

Responsible Partnering between Research and Business

Special Conference
Lisbon
December 3-4 2007

eirma FACING THE INNOVATION CHALLENGE

EUA European University Association

EARTO

PROTON EUROPE Innovation from Public Research

RESPONSIBLE PARTNERING BETWEEN RESEARCH AND BUSINESS

SPECIAL CONFERENCE
LISBON, DECEMBER 3-4 2007

This is a report of the Special Conference held to explore progress and challenges in effective collaborative R&D, knowledge exchange and technology transfer among companies, universities and research and technology organisations. The conference was co-organised by the European University Association, ProTon Europe, the European Association of Research and Technology Organisations and the European Industrial Research Management Association. The organisers gratefully acknowledge the help and support offered by the Calouste Gulbenkian Foundation and the European Commission, DG Research.

The **European University Association** (EUA) is the main organisation of European universities and their national rectors' conferences. Its mission is to promote a coherent system of European higher education and research based on shared values, through active support and guidance to its members, thus enhancing their contribution to society. The aims of EUA are to formulate a coherent message from the higher education institutions and to strengthen the role of the institutions in the creation of the European Higher Education and European Research Areas.

ProTon Europe is the pan-European Association of Knowledge Transfer Offices linked to Public Research Organisations and Universities. Its development has been supported by the European Commission as part of the Gate2Growth Initiative. The main objective is to promote innovation in Europe by more effective knowledge transfer in order to contribute to the recognition and support of public research, to economic development and to public welfare in general. Membership is by institution. On a consolidated basis, ProTon Europe and its partner national associations support knowledge transfer with more than 700 public research organisations in Europe.

The **European Association of Research and Technology Organisations** (EARTO) is the trade association of Europe's specialised Research and Technology Organisations (RTOs). Its members make a major contribution to strengthening Europe's economic performance by supporting product and process innovation in all branches of industry and services, thereby raising the international competitiveness of European firms. RTOs work for and with governments to develop technologies for a better society, in fields such as climate change and energy security, environmental protection and remediation, health care, nutrition and food safety. EARTO facilitates professional contacts among its members, facilitates experience exchange between them, and generally promotes and defends their interests towards policy makers.

The **European Industrial Research Management Association** (EIRMA) aims to enhance innovation through more effective market-oriented research and development. Its unique features are networking and personal contact among companies. EIRMA provides a platform for discussing ideas and exchanging practical experience across the professional communities of our membership. Activities support companies in benchmarking and improving their innovation processes through sufficient, well-managed R&D, and establish EIRMA as a natural first point of contact for policy makers and others seeking the business community's insight.

Copyright © 2008, The European Industrial Research Management Association. Permission to copy, store electronically, or disseminate this publication is hereby granted freely provided the source is recognised.

EUA
rue d'Egmont 13
B-1000 Brussels
Tel: +32 2 230 55 44
Fax: +32 2 230 57 51
www.eua.be

ProTon Europe
rue des Palais 44
B-1030 Brussels
Tel: +32 2 211 34 32
Fax: +32 2 218 89 73
www.protoneurope.org

EARTO
rue du Luxembourg 3
B-1000 Brussels
Tel: +32 2 502 86 98
Fax: +32 2 502 86 93
www.earto.org

EIRMA
46 rue Lauriston
F-75116 Paris
Tel: +33 1 53 23 83 10
Fax: +33 1 47 20 05 30
www.eirma.asso.fr

CONTENTS

Summary

This report describes the findings of the Special Conference on Responsible Partnering between Research and Business held at the Calouste Gulbenkian Foundation, Lisbon, in December 2007. It is intended for conference delegates; senior management within the business community, universities and RTOs; and members of the European Commission, national governments and other bodies responsible for supporting public research and providing policies and framework conditions that enable results to reach the market.

