

IPR-Codes And Guidelines In Europe Facilitating Collaboration Of Publicly Funded Research Organizations (PROs) With Businesses

Part 1

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Abstract

Effective and efficient technology transfer by collaborative R&D between universities or other publicly-funded organizations and businesses is rewarding and necessary, but a challenge. Negotiation of the terms for the collaboration often proves to be hampered by different cultures and missions, conflicts-of-interest, legal requirements and the divergent perception of value of IP. Voluntary codes of practice as well as guidelines on IPR ownership and exploitation on supranational and national basis play an important role in overcoming the aforementioned challenges by providing common ground for the stakeholders of collaborative R&D. Furthermore, nearly all codes define recommendations for measures like awareness creation, education and training, share of good practices, development of policies, procedures and services for IPR, and collaboration management at PROs.

1. Introduction

A. Relevance of Collaborative R&D

As a consequence of financial and economic crises, economic realities of increased competition due to globalization become more obvious. Mostly, it is not size that matters, but the ability for agile adoption to change. By creating new business models and developing new markets, change can be initiated even proactively. Before new rules are enforced onto best of class companies, they tend to influence the establishment of new rules by themselves. Therefore, these companies are also called *game changers*¹.

A prerequisite for an active or proactive attitude is that companies are excellent in attracting and motivating those rare talents that make the difference during idea creation, R&D and translation of results into viable products. In the high-tech arena even interna-

tional companies with their resources nowadays fail to hire and motivate the best and brightest. The answer to that challenge is *open innovation*.² By accessing the best available expertise, worldwide synergies with one's own resources are yielded. Mutual collaboration with universities or in general with publicly-funded research organizations (PROs),³ enables companies to scout for talent as well as for new ideas, technologies and IPRs. If these are combined with suitable business cases, a sound source of innovation is created. Consequent sustainable business development goes along with innovation creating new jobs, dynamic growth and international competitiveness.

Companies like Procter & Gamble, General Electric, 3M, IBM, Google, Microsoft, DuPont, Honeywell, Whirlpool, etc., are frequently presented as role models.⁴ In the corresponding case studies it is demonstrated how *open innovation* is able to rejuvenate

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1. Alan G. Lafley and Ram Charan, "The Game Changer: How You Can Drive Revenue and Profit Growth with Innovation," *Crown Business*, New York, 2008, ISBN 0307381730.

2. Henry Chesbrough, "Open Innovation: The New Imperative for Creating and Profiting from Technologies," *Harvard Business School Press*, Boston, 2003, ISBN 1578518377.

3. Definition according to www.responsible-partnering.org: Publicly-Funded Research Organizations are any institutions – universities or in general all higher education institutions, Research and Technology Organizations and others – that carry out R&D for broader application and benefit, to a significant extent using public funding.

4. Rolf-Christian Wentz, "Die Innovationsmaschine: Wie die weltbesten Unternehmen Innovationen managen," *Springer*, Berlin, 2007, ISBN: 3540736263.

Figure 1. Innovation Gap Between the EU, U.S. and Japan



Performance for each reference year is measured using, on average, data with a two-year lag (e.g. performance for 2008 is measured using data for 2006). The EU innovation gap is measured as the distance between the average performance of the EU and those of the U.S. and Japan on 16 indicators. An EU innovation gap of e.g. -40 means that the U.S. or Japan is performing at a level of 140, or 40% above that of the EU.

Source: European Innovation Scoreboard report

the product portfolio and, consequently, to contribute significantly to the revenue streams. The collaborative thinking that goes along with *open innovation* has improved over the years but is not understood and implemented throughout all industries and regions.

The *not-invented here syndrome* is still a challenge. Endorsed by the hope that research done in-house by one's own means could result in innovations required for staying competitive, companies still try to innovate alone. This is limiting the innovation potential, especially in Europe.

If the publication output is applied as a metric for the generation of new insights, ideas and knowledge, Europe holds the first position after many years compared to the USA and Asia-Pacific, although the latter region is catching up quickly.⁵

The *Global Innovation Scoreboard* report (GIS⁶) allows a more thorough comparison of the EU 27 to the other major R&D spenders and emerging economies by applying a set of indicators. This comparison draws quite the opposite picture demonstrating that the EU has an innovation gap compared to major competitors. Europe is catching up with the U.S. and is keeping pace with Japan but lacks the dynamics of the Asia-Pacific region.

EU 27 is quite diverse in its achievements. The European Innovation Scoreboard (EIS) provides a comparative assessment of the innovation performance of EU Member States (Figure 2). There are the so-called innovation leaders (dark gray), with innovation performance well above that of the EU 27 and all other countries. Then there are the innovation followers (light gray), the moderate innovators (blue) and the catching-up countries (light blue).

