relating for instance to employees' inventions, depending on the applicable law. In the event that a person who is or has been engaged in the creation of IP leaves the project or joins another organisation, the project partners should ensure that a written agreement is in place, having regard to the nature of the IP created by that person, setting out the position regarding

ownership and confidentiality of the IP, and arrangements regarding the signing of any documents which may become necessary to secure IP ownership and recordal rights.

3. The parties should consider ownership of results on a case-by-case basis, taking account of their respective involvement in the project. In particular, the approach will usually be different in contract research, collaborative research, publicly-funded research, etc.

In the case of IPR based on knowledge developed by the research institution through considerable investment, or within an area of strategic importance for the institution, the latter may have an interest in keeping access rights to the invention.

However, research institutions must recognize that a number of application-specific research results are best used if they grant an exclusive right of utilisation (or if they transfer (some of) the results/rights) to specific companies. Such a right is often a precondition for the companies if they are to make the required investment in commercial development of the research results, or to overcome other significant barriers to entry.

In some cases, research results of a more generic nature can best be exploited or applied on nonexclusive terms. In these situations, a solution may be to issue licences for the exploitation of the results in a number of well-defined applications.

Where it is decided to assign the ownership of (or to grant an exclusive license to) a patent or patent application (or other IP right) to the partner, this should be done on terms ensuring that the research institution may continue its research

and that, if the invention is not exploited by the company within an agreed time span, the rights revert to the research institution. Furthermore, it may be advisable to include a clause to allow renegotiation of the compensation paid to the research institution if the financial returns on jointly developed inventions significantly exceed expectations.

When the research field is precisely defined, it is easier to negotiate rights at an earlier stage and to avoid misunderstandings/disputes. The scope of the agreement should be justified and limited to a certain period. The partners may also choose to restrict the agreement to certain affiliates.

Where the research institution does not wish to take out a patent, whereas the partner does, the latter should be offered the possibility to do so. Similarly, when the research institution does not wish to continue the patent application or patent, the other partner should be offered first right of refusal.

In case of collaboration, the publicly funded research institution must ensure that, looking at the rights and obligations of all partners, the contract is balanced, in order to exclude the possibility of passing any indirect State aid through too favourable conditions from the research institution to the industrial partner(s). In the case of contract research, research institutions should expect to recover full direct and indirect costs of all research activities undertaken unless they obtain rights to (some of) the outputs of the research. See also Section 3.2.10 regarding compliance with the State aid framework.

2.2.5. Research institutions should publish the results of research projects

Research institutions and their staff are expected

(and often obliged) to publish the results of research projects, even where the project in question is financed with private funds. It is therefore important that they explicitly reserve the right to publish whenever possible.

In collaborative research, all contracting parties should be given the opportunity to comment on manuscripts, without having a controlling influence on the final version of a manuscript, the other contracting party should have a defined timeline (e.g. 30 days) in which to comment or decide whether potential inventions should be the subject of a patent (or other IP right) application.

Where the other contracting party decides that the material for publication contains descriptions of patentable inventions, it should be granted a further time period (e.g. an additional 90 days) in which to submit a patent (or other IP right) application.

When preparing publications, research institutions are encouraged to rely on the international information and documentation standards of ISO, including those on cataloguing.

2.2.6. Confidentiality

As a general rule, research institutions should accept to keep confidential the trade secrets and knowledge belonging to other partners. However, research institutions should only exceptionally accept to keep their own research results confidential, on the basis of a detailed assessment and justification of this need.

Companies may have a legitimate interest in keeping certain results secret, to make it easier for them to reap the associated commercial benefits. The general principle that if the industry partner wants greater control over the publication

and confidentiality of the results it must increase its contribution to the research institution seems to be a useful one in this context. This will have to be matched with any legal requirements for the research institution to publish results. Indeed, confidentiality can only be accepted to the extent that this is not contrary to any general legal Act (or regulations) relating to the access to information in the research institution's Member State.