This Conference took stock of the effectiveness of R&D collaboration supporting the transfer and exchange of knowledge and technology between research and industry. Its aims were to assess trends since the launch of the Responsible Partnering initiative in early 2004; understand how the Responsible Partnering recommendations are working in practice; map out where further improvements are required; and assess how these improvements might be achieved.

Recognising the developments that are taking place today, such as the university reform agenda and the adoption of increasingly "Open" forms of innovation, delegates were concerned to achieve outcomes that will provide useful benefits, according to all actors' specific objectives and motivations. Close and effective forms of collaboration serve to enhance research and knowledge exchange and support productive innovation, and there is a strong desire to avoid approaches that polarise the interests of universities against companies. The business community recognises the major contributions that universities make to modern societies and economies and wishes to see these contributions grow:

- Sustaining research excellence at the top level and state-of-the-art;
- Training successive generations of scientists and engineers;
- Supporting the development of the local community, including its SMEs;
- Supporting people's capacity to create and be creative; and
- Acting as long-term guardians of knowledge on behalf of society

The conference revealed considerable progress since Responsible Partnering was launched. As institutions and companies develop the competencies to manage "Open Innovation", the value of strategic long-term partnership and co-innovation based on trust and professionalism is widely recognised and more emphasis is being given to "delivery and outcomes" rather than philosophical issues. Tools are being developed to monitor and assure performance. A consistent view of the bases for effective collaborations is emerging, with acceptance of interdependency and recognition of the need for individual actors to take steps to assure that collaborations will work well in practice. There is more attention to the opportunities and needs presented by the SME community, and greater awareness of the value of interactions between universities and SMEs. The value of intermediate bodies and agencies is generally seen in terms of their "facilitation" and "enabling" roles rather than as process managers.

The challenge in Europe is to establish conditions which lead to a virtuous cycle of productive collaboration and on a sufficient scale. Some of the previously-identified barriers still exist: the process of establishing and implementing good practices is not complete; there are untapped opportunities for partnership and knowledge exchange; and concerns are being voiced about the effect of the changes being encouraged by governments, for example concerning longer-term research and the ease of establishing productive collaborations; and institutional management systems (as well as the mindsets that these systems can instil) are insufficient to meet current demands. Responsible Partnering is recognised as providing a sound basis for overcoming these barriers, provided it has sufficient visibility and adoption.

Responsible Partnering also provides a sound basis on which to develop government policy and guidelines. Recommendations given for the next steps are consistent with those set out in 2004. It is appropriate to revise the Handbook to improve clarity, provide consistent checklists and give useful guidelines in respect of new uncertainties regarding intellectual property practices and the 2006 revision of the State Aid rules. Implementation of good practices is currently hampered by a shortage of trained professionals: some complementary initiatives are described, which provide models for making the profession more attractive

and supporting and accelerating continued education. For governments and public authorities, overarching requirements are to encourage the more rapid and widespread adoption of well-established good practices, to make the opportunities for fruitful partnership more visible, to enhance the creation of useful partnerships, and to provide useful metrics.

1 Introduction

Men, said the Devil
Are good to their brothers;
They don't want to mend
Their own ways, but each other's.

Piet Hein

1.1 Changing Approaches to Research and Innovation

Researchers in the public and private sectors have a long tradition of working together on problems of mutual interest. Such activities are an important feature of the research landscape and are organised and executed with varying levels of formality. Today, there is widespread recognition of the need to extend the approach in ways that will further improve knowledge exchange and the impact of public research capacities. Underlying reasons include that:

- Research and development are becoming increasingly open and globally-connected activities[1]. The linear model of basic research leading to applied research, that supports development followed by market application, is no longer an accurate reflection of what is happening, in the face of growing (scientific, technical and business) complexity and the requirements for rapid speed to market in the face of global competition. A more strategic approach to collaboration and stronger management of knowledge exchange are seen as being integral to the effectiveness of these research and development activities.
- Greater emphasis is placed on the so-called "third mission" activities of public research. Universities and research and technology organisations (RTOs) are adopting more commercially-minded approaches and giving more attention to the economic impact of the public investments they receive. They look for ways to handle these new objectives in ways that will not damage their research and education activities, activities which are themselves tending to become more globally-connected.