Compared on a national level there is an obvious broad performance range and, therefore, a lot of room for improvement for most of the nations. The European Commission's "Innovation Union" sets out ambitious goals and a strategic approach to innovation in order to address this challenge.⁷

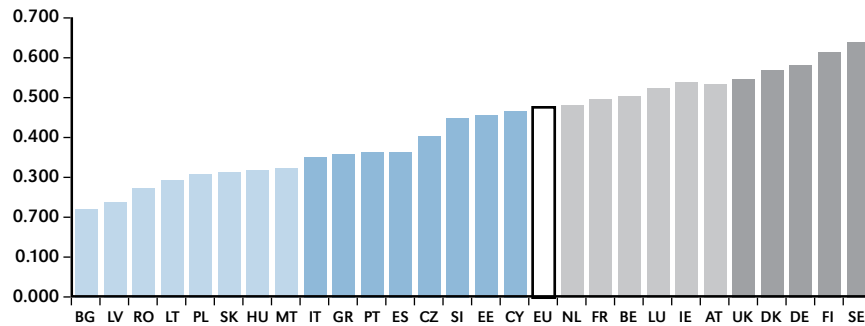
Particularly promising is the potential collaboration of companies with PROs. Based on the experience of Anglo-American nations and in the U.S. in particular, it is widely understood that universities are able to contribute significantly to the innovation performance and, therefore, to the prosperity of a society. The boom of innovation enabled by patents of U.S. universities is attributed to the Bayh-Dole Act from 1980. It gave U.S. universities, small businesses and non-profits control of the intellectual property that resulted from government funding of their research. Therefore, over the years the contribution of university research to the innovation record has increased steadily.

5. Andreas von Bubnoff, "Asia squeezes Europe's lead in science: Global share of scientific output rises in the East," *Nature* 436, 314 (21st July 2005), doi:10.1038/436314a, www.nature.com/nature/journal/v436/n7049/full/436314a.html.

6. www.proinno-europe.eu/page/european-innovation-scoreboard-2009.

7. ec.europa.eu/research/innovation-union/index_en.cfm.

Figure 2. Summary Innovation Index



Note: The Summary Innovation Index (SII) is a composite of 29 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. The 2008 SSI reflects performance in 2006/2008 due to a lag of data availability.

Source: European Innovation Scoreboard report

Europe in favor of *institutional ownership*. Consequently, inventions created by researchers are owned or ownership may be claimed by the university where the researchers work. For the first time universities were legally enabled to centrally manage IP which their employees had created.

2. Public Funding

European commission, national governments and their funding programs for collaborative research placed university-industry collaboration

The economic impact and success stories have created worldwide awareness for the impacts of technology transfer and their underlying mechanisms. Consequently governments started the transformation process by setting up the basis for suitable legal and funding frameworks. In the EU legal regulations have been adopted and the commission developed several programs, tools and recommendations.

B. General Regulations With Impact On The Relationship Between PROS And Businesses

In Europe, changes of national and EU legislation during the last decade introduced basic rules with a great impact on the way companies and universities collaborate.

1. Ownership of IP Created

At the European level there is no consistent system of IP ownership applied to the results of publicly funded research like the Bayh-Dole Act⁸ in the U.S. At least on a national level in nearly all EU 27 nations law reforms were implemented abolishing the *professor's privilege*⁹ or similar models of fragmented IP-ownership prevalent in most nations of continental

higher on the priority list in the last years. Nations such as Germany, Austria¹⁰ and the UK have initiated long term governmental programs to support university-industry collaboration financially as well as administratively in order to promote technology transfer.

Public co-funding of collaborative R&D has to avoid distortion of competition. Therefore, the deminimis regulation limits the cash equivalent a company may obtain by subsidies in a three years period to 200.000, Euro.¹¹

Nevertheless, collaboration with universities could result in indirect subsidies for companies. As an interpretation of competition law, the European Commission has published the Community Framework for State Aid for Research and Development and Innovation.¹² The Commission will consider automatically, *i.e.* without any notification requirement, that no indirect state aid is granted to the private partner by a PRO if the conditions set out in the Community Framework for State Aid for R&D¹³ are fulfilled.

In the case of contract research or research services,

8. Bayh-Dole Act was enacted by the U.S. Congress in December 1980 as *University and Small Business Patent Procedures Act*; 2010 marks the 30th anniversary of the Act – cf. www.b-d30.org.

9. "Monitoring and Analysis of technology transfer and intellectual property regimes and their use - Professor's Privilege," 2008, Draft Report for the European Commission DG Research, www.eutechnologytransfer.eu/deliverables/professors_privilege.pdf.

10. www.ffg.at, www.cdg.ac.at.

11. europa.eu/legislation_summaries/competition/state_aid/l26121_en.htm.

12. ec.europa.eu/competition/state_aid/reform/archive_docs/rdi_frame_en.pdf.

13. *Ibid*: OJ No C323 of 30.12.2006 – in particular 3.2.1 and 3.2.2 thereof.