Confidentiality clauses should, as a general rule, be limited in scope so that they clearly state which information is to be kept confidential, and for how long. Drafting a confidentiality clause in broad terms may result in a limitation of the right of publication of research results and is thus unacceptable. This may, for example, occur where a publication clause actually determines a reasonable deadline for publishing research results, but at the same time a confidentiality clause directs the researcher/research group to keep confidential any research results for a long period of time.

Any confidential documents delivered by a contracting party or delivered to another institution/undertaking should be stamped "confidential" so that confidentiality is shown directly on the document.

2.2.7. IP enforcement

The contract should include a clause setting out whether and in what circumstances the research institution is expected to assist in the enforcement of the resulting IP rights.

In general, the industry partner will be expected to undertake the obligation to enforce the IPRs if it is using the results, although the research

institution may provide non-financial assistance (e.g. legal or technical advice).

In the case of non-exclusive licenses, the research institution should accept that a licensee does not have to continue to pay royalties if the research institution decides not to enforce its rights when a third party infringes them.

2.2.8. Relationship management and dealing with disagreements

Established relationships create trust and facilitate the process of managing collaborative research. Partners should take care to maintain good relationships with their collaborators. Having established mechanisms for dealing with disagreements (such as mediation) simplifies and speeds up resolution. Partners should develop an agreed mechanism and timescale for dealing with disagreements and disputes.

2.2.9. Governing law

The national law of the research institution should preferably govern the research agreement. Where an industrial partner requests an exception to this principle, said partner should (where applicable and/or appropriate) provide contingency funding for access to appropriate legal advice where it is required by its partners.

It is important to note that there are cases where the governing law is imposed by a funding body (e.g. the EC Framework Programme) and as such this point cannot be negotiated.

2.2.10. State aid rules

It is important for research institutions to realise

¹⁰ There can be severe consequences for breaking the State aid rules for both the industry and PRO. For example, the Commission can require all the aid to be recovered from the project plus interest from the date of the first payment, and third parties can also pursue the matter through national courts

that when entering into discussions with industry, State aid rules may affect what can be agreed in the contract¹⁰. In order to minimize any potential concerns in this field and clarify existing Treaty rules, the new *Community Framework for State aid for research and development and innovation*¹¹ explains that :

For contract research¹² there will normally be no State aid passed to the undertaking through the public research organisation, if one of the following conditions is met:

1. the research institution provides its service at market price;
2. if there is no market price, the research institution provides its service at a price which reflects full costs plus a reasonable margin.

For collaborative research¹³ there will normally be no State aid passed to the undertaking through the public research organisation, if one of the following conditions is met:

1. where the participating undertakings bear the full cost of the project;
2. where the results which do not give rise to intellectual property rights may be widely disseminated and any intellectual property rights to the R&D&I results which result from

the activity of the research institution are fully allocated¹⁴ to the latter;

3. where the research institution receives from the partners compensation equivalent to the market price for the intellectual property rights¹⁵ which result from the activity of the research institution carried out in the project and which are transferred to the partners. Any contribution of the partners to the costs of the research institution shall be deducted from such compensation.

There may also be no State aid where any intellectual property rights to the results, as well as access rights to the results, are allocated to the different partners in a way adequately reflecting their respective interests, work packages, financial and other contributions to the project.

Research institutions are strongly advised to ensure that their contracts fall within the above exclusions in order to avoid any potential complications, and to ensure that they are able to properly allocate costs and revenues to economic and non-economic activities, e.g. through separating economic/non-economic activities in their accounting.

State aid rules must also be respected with regard to the funding of the KT activity itself, where such activity should fall under State aid rules.¹⁶

11 OJ C 323 of 30.12.2006; cf. Chapter 3 of the framework.

12 The PRO renders a service against payment of an adequate price and the industrial partner specifies the terms and conditions of this service - typically, the industrial partner will own the results of the project and carry the risk of failure.

13 Where at least two partners participate in the design of the project, contribute to its implementation and share the risk and the output of the project.

14 "Full allocation" shall mean that the research institution enjoys the full economic benefit of those rights by retaining full disposal of them, notably the right of ownership and the right to license. These conditions may also be fulfilled if the institution decides to conclude further contracts concerning these rights including licensing them to the collaboration partner.