The overall result is that traditional demarcations are becoming less clear-cut as industry seeks affordable and straightforward access to the non-core knowledge and capabilities available in public research; and as universities and research organisations also recognise how to generate benefits for themselves by working more closely with the private sector.

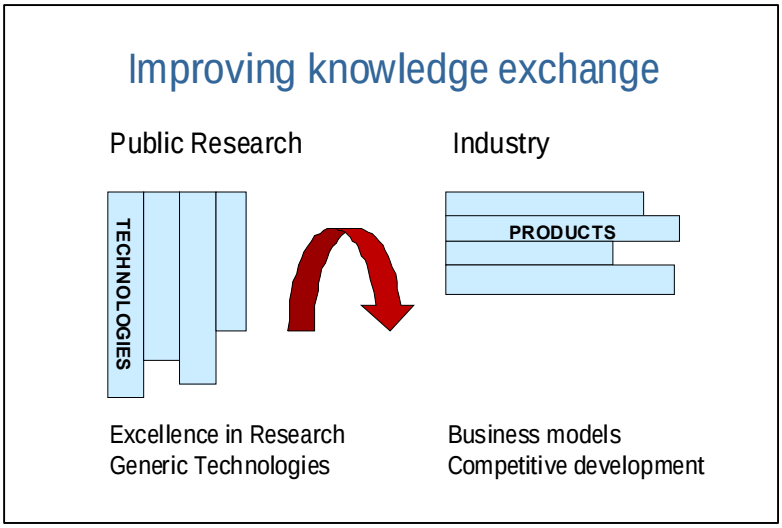
For Europe, the potential to use networks of public and private sector to support Open Innovation can be one of the region's competitive advantages, provided the members of these networks are fully equipped for the job. However, the benefits do not "come for free." The different core missions and forms of organisation of universities, companies and RTOs can lead to orthogonal operating models. Closer working relationships bring these differences to the fore, potentially creating misunderstandings and highlighting the continued difficulties over issues such as intellectual property rights (IPRs), the value placed on foreground and background knowledge, and the contractual basis for the joint work programmes.

1.2 Origins of Responsible Partnering

In 2002, the European Research Advisory Board (EURAB) recognised the secular change in relationships between the public and private sectors and recommended[2] the establishment of a Working Party from

[1] In the late 1960s, research outsourcing was estimated as being in the order of 3%. Such activities were typically executed on a very local basis. More recent studies, for example in the 2006 EU Industrial R&D Scoreboard, suggest outsourcing has reached 15% or more in some sectors. Aggregate industrial research is also several times greater in real terms and is organised on a much more global basis, including in partnerships, than in the 1960s. Although only a proportion of the work that is outsourced involves collaboration with universities, the trend is clear.

[2] European Research Advisory Board, Advice 2001-2002 (2002), European Commission



industry and academia, including legal and patents expertise, charged with creating pragmatic solutions to disputed issues such as IPR. EURAB recommended that the European University Association (EUA) and the European Industrial Research Management Association (EIRMA) should be the main participants in this Working Party. This recommendation also reflected the concerns of the member organisations of EUA and EIRMA, which responded positively and invited the ProTon Europe network, a pan-European network of technology offices linked to public research organisations and universities, and the European Association of Research and Technology Organisations (EARTO) to join the initiative.