14. For elucidation of a market price, benchmarks can be found at private R&D companies which are working for profit.

market price¹⁴ or full costs¹⁵ plus a reasonable margin need to be paid if the company is going to obtain the results. For example, in the case of R&D collaborations the full cost approach or a compensation equivalent to the market price for the intellectual property rights transferred to the company is required.

Challenges for Collaborative R&D

While technology transfer between PROs and companies offers high potential of benefits to both parties as well as to society and economy in general, the handling of the technology transfer process is not an easy task. Collaboration between curiosity-driven research in PROs and business-oriented development in companies has to cross cultures and yield synergies for all parties involved. Prohibited publications on the one side and patent filings impeded by prior-art publications of the inventors on the other side are examples of bad practice. There is also the issue of conflict of interest and commitment in cases where actors are having different roles with different goals.¹⁶ Misinterpreted missions, regulations and legal requirements are also resulting in additional barriers. Companies tend to assume that because they've paid taxes, not only are they entitled to hire scientists and engineers educated by universities, but also their IPRs have to be available for free and nevertheless exclusively. Universities tend to oversee that the companies major interest within the collaboration has to be to gain a competitive advantage facilitating the generation of revenues.

The discussion about the value of IP already created is a hot topic as the perception of value of early stage technology is nearly always asymmetric. Even more difficult is the discussion about the value of unknown IP that might be created in a project not yet started. Especially in the case of inventions based on fundamental research, it is impossible to predict which IP might be generated and which market potential might be connected to this IP. Negotiation of valuation methods is, therefore, a critical success factor for achieving win-win relationships. The values derived by applying different valuation methods are highly dependent on the application, the business case and

the industry. As the topic is rather complex there is no one-size-fits all solution. Partners need to have corresponding education, training and experience in order to understand the relevant parameters, to make use of the options for setting up a suitable business case, to define the corresponding IP use, to apply and adopt established valuation methods and, finally, to define the financial terms as well as to integrate them into executable contracts.

As a prerequisite, a mind change is necessary so that negotiation and implementation strategies support win-win oriented collaborations. On the short run it is easier to go for win-lose or lose-win, but only win-win collaborations are a sound basis for sustainable long-term relationships!

Furthermore, the clearance of ownership questions regarding potential IP contamination between the partners as well as regarding background and sideground technology, as well as the negotiation and implementation of contracts are often time-consuming and the required resources need to be made available.

Last but not least, tech transfer professionals and business executives negotiating the deal require the support of legal counsels. Sometimes legal counsels are more experienced at being fighting opponents than acting as facilitators making contracts legally valid, unambiguous and risk adjusted. In-house legal reviews in companies and PROs as well, often have been described as slowing down negotiations and alienating partners. Instead of showing a deal minded attitude, partners are often frustrated by a bureaucratic approach of legal departments as they are focusing on risk reduction instead of following a business-minded approach looking for a fair sharing of associated rewards and risks.

2. IPR-Codes and Guidelines

Voluntary codes of practice as well as guidelines on IPR ownership and exploitation play an important role in order to overcome the aforementioned challenges. In an EU consultation¹⁷ a majority of respondents asked for guidelines in order to address issues such as the balance between patenting and publishing and for policies of PROs regulating links with industry in general. The OECD has noted that legislation might be necessary to create "the incentive for PROs to

15. Full costs are not just additional costs plus an overhead of e.g. 20%. The EU accepts within its funding programs 60% as an flat rate for overhead. For coming closer to reality, an even significantly higher percentage needs to be added. At Graz University of Technology e.g. the real overhead for personnel expenditures calculated for 2009 was 81,88%.

16. Joe Sandelin, "University-industry relationships: benefits and risks," *Industry & Higher Education*, 24 (2010) p.55-62.

17. Draft report on the outcomes of the public consultation on transnational research co-operation and knowledge transfer between public research organizations and industry M1-FM/DD (D 2006), ec.europa.eu/invest-in-research/pdf/download_en/consult_report.pdf.

protect and commercialize IP,” but new laws were not the only measure. In general, guidelines and codes of practice on IPR ownership and management have the potential to foster greater transparency and coherence.¹⁸

Currently the different codes work in parallel with one another, with the pre-existing legal regime in each nation, and with IP policies at the institutional level. They provide a useful source of potential common ground between contracting parties in collaborative research. Usually parties are free to decide about their implementation, but there are exemptions as well.¹⁹

The following description of codes distinguishes supranational codes, including EU initiatives, from national codes.

2.1 Supranational Codes

OECD and WIPO Studies

International organizations like the OECD²⁰ and WIPO²¹ have evaluated the perspective of technology transfer and university-industry relations intercontinentally. Analyzing the status quo, goals and strategies, both organizations have published corresponding recommendations. Part of those recommendations is awareness creation, education, training and a general sharing of good practices. Furthermore, coherent national IP policies and implementation of IP policies at the institution level are strongly encouraged.