15 "Compensation equivalent to the market price for the intellectual property rights" refers to compensation for the full economic benefit of those rights. In line with general State aid principles and given the inherent difficulty to establish objectively the market price for intellectual property rights, the Commission will consider this condition fulfilled if the research institution as seller negotiates in order to obtain the maximum benefit at the moment when the contract is concluded.

16 Cf. 2.2. of the Communication on Improving Knowledge Transfer and the State aid rules explained therein.

ANNEX I: DEFINITIONS

Intellectual Property Rights: Term used to describe the bundle of legal rights that in whole or in part will be in the results of research, including the following:

1. Patents (and utility models in some countries);
2. Know-how and trade secrets;
3. Copyright (including on software);
4. Database rights;
5. Industrial design rights (which protect aesthetic features of a product), and also lay-out designs (semi-conductor topography rights) of integrated circuits;
6. Registered and unregistered trade marks, which protect words and symbols used for products and services in the course of trade.

Confidential Information: Term used to describe information in whatever form that has the necessary quality of confidence about it, having regard to the circumstances in which it is created, disclosed or used, so as to attract protection under law (also known as “trade secrets”, etc.).

Background knowledge (or simply background): Information (including inventions, software, databases, micro-organisms, etc.), whether IP-protected or not, which is possessed by some of the partners before starting a R&D project.

Knowledge Transfer Office: The department in a research institution which is responsible for managing the transfer to a commercial environment of new inventions, creations, discoveries, innovations, processes and the like which result from scientific research conducted at that research institution (or possibly at several research institutions).

Research institutions: Research laboratories and agencies operated and funded by government and other research organisations, including Universities, Polytechnics, Colleges, Institutes of Technology, Research and Technology Organisations, European research centres, etc., that receive a significant share of their total funding from public sources.

State aid: A term which refers to forms of assistance from a public body, or publicly-funded body, given to undertakings on a discretionary basis, with the potential to distort competition and affect trade between Member States of the European Union, and fulfilling the conditions of Article 87 (1) of the EC Treaty.

ANNEX II: SOURCES OF GOOD PRACTICE CONSIDERED WHEN DRAFTING THIS TEXT

EU and other international sources:

- The Responsible Partnering initiative: <http://www.responsible-partnering.org>
- Results of the first and second OMC cycles (EU): http://ec.europa.eu/invest-in-research/coordination/coordination01_en.htm
- Management of intellectual property in publicly-funded research organisations: Towards European Guidelines (EU): <http://ec.europa.eu/research/era/pdf/iprmanagementguidelines-report.pdf>
- Turning science into business (OECD): www.oecd.org (direct link)
- Recommandations pour l'adoption d'une Charte de la propriété intellectuelle par les établissements publics d'enseignement supérieur et de recherche (FR): <ftp://trf.education.gouv.fr/pub/rechtec/technologie/charte.rtf>
- National Code of Practice for Managing Intellectual Property from Publicly Funded Research (IE): www.forfas.ie/icsti/statements/icsti040407/index.html
- National Code of Practice for Managing Intellectual Property from Public-Private Collaborative Research (IE) www.sciencecouncil.ie/reports/#ipcode04

National sources:

- Guidelines for Teaching Hospitals entering into Research Agreements (DK): www.forskningskontrakter.techtrans.dk/HS/viewPage.action?site=eng_HS&page=Manual%20in%20pdf
- Contracts, Contacts and Codices, Research Cooperation Between Universities and Companies (DK): www.rektorkollegiet.dk/fileadmin/user_upload/downloads/Contacts__contrats_and_cod.pdf
- Partnerships for Research and Innovation (UK): www.auril.org.uk/publications/pfrai
- A Guide to Managing Intellectual Property: Strategic Decision-Making in Universities (UK): www.patent.gov.uk/about/notices/2002/manip/index.htm
- Lambert Agreements – A toolkit for universities and companies wishing to undertake collaborative research projects (UK): www.innovation.gov.uk/lambertagreements

ANNEX III: EXISTING ASSISTANCE SERVICES

Additional information and assistance with respect to IPR-related issues and support to innovation may be obtained from different sources, including:

- The Innovation Relay Centres (<http://www.innovationrelay.net>), a network of more than 70 centres involving more than 240 organisations in 33 countries which provide assistance on marketing innovation, help venture capitalists find new technologies to exploit, and help companies source innovative solutions to satisfy a technological need.
- The Cordis Marketplace service (<http://www.cordis.europa.eu/marketplace>), an online service where you can find RTD results and search for innovative business opportunities on emerging technologies.
- Gate2Growth (<http://www.gate2growth.com>), which offers in particular a database of experts and service providers - ranging from incubators to patent lawyers, to accountants and training providers in every European country.
- The ProTon network (<http://www.protoneurope.org>), a European association of technology transfer professionals.
- The IPR Helpdesk (<http://www.ipr-helpdesk.org>), which assists potential and current participant in the EC research Framework Programmes on intellectual property rights issues arising in this context ; they also publish a number of general-purpose papers on specific IPR issues ;
- The European Patent Office (<http://www.european-patent-office.org>), which grants European patents and offers additional services, e.g. training seminars and patent information products (CD-ROMs, on-line Espacenet database, etc.) ;
- The World Intellectual Property Organisation (WIPO – <http://www.wipo.int>), whose website also contains specific information for SMEs; it should also be noted that WIPO runs a mediation and arbitration facility (<http://arbiter.wipo.int>),
- National Patent Offices (<http://www.european-patent-office.org/onlinelinks/a/aa>), which grant national patents and often provide additional services to local users ;
- The OECD – see in particular their Guidelines for the licensing of genetic inventions (<http://www.oecd.org/sti/biotechnology/licensing>).

EUROPEAN COMMISSION

EUR 22836 - Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation.

Luxembourg: Office for Official Publications of the European Communities
2007 - 36 pp. - 17.6 x 25 cm

ISBN 978-92-79-05521-8

INTERESTED IN EUROPEAN RESEARCH?

RTD info is our quarterly magazine keeping you in touch with main developments (results, programmes, events, etc.). It is available in English, French and German. A free sample copy or free subscription can be obtained from:

European Commission

Directorate-General for Research

Information and Communication Unit

B-1049 Brussels

Fax (32-2) 29-58220

E-mail: rtd-info@ec.europa.eu

Internet: http://ec.europa.eu/research/rtdinfo/index_en.html

SALES AND SUBSCRIPTIONS

Publications for sale produced by the Office for Official Publications of the European Communities are available from our sales agents throughout the world.

How do I set about obtaining a publication?

Once you have obtained the list of sales agents, contact the sales agent of your choice and place your order.

How do I obtain the list of sales agents?

- Go to the Publications Office website (<http://publications.eu>)
- Or apply for a paper copy by fax (352) 2929 42758

The need for effective knowledge transfer among public and private research has never been greater than it is today. Companies, universities and research and technology organisations understand that leadership in their respective fields depends upon collaborating productively with each other, in ways that support and reinforce their distinct yet complementary missions.

By now, the working practices and professional skills required for effective knowledge transfer are widely known and well documented. Unfortunately, many difficulties still remain, often relating to a need to better understand respective partners' interests and motives, to improve the management of intellectual property rights and deal with unrealistic expectations. At present, we are simply not capitalising adequately on the knowledge that is at our disposal.

It is much easier to overcome these difficulties when sound conditions are established that provide a basis for long-term trust and lead to simple and effective rules of engagement at grass roots level.

When we published the Handbook of Responsible Partnering, which contains guidelines based on good practices, we called on governments to give greater priority to establishing these conditions, and to work towards greater consistency across national boundaries. We have been promoting these guidelines widely within the business and public research communities during the past two years. We are grateful to the European Commission for now highlighting this priority also and for documenting important lessons learnt.

We ask all governments to take notice of these lessons, and to continue the processes of reform and improvement necessary to secure European leadership in the knowledge economy.

Georg Winckler
President, EUA



Erkki Leppivuori
President, EARTO



Gillian McFadzean
Chair, Proton Europe



Leif Kjaergaard
President, EIRMA