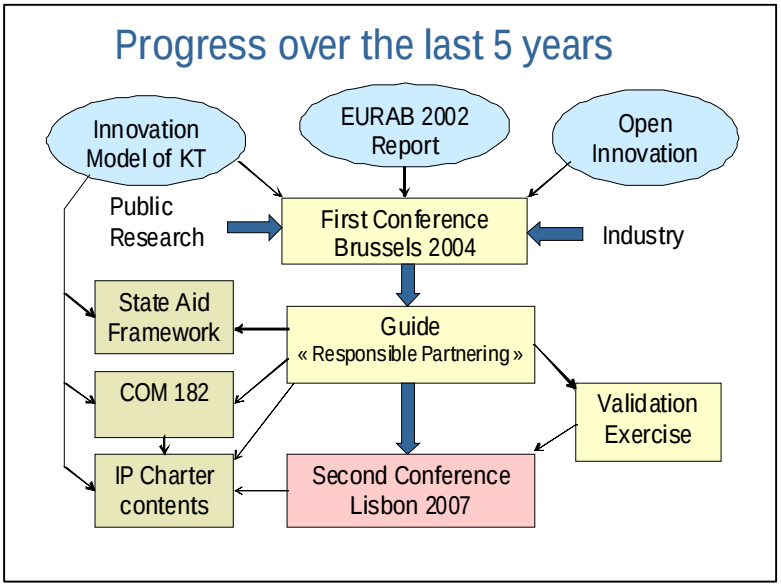
At the Special Conference[3] held in February 2004, delegates from the four constituencies met to discuss knowledge transfer activities involving (primarily) the larger companies, universities and research institutes, and identified a range of good working practices. The conference demonstrated considerable common ground, and placed the highlighted concerns within a broader context of effective collaborative R&D designed to reinforce the quality of research in both public and private sectors.

Conclusions included some actionable guidelines and a suggested process for implementing these guidelines. The main recommendation was for companies and institutions to base their approaches on principles that can enhance and reinforce trust and reliable delivery. Achieving this would involve:

- Recognising that the company, university and RTO have common interests in strong, well-connected research institutions;
- Taking steps to identify and align interests and spending time to understand what each needs and can offer and what is already available;
- Making and communicating strategic decisions about institutional direction and approach;
- Organising for long-lasting relationships, resilience and adaptability;
- Providing the professional skills to support the chosen policy;
- Starting collaborations by identifying what all partners expect to achieve, and then using projects as the implementation tools;
- Regular interaction to develop standard processes and shared understanding of good practice;
- Working together to achieve the more effective Intellectual Property (IP) regimes while recognising the value of the methods that already exist and encouraging greater quality, not quantity, of IP;
- Setting up and supporting university courses to develop the skills for a world of open innovation; and
- Encouraging a cross-disciplinary view of innovation.

[3] www.eirma.org/f3/local_links.php?action=jump&id=598&catid=51

Based on these recommendations, a task force then developed the Handbook of Responsible Partnering[4], published at the start of 2005 and endorsed by the four associations and the European Commissioners for Science and Research (Commissioner Potoçnik) and Enterprise (Commissioner Verheugen). As a grass-roots initiative, Responsible Partnering was designed to enhance collaborative R&D, knowledge exchange and technology transfer by promoting approaches that have already been shown to work well in practice. The principles established at the 2004 conference lie at the heart of the initiative. The Handbook explains how to implement these principles, and gives checklists tailored to the generic requirements of companies, universities and RTOs, without being unduly prescriptive in its approach.



1.3 Validating Responsible Partnering

Responsible Partnering was promoted throughout Europe (and also at a high level event in the United States) starting in 2005, using conferences and similar events and a public website as dissemination platforms. In 2006, the European Commission sponsored a validation exercise[5] to check the relevance of the Responsible Partnering guidelines and assess acceptance of these guidelines by stakeholders. The exercise demonstrated general agreement on principles and recommendations. The guidelines were perceived as good (particularly for others to adopt and follow), although actors generally wanted to retain the choice of when and how to apply them.[6] Some called for more detailed and specific rules, feeling that the initiative might otherwise become "motherhood and apple pie." However, this was not a universal view. Main conclusions were that:

- Adoption and improvement processes have to work "bottom up" in order to ensure that the players are convinced of the strategic importance for themselves;
- Public policy frameworks have to operate in ways that are conducive to excellence in collaboration; in the State Aid framework; in funding schemes, in patent systems and schemes for IP ownership and through equitable forms of management;
- Good models for the effective administration of collaboration R&D are available, but there is a shortage of skilled professionals to put these models into practice; and
- It remains difficult to identify good partners and opportunities for useful partnerships.