AUTM Guidelines for University Licensing

AUTM (Association of University Technology Managers) published *Nine Points to Consider in Licensing*

18. Organization for Economic Co-operation and Development (OECD), “Turning Science into Business; Patenting and Licensing at Public Research Institutions,” 2003/4, www.oecd.org/document/61/0,3746,en_21571361_21590465_2513917_1_1_1_1,00.html.

19. In Austria the implementation of the recommendations of the EC is part of the service level agreement for the years 2010-2012 of nearly all universities closed with the Federal Ministry for Science and Research. Consequently, best efforts to its implementation have to be undertaken by the universities, otherwise governmental funding might be reduced.

20. Organization for Economic Co-operation and Development (OECD), “Turning Science into Business: Patenting and Licensing at Public Research Organizations,” 2003.

21. World Intellectual Property Organization (WIPO), SMEs Division, “Research and Innovation Issues in University–Industry Relations,” 06.12.2004.

22. AUTM was founded in the USA but has turned to a global focus linking and strengthening a network of global communities of technology transfer professionals. The Nine Points to Consider are endorsed on behalf of more and more institutions worldwide. www.autm.net/Nine_Points_to_Consider.htm.

*University Technology*²² in 2007. The intention is to support the universities’ mission and by doing so to address the dual goals of nurturing future research and using the innovations of university research to provide the broadest possible benefit to the public.

If PROs have been creating IPR that is free for licensing to any third party, it is recommended to have basic principles in place. Licensing approaches might vary considerably from case to case and from university to university based on the circumstances. In spite of this uniqueness, universities share certain core values that should be implemented in all licensing agreements. The guideline includes examples of clauses for corresponding implementation into contracts.

EU Recommendations

The EU has developed a series of activities.²³ In 2004 Directorate-General for Research published twelve recommendations which could be used as a basis for the development of guidelines for the EU in order to promote innovation at the European level.²⁴ This report includes a review of the background, problem areas and examines options for action by PROs, industry and public authorities. It highlights the need for harmonization and convergence of ownership regimes at an EU level. It includes some useful starting points for research collaborators to consider as minimum principles.

The CREST Report²⁵ also affirmed the need for guidelines on EU level. Those guidelines should assist PROs and companies to “*work out dispassionately what contractual arrangements for IPR ownership will be appropriate for their needs*”. The report also includes the CREST decision guide which is a toolkit for potential R&D collaborators. The guide is not dependent on any particular IP system and, therefore, it is a tool that complements the code of practice. By a series of questions, the guide proposes the best way to arrange matters in the collaboration agreement.

23. Investing in Europe: ec.europa.eu/invest-in-research/index_en.htm, Innovation union: ec.europa.eu/research/innovation-union/index_en.cfm.

24. “Management of intellectual property in publicly-funded research organisations: Towards European Guidelines,” *Expert Group Report*, WP EUR 20915 EN, ISBN 92-894-6422-4, ec.europa.eu/research/era/pdf/iprmanagementguidelines-report.pdf.

25. “Intellectual property cross-border collaboration between publicly funded research organisations and industry and technology transfer training,” *Crest Report*, 2006 - 2nd cycle, September 2006, ec.europa.eu/invest-in-research/pdf/download_en/kina20796enc.pdf.

26. ec.europa.eu/invest-in-research/policy/crest_cross_en.htm.

This toolkit also exists as a Web tool, which is a quite effective and accessible way for practitioners.²⁶

The *Recommendation on the Management of Intellectual Property in Knowledge Transfer Activities and Code of Practice for Universities and Other Public Research Organizations of the European Commission*^{27,28} was published in 2008 and reached great attention and visibility. These recommendations to the member states of the European Union are the first voluntary guideline for the management of IP by PROs on a European level and include, for example:

- (i) Encouragement of PROs to establish policies and procedures for the management of IP;
- (ii) Support for the development of knowledge transfer capacity and skills in PROs, as well as to raise the awareness regarding IP, knowledge transfer and entrepreneurship;
- (iii) Improvement of the coherence of IP ownership;
- (iv) Implementation of the *Code of Practice* (see below), whether directly or through the rules laid down by national and regional research funding bodies;
- (v) Designation of a national contact point for the coordination of measures regarding knowledge transfer between PROs and business.²⁹

In the *Code of Practice* for PROs, principles are defined for internal policies regarding (i) IP, (ii) knowledge transfer and (iii) collaborative and contract research.

The *Internal IP policy* of PROs should provide clear rules for staff and students regarding *e.g.* the disclosure of new ideas with potential commercial interest, the ownership of research results, record keeping, the management of conflicts of interest and engagement with third parties. Furthermore, it should promote the identification, exploitation and protection of IPs in order to maximize socio-economic benefits including incentives, awareness creation and training of basic skills regarding IP and knowledge transfer.

27. "The management of intellectual property by public research organizations," europa.eu/legislation_summaries/research_innovation/general_framework/ri0007_en.htm.

28. "Commission recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations," Brussels, 10.04.2008, C(2008)1329, ec.europa.eu/invest-in-research/pdf/ip_recommendation_en.pdf.

29. In Austria *e.g.* a national contact point (NCP) has been designated at the Federal Ministry of Science and Research, which is assisted by the Federal Ministry of Economy, Family and Youth, and the Federal Ministry of Transport, Innovation and Technology. www.ncp-ip.at.

The *Knowledge Transfer Policy* is intended to ensure that the PRO has professional knowledge transfer services in place including legal, financial, commercial know-how as well as access to protection and enforcement advisors, in addition to staff with technical background. Furthermore, a licensing policy for exploitation purposes should result in adequate compensation for IP transfer.

A policy defining *Rules for Collaborative and Contract Research* should be compatible with the mission of each party, consider the level of private funding and be in accordance with the objectives of the research activities, in particular to maximize the commercial and socio-economic impact of the research, to support the PROs objective to attract private research funding, to maintain an IP position that allows further academic and collaborative research and avoid impeding the dissemination of the R&D results. IP-related issues should be clarified at the management level and as early as possible in the research project, ideally before it starts. IP-related issues include allocation of the ownership of intellectual property, which is generated in the framework of the project ("foreground"), identification of the intellectual property which is possessed by the parties before starting the project ("background") and which is necessary for project execution and/or exploitation purposes, access rights to foreground and background for these purposes and the sharing of revenues. In a collaborative research project, ownership of the foreground should stay with the party that has generated it, but can be allocated to different parties on the basis of a contractual agreement concluded in advance, adequately reflecting the parties' respective interests, tasks, and financial, or other contributions to the project.

Within the recommendation, a list of recommended practices of public authorities facilitating the IP management of intellectual property of PROs has been published. Among these are the following measures: (i) sufficient resources and incentives are available to PROs and their staff to engage in knowledge transfer activities; (ii) measures are taken to ensure the availability and to facilitate the recruitment of trained staff (such as technology transfer officers); (iii) pooling of resources between PROs at local or regional level is promoted where these do not have the critical mass of research spending to justify having their own knowledge transfer office or IP-manager; (iv) government funding is made available to support knowledge transfer and business engagement at PROs; (v) in order to promote transnational knowledge transfer and facilitate co-operation with parties from other countries, the owner of IP from publicly-

funded research is defined by clear rules (institutional ownership) and this information, together with any funding conditions which may affect the transfer of knowledge, is made easily available; (vi) last but not least: a set of model contracts is made available, as well as a decision-making tool helping the most appropriate model contract to be selected, depending on a number of parameters.

The implementation of those recommendations are supported and tracked by the European commission.

Responsible Partnering³⁰

The Responsible Partnering handbook is the result of a joint initiative of the EC European Commission, EIRMA European Industrial Research Management Association, EUA European University Association, EARTO European Association of Research and Technology Organizations, and ProTon Europe. The guide was first published in 2005 and a revised edition was released in 2009.

Society benefits when the fruits of research are exploited for social and economic purposes. *Responsible partnering* is intended to assist both PROs and companies to improve the effectiveness and efficiency of their collaborative research. The code highlights the need for a sustainable approach. It acknowledges that relationships, in which the fruits of research are equitably allocated between the parties and where there is clarity of IPR ownership, are likely to be durable.

Based on the two main principles (1) maximum beneficial use of public research, and (2) responsible use of that research, ten “self help” guidelines are derived. Checklists for implementation of the guidelines and for drafting of contracts are included as well.

EICTA Interoperability White Paper³¹

This Code was published by EICTA European Information, Communications and Consumer Electronics Industry Technology Association in 2006. It is aimed to encourage (technical) information-related interoperability in networks, systems, devices, applications and components for products and services being used by multiple parties. It is not focused on research but has a more general approach to promote and reward innovation. For that reason it might be seen as a technical sectoral code that introduces actions and principles to achieve that aim. The White Paper notes

30. “Joining forces in a world of open innovation, a guide to better practices in collaborative research between science and industry,” www.responsible-partnering.org.

31. “EICTA White Paper on Standardisation and Interoperability,” November 2006. EICTA was renamed to Digital Europe, www.digitaleurope.org cf. archive.

the potential tension between IP protection rewarding the innovator and the adoption of a common, perhaps nonproprietary standard for the public goal of better interoperability. It notes that such tensions can and have been “managed in a generally successful manner” by the development of so-called “open standards”.

2.2 National Codes

As a large number of issues need to be addressed by PROs and companies in dealing with the transfer of IP in R&D collaborations, particular conditions at the national level need to be considered as well. Some member states like Ireland, the UK and Denmark have issued guidance on these issues by introducing non-binding national codes.