[4] www.responsible-partnering.org

[5] A copy of the report submitted to the European Commission can be obtained on request to the EIRMA Secretary General

[6] Strikingly, those who took part in the validation exercise often claimed they were already following these recommendations to a greater or lesser extent. However few wished to make a public commitment to this effect.

Since then, Responsible Partnering has continued to gain endorsement. Its recommendations and guidelines have contributed to the drafting of innovation-related policies at European and national levels, including:

- The Aho Report, Achieving a More Innovative Europe[7], issued in early 2006
- The 2006 Community State Aid Framework[8];
- Commission Communication COM (2007) 182[9] on improving collaboration between public research and industry;
- The recommendations from the 2007 German Presidency of the European Union, concerning the adoption of an IP Charter by public research organisations.

In addition, the initiative has helped to underpin a number of other activities at grass roots level or led by governments:

- The model consortium agreements[10] for Framework Programme projects developed by the DESCA project;
- The University-Industry Partnership in the United States, which highlighted essentially identical problems to those seen in Europe and provided very similar recommendations[11];
- National and sectoral codes of practice developed, for example in Ireland[12] and The Netherlands[13].

Against this background, the 2007 Conference took stock of the effectiveness of R&D collaboration supporting the transfer and exchange of knowledge and technology between research and industry. Its aims were to assess trends since the launch of Responsible Partnering in early 2004; understand how the Responsible Partnering recommendations are working in practice; map out where further improvements are required; and assess how these improvements might be achieved.

[7] www.eirma.org/f3/local_links.php?action=jump&id=1020&catid=55

[8] ec.europa.eu/comm/competition/state_aid/overview/index_en.cfm

[9] www.eirma.org/f3/local_links.php?action=jump&id=2238&catid=52

[10] DESCA, Development of Simplified Consortium Agreement, www.desca-fp7.eu

[11] www7.nationalacademies.org/guirr/Guiding_Principles.pdf

[12] National Code of Practice for Managing and Commercialising Intellectual Property from Public-Private Collaborative Research, Forfas, (2005), www.eirma.org/f3/local_links.php?action=jump&id=1011&catid=34

[13] Taking Advantage of Patents, H.W. Hanneman, Study commissioned by the Dutch Ministry of Economic Affairs, VNO-NCW and VNSU/NFU, September 2007

2 State of Play

The road to wisdom? – Well, it's plain and simple to express:
Err and err and err again
but less and less and less.

Piet Hein

This chapter summarises the discussion that took place at the conference concerning the current situation and recent progress. Copies of the speakers' PowerPoint presentations are available on the EIRMA website[14].

2.1 Expectations

The Conference revealed considerable progress since 2004. Frameworks for collaboration have become richer, and are involving a greater diversity of organisations. Evidently, quite a number of companies, universities and RTOs have established structures for collaboration. The technology transfer function has become an established feature in many universities. The concept of Open Innovation is being increasingly accepted and adopted. Public policy discussions are generally no longer about "should we be encouraging this approach," but rather "how can we ensure that it functions effectively" and "what evidence exists that the situation is working as well as desired?" Actors are moving from deciding the strategy to adopt towards assessing and assuring its effectiveness and there is now need for relevant metrics.

Nonetheless, traditional difficulties also remain, as expressed in remarks such as these:

"Universities don't understand the value of Knowledge Transfer. Knowledge exchange is more a concept of embedding bottom-up collaboration."

"It is unusual to make a PhD with a small company, as a longer programme and more strategy are needed."