Ireland

ACSTI Advisory Council for Science, Technology and Innovation has developed two complimentary codes:

– *National Code of Practice for Managing Intellectual Property from Publicly Funded Research*³² was published in 2004 and is focused on IP Management, is non-binding, and may be adapted for local use by PROs. One of its key principles is that ownership of research has to be vested to the PRO, backed by published ownership policies, and written agreements entered into by all scientists involved. It suggests that conflicts of interests should be managed and resolved, and good practice guidelines (e.g. keeping adequate laboratory notebooks to assist in IP protection) should be put in place as well. It encourages PROs to develop a policy on incentives to research (equity and royalty sharing are examples, but it encourages a broad approach to the issue not restricted to those two options). It also includes a sample invention disclosure form and a user friendly guide to IPRs.

– *National Code of Practice for Managing and Commercializing Intellectual Property from Public-Private Collaborative Research*³³ was published in 2005, is non-binding and covers the whole process from the initial co-operation to commercialization. It provides a framework for opening negotiations between parties based on best practices. It states that ownership and access to results of public-private collaborative research should be negotiated on a project by project basis based on three key factors: (i) financial input; (ii) intellectual input; and (iii) capacity to exploit. The last aspect, capacity to exploit, is hardly mentioned in any other comparable initiative. It also addresses the

32. www.forfas.ie/publications/2004/title,827,en.php.

need to discuss how disputes between the parties are to be dealt with. It is explicitly aimed at maximizing Ireland's attractiveness for foreign direct investment in research and development by promoting a common IP management approach and gives preference to commercialization in Ireland. Negotiation of contracts and correlating challenges are not discussed. Furthermore, other forms of co-operation besides the research collaboration are not examined. Both codes have been well received in Ireland.

Whilst both codes are non-binding, it is important to note that compliance with their main terms is a pre-condition for obtaining a grant from one of the major sources of funding for scientific research, the Science Foundation Ireland. Therefore, it is a strong financial incentive to follow the codes under the grant conditions. Another core element of Science Foundation Ireland's terms and conditions is that there is an attractive incentive and financial return for the research project's principal investigator and the research team in case of success.³⁴

United Kingdom

In the UK several organizations have published non-binding codes relevant to IP ownership and management:

– The so-called Baker Report:³⁵ *“Creating knowledge creating wealth: Realizing the economic potential of public sector research establishments”* is a report to the Minister for Science and the Financial Secretary to the Treasury by John Baker, in 1999. It is focused in particular on issues of good practice, barriers to successful commercialization, culture, management and the relationship of PROs and business.

– *A Guide to Intellectual Property Management: Strategic Decision-Making in Universities*³⁶ was developed by the UK IPO (Intellectual Property Office, formerly known as the Patent Office) in partnership with AURIL (Association of University Research & Industry Links) and UK Universities and published in 2002. It is designed to inform and support activities of university senior managers in the development of their IP strategies and policies.

– The *Lambert Review* of Business-University Collaborations by Richard Lambert³⁷ was published in 2004. Lambert came up with a number of key recom-

mendations on ways to improve links between PROs and business. One of those was that a number of interested parties, including the UK's Department of Trade and Industry, AURIL and industry stakeholders, developed a set of model agreements to be used in collaborative research projects on a voluntary basis by universities and industry. A decision guide with guidance notes was also developed to help parties decide which of the five main Lambert agreements (or a combination of them) best suits the particular scenario that the PRO or company sponsor is dealing with, and to help navigate through the agreements by themselves.

Denmark

A working group of DI Confederation of Danish Industries (Danks Industri) and the Danish Rectors' Conference (Rektorkollegiet) developed a non-binding code called *Contacts, contracts and codices - research co-operation between universities and companies*.³⁸ The assignment was to study many good experiences from collaboration projects between universities and companies and to demonstrate how hurdles and problems could be handled. Recommendations are intended to help PROs and businesses to become partners and not just parties in collaboration projects.

The code provides useful information and guidance to the smooth transfer of knowledge by nearly all forms of collaboration between universities and companies. It addresses in a user-friendly manner how to decide on payment models, valuations, distribution of rights and the management of the parties' expectations of what the results will be in any given project. Although it is not meant to be a step-by-step guide for setting up a contract, a chapter covers all important aspects of a corresponding contract. It is well suited for beginners but also provides useful ideas for advanced readers. Although the Danish legal situation is discussed, it is applicable for international use.

Austria

Graz University of Technology has developed a binding guideline not only for the handling of IPRs in general, but also one for IP generated within any form of collaboration with businesses. The guideline defines IP related mandatory rules for all employees with the power to act and sign on behalf of the uni-

33. www.forfas.ie/publication/search.jsp?ft=/publications/2005/Title,785,en.php.

34. *SFI Terms and Conditions of Research Grants*, August 2006 Edition, at www.sfi.ie.

35. www.hm-treasury.gov.uk/ent_sme_baker.htm.

36. www.ipso.gov.uk/managingipoverview.pdf.

37. Richard Lambert: former editor of the *Financial Times* and formerly a member of the Monetary Policy Committee at the Bank of England and then Director General of the CBI Confederation of British Industry.

38. di.dk/English/Shop/Productpage/Pages/isdefault.aspx?productid=2684.

versity. The first version was enforced in 2007 and was already aligned with the mentioned *Community Framework for State Aid for Research and Development and Innovation*. The guideline has taken into account the feedback of various business partners as well as the Federation of Styrian Industries. The second version released in March 2008³⁹ was formally negotiated with the Federation of Styrian Industries with involvement of their Austrian umbrella organization. The approval of the document has been unanimous among the participating members of the Federation of Styrian Industries.

For facilitating the use of the guideline, a checklist was developed as well. For assisting the implementation, various compatible model contracts were designed as a service for the institutes of the university.

The guideline has been provided to the Austrian universities for their use and was applied for definition of the initial starting point for the IPAG Intellectual Property Agreement Guide.⁴⁰

Sweden

In Sweden, the professor's privilege is still in force. Therefore, an example of IP code is included in the overview.

In the guidelines of KTH Stockholm,⁴¹ the university avoids any financial risks by not filing any patents. Inventions generated by public funding are seen as a contribution to society and, therefore, the university supports the scientists by linking to an external company. For cases of collaborations, it is stressed that all employees should have contractual agreements in place with the research sponsor so that the precondition for commercialization of results is fulfilled.

3. Conclusions

In nearly all codes, awareness creation, education, training, and a general sharing of good practices are recommended. Furthermore, PROs are encouraged to establish policies, procedures and services for IPR and collaboration management in order to maximize the commercial and socio-economic impact of research.

In addition, most of the codes strongly recommend providing a set of model contracts as well as decision-making tools for selection of appropriate model contracts as best practice of public authorities.

As discussed above, these recommendations were supported by the European Commission (EC) and renewed by the European Parliament.⁴² The EC has made available the CREST cross-border collaboration decision guide⁴³ to help businesses and PROs decide the best way to arrange matters in their collaboration agreement. In a first step, the major issues and their relative importance to the contract are identified by a series of interactive questions. In a second step, the cross border aspects are identified. In this regard, the CREST Group notes that achieving model agreements which could have a Pan-European application might not be possible as the agreements could become too complicated to be of practical use. Instead, it prefers the use of such model agreements at a national level.

Only for standardized and simpler kinds of contracts, a broader transnational use can be achieved. Organizations such as AUTM⁴⁴ and DESCA⁴⁵ have developed model contracts for material transfer agreements. But most of the contracts regarding collaboration need to cover aspects where a lot of subtle national differences become a challenge. Even for legal regimes that are quite similar, like that of Germany and Austria, those subtle differences are significant. In Germany *e.g.* the inventors have the right to obtain a remuneration, which is related to what the PRO has earned with the corresponding invention. The elaborated mechanism is part of the German Employees' Inventions Act and its accompanying guidelines. In Austria the inventor remuneration has to be appropriate in relation to what the invention is worth. In Germany, scientists at universities also have the so-called negative publication right. Therefore, they can publish instead of disclosing the invention for patenting prior to publication. Furthermore, they have the right to file patents in their own name in nations where the employer does not file. These dif-

39. mibla.tugraz.at/07_08/Stk_12/080319_Richtlinie_IPR_Wirtschaftskooperationen.pdf.

40. A working group organized by the Austrian universities in co-operation with *aws*, a public funding agency for businesses, is working on a guideline in the form of a manual with modular units for agreements to cover collaborations between universities and businesses. www.era.gv.at/space/11442/directory/20288.html.

41. Patent- och exploateringspolicy vid KTH, intra.kth.se/regelverk/overgripande-styrning/upphovsratt/patent-och-exploateringspolicy-vid-kth-1.27147.

42. "University Business Dialogue: a new partnership for the modernisation of Europe's universities," May 20th 2010, Strasbourg P7_TA-PROV(2010)0187, A7-0108/2010, www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2010-0187+0+DOC+XML+V0//EN#def_1_5.

43. ec.europa.eu/invest-in-research/policy/crest_cross_en.htm.

44. www.autm.net, restricted member's area, but membership is open to all interested worldwide.

45. www.desca-fp7.eu/fileadmin/content/Documents/Model_for_Material_Transfer_Agreement_2008_09_18.doc.