"There is a widespread perception that top research is not possible with industry."

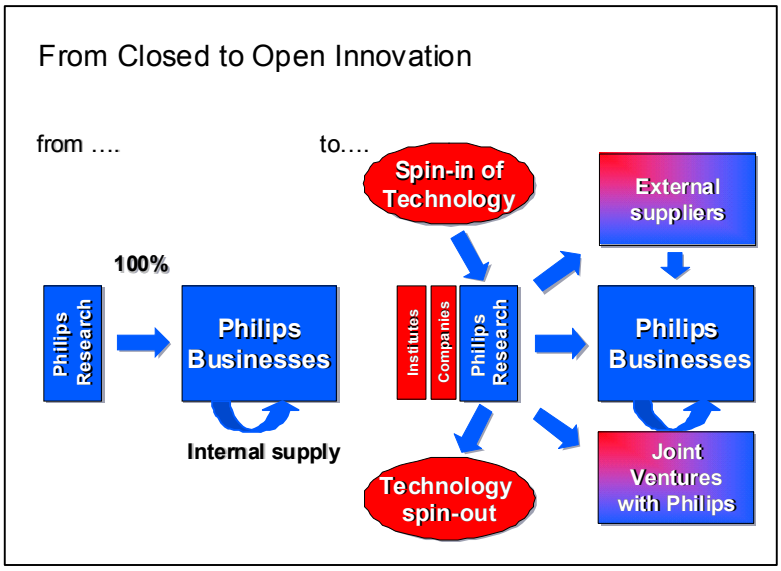
No miracle recipe exists for resolving these problems, but there is also no evidence (for example) that individual collaborations in Europe are intrinsically better or worse than elsewhere. Concerns are expressed about the rate of take-up of good approach in Europe compared to other parts of the world, but similar concerns are also expressed in the United States[15].

When preparing for this Conference, it was felt that main areas for improvement would relate to:

- Increasing substantially the number of European-based universities, research organisations and companies which turn the (research and business) opportunities offered by Open Innovation to their advantage in pursuit of their missions and in ways that benefit Europe;
- Identifying and removing any barriers hindering collaborative working where this can be an appropriate and effective approach (such barriers include an insufficient number of evident opportunities, incompatibilities related to different national systems, duplicated initiatives, etc.);
- Developing a sufficient supply of the high quality supporting skills, management practices and attitudes which underpin beneficial collaboration among research actors; and
- Establishing the broader sustainable environments (the "innovation ecologies") that will reinforce productive innovation in Europe, while ensuring a proper balance between collaboration and competition and mission-oriented approaches and frontier research.

[14] www.eirma.org/f3/showthread.php?t=7570

[15] For instance, "Globalisation of the Knowledge Economy: Challenges and Opportunities for Research-Intensive Universities in the EU and the US", MISTI – European Commission Panel Discussion, MIT, 1st February 2008



Achieving these improvements depends on many factors: the hope has been that, as early adopters learn how to benefit from more open approaches to research and innovation, this will in turn spill over to create the conditions and mindsets for others to take up their good practices. The desired end result is that successful initiatives are replicated widely, while tailored to local needs in ways that encourage productive knowledge exchange.

2.2 Assessing Science-Industry Collaboration

The Conference began with discussion of the background and response to the Responsible Partnering initiative, along the lines set out in Chapter 1. Although delegates gave different emphases, for the most part they reconfirmed the findings of the 2006 validation exercise. Some people looked for unambiguous, more forcefully-expressed guidelines; some wanted more emphasis placed on raising awareness of existing opportunities for collaboration.

Jan van den Biesen described **Philips**' adoption of Open Innovation, now several years in its implementation. In line with the company's dynamic business model, its R&D centre in Eindhoven has become a flourishing technology centre involving customers and competitors, fostering many types of contact with public research and involving substantial investment into this local environment.

By third quarter 2007, Philips was taking part in about 100 projects in European and national R&D programmes. These involved around 900 partnership links with some 550 different partners, 48% PROs. About 16% of the full time staff in Philips Research are involved in European or national public programmes, in addition to research contracts granted to universities and participation in institutes such as ESI, Holst and CTMM. Some 25 part-time professors and 10 professors act as external advisors, and there are numerous visiting students, R&D trainees and postdoctoral students.

In the context of the company's "Business Excellence" drive, the corporate team recently evaluated its strategic institute-to-institute partnerships in EU, in a study involving nine publicly-funded research organisations and nine universities. The process included a self-assessment by Philips and by the partner of adherence to the Responsible Partnering guidelines, using the checklists contained in the Handbook and some additional open questions.

The assessment produced overall high scores, although Philips Research tended to rate itself lower than did the PROs and universities. van den Biesen wondered whether these differences are the result of greater self-criticism within Philips Research; because PROs and universities really are better 'Responsible Partners'; that the scoring system is biased in favour of PROs and universities; or simply that there are differences in the checklists for PROs, universities and companies.

He made some recommendations for better partnering:

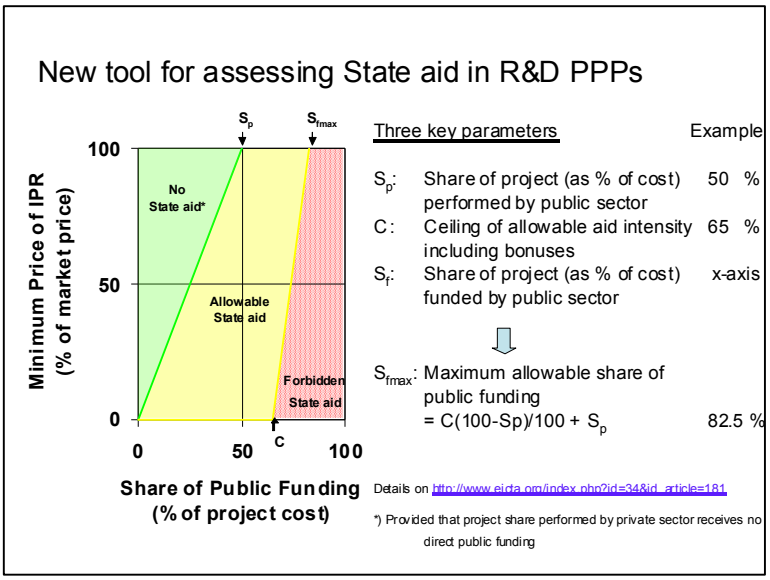
- More training
- More exchange of personnel between partners
- More technology audits on commercialisation potential

He also remarked on the Responsible Partnering Handbook. Checklists are useful and relevant but place too much focus on policies and procedures. The human aspect is missing and differences between checklists limit comparability of results. He recommended:

- Incorporating human aspects into the process
- Running additional tests for completeness
- Making checklists (more) similar for PROs, universities and companies
- Turning the checklists into a genuine assessment tool by: a) Formulating clear questions and statements; b) Introducing scores and c) Establishing criteria for being "Responsible Partners"

2.3 State Aid Rules

Discussion then turned to **State Aid rules**. These may constrain the allowable forms of collaboration by placing restrictions on direct government aid to firms via R&D subsidies and indirect government aid via collaboration with research organisations which are in receipt of public funding Although the 2006 rules[8] are seen as a significant step forward, there remains uncertainty about what is and is not permitted. As a



result, the rules remain a barrier to the volume and utility of collaborative activities, because organisations fail to enter into these collaborations or because the rules lead to too much caution. Greater clarity is required.

The analysis of situations involving allowable, as well as zero, state aid is quite straightforward (see figure and the web site[16] of EICTA). van den Biesen recommended that this analysis should be incorporated a) in national programmes; b) in the Commission's general block exemption regulation. However, so far, DG Competition has been reluctant to give specific operational guidelines to this effect.

The rules indicate that indirect State Aid does not arise in these situations:

[16] European Information and Communications Technology Industry Association, www.eicta.org/index.php?id=34&id_article=181

- When firms pay the full cost of a project;
- When the IPRs from the public research organisation's activities are fully allocated to the research organisation or other results are widely disseminated instead;
- When the research organisation receives compensation equivalent to the market price for those IPRs that result from the activity of the research organisation and are transferred to firms; and
- When partners' rights in contractual agreement are assessed as adequately reflecting their interests and contributions

If none of these conditions is fulfilled, the full value of contribution from research organisation is considered as aid to firms.

To facilitate practical applications, a revised version of the Handbook of Responsible Partnering and future voluntary European Charter for Intellectual Property should explain:

- The boundary conditions for allowable State Aid; and
- Some examples of balanced IPR modules that adequately reflect partners' interests and contributions, and therefore can be assessed as constituting no State Aid.

Subsequent presentations confirmed these concerns about State Aid.

2.4 Knowledge Transfer Partnerships, Universities and Regions

Requirements for making partnerships successful can be summarized as follows:

- Trust
- Understanding (make sure there is one)
- Time (needed for long term relationships)

The meeting made clear that there is no "one size fits all" approach to these requirements.

David Joyner discussed **Bangor University**'s role within the Knowledge Transfer Partnerships scheme, and its work with the SME sector. He and **Oggy East** (**Semantise**) explained how this approach is working in practice.

Semantise is a five-person company of software authors that also acts as channel partner for a Canadian software company. Despite its size, it has supported short undergraduate projects, PhDs funded by the European Social Funds (ESF), and knowledge transfer partnerships (KTPs). The UK's KTP scheme[17] links industry, academia and an individual in a partnership of mutual benefit. A business with a (usually technical) issue approaches the KTP scheme for help. Through a regional network, the organisers find academics with the skills to address the issue. Once a successful introduction has been made, the academic chooses a graduate to work in the company transferring the solution. The government and the company share the costs of the academic's efforts and the graduate's salary.

Semantise used the Responsible Partnering guidelines to assess a KTP it had undertaken with Bangor University and a company called Vision Support Trading, which makes Braille books. Each of the partners gained a different set of advantages, although all three felt that participating had helped them organise for lasting relationships and gain the right professional skills. Vision Support Trading also improved its profitability and benefited from the new business processes introduced during the project. The graduate who did the knowledge transfer reported to the company's board during the project, and later got a job there. The university managed to embed its world-class research into a company.

All of the Responsible Partnering guidelines were seen to be relevant, in different ways, for graduate associates, the university and the company partner:

[17] www.ktponline.co.uk

- Helping the graduate associate to get experience;
- Helping the university to get a world class research embedded in a company;
- Helping the company partner with profitability, resources, new products and processes.

Issues change over time and the university has been able to identify areas for self-improvement:

- Aligning interests can be seen as an early-stage issue. However, some companies reported at the end of the process that the return on investment was not as high as it could be. It seems that some companies had unrealistic expectations;
- The need for standard processes and clear communication extends throughout the collaboration. Around one fifth of employees started the project unclear what the scheme would entail in practice and what would be the respective roles of company, student and university. Administrative processes can be improved to make them more "user friendly";
- Early discussions highlighted the value of the "badge" of working well with universities and the appeal of good two-way exchange of knowledge and experience in helping two-way exchanges in thinking and expectations. Three quarters of companies were confident that the research would benefit them.
- For SMEs in particular, such a badge was identified as having great potential value in gaining new customers.

Wageningen University and Research Centre is a specialised institution, concentrating on a limited number of domains. It includes the university, with its 10,000 students and 6000 faculty and staff, and a Research Centre with annual revenues of €600m. It offers a broad span of activities from teaching to applied research in topics including nutrition and food production; the