Table 1. Overview Of National Initiatives Providing Model Contracts

NO	INITIATIVES	LINKS
EU. 1	EC-FP7 Grant Agreement (+Annex II)	cordis.europa.eu/fp7/calls-grant-agreement_en.html#ideas_ga
EU. 2	DESCA Group FP7 Consortium Agreement	www.desca-fp7.eu
EU. 3	EICTA FP7 Consortium Agreement	www.digitaleurope.org/index.php?id=32&id_article=93
UK. 1-5	Lambert Tool Kit	www.innovation.gov.uk/lambertagreements
DE. 1-4	BMW Federal Ministry of Economics and Technology	www.bmwi.de/BMWi/Navigation/Service/publikationen,did=342954.html
DE. 5-6	Berlin Contracts	www.ipal.de/de/infotehek/dokumente_und_broschueren
DE. 7	Düsseldorf Contract Workshop	www.gewrs.de/de/information/vertragswerkstatt
DE. 8	Hamburg Contract	www.hk24.de/produktmarken/innovation/hochschulpolitik/technologietransfer/index.jsp
AT. 1	Graz Univ. of Technology & Federation of Styrian Industries	mibla.tugraz.at/07_08/Stk_12/080319_Richtlinie_IPR_Wirtschaftskooperationen.pdf
AT. 2-4	Vienna University of Technology: (1) Introduction/overview (free access); (2) Model contracts (for employees only)	www.tuwien.ac.at/dle/transfer/services_fuer_tu_angehoerige/fe_vertragsservice
AT. 5	FFG Austrian Research Promotion Agency	www.ffg.at/content.php?cid=1046
AT. 6	IPAG Intellectual Property Agreement Guide	www.ipag.at
AT. 7-8	WKO Austrian Federal Economic Chamber: (1) Model contracts (for members only); (2) Handbook (free access)	(1) wko.at/wknoe/rp/gesamtangebot_wirtschaftsrecht.htm (2) portal.wko.at/wk/dok_detail_file.wk?AngID=1&DocID=813485&ConID=305408
FR. 1	Ministry of Economy, Industry and Employment	www.industrie.gouv.fr/guidepropintel/outils_contractuels/consortium.htm
FR. 2-3	CNRS National Center of Scientific Research	www.dgdr.cnrs.fr/daj/modele/contrat/textes.htm
DK.1-4	Johan Schlueter Committee	en.fi.dk/innovation/model-agreements
SE. 1	Lunds University	www5.lu.se/anstaelld/foer-mitt-arbete/juridik/avtal/uppdraagsforskning-savtal
SE. 2	VINNOVA Swedish Governmental Agency for Innovation Systems	www.vinnova.se/upload/dokument/Verksamhet/Starka_Fol-miljoer/VINN_Excurrence/Avtal/Avtalsmanual_eng.pdf
IT. 1-3	University of Milano	www.unimi.it/ricerca/finanziamenti_contoterzi
IT. 4	Confindustria Confederation of Italian Industries	www.confindustria.it/univimp/index.html

ferences in the legal systems require corresponding regulations in the contracts.

Following this need, model contracts need to be designed reflecting the national level. Table 1 provides a survey of European and national initiatives providing model contracts to help potential contracting parties reach agreements on IPR and reduce that agreement to writing.

Those initiatives are important for national use but also helpful for cross border collaboration as well. Conclusions about best practices and lessons learned for upcoming initiatives can be drawn by studying those initiatives and their model contracts.

Definitions

Collaborative Research:⁴⁶ Several parties are engaged in research towards shared objectives, collectively building on their individual background and side ground in the creation of new foreground knowledge.

Contract Research:⁴⁶ One or more parties perform a task for another at an agreed price and on contract. Contract Research tends to be shorter-term in nature, and be driven by different dynamics than collaborative research, and requires specific types of agreement that reflect the straightforward nature of the business deal. The term “Contract Research” is formally defined in the European State aid rules.

Background:⁴⁶ Information which is held by beneficiaries prior to their accession to this agreement, as well as copyrights or other intellectual property rights pertaining to such information, the application for which has been filed before their accession to this agreement, and which is needed for carrying out the project or for using foreground.

Foreground:⁴⁸ Results, including information, whether or not they can be protected, which are generated under the project. Such results include rights related to copyright; design rights; patent rights; plant variety rights; or similar forms of protection.

Sideground: Results, including information, whether or not they can be protected, which are generated in parallel to the project. In RP 6 Sideground was included and in RP 7 excluded from Background.⁴⁷ ■

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Disclaimer

The positions and opinions expressed herein are personal to the authors and not necessarily those of Graz University of Technology, Vienna University of Technology, CEST or BMVIT, and any of their employees, agents or partners.

46. cordis.europa.eu/fp7/calls-grant-agreement_en.html#ideas_ga - Annex II.

47. ec.europa.eu/research/fp7/pdf/ipr_prov_expl_en.pdf.

48. Federal Ministry for Transport, Innovation and Technology, www.bmvit.gv.at/en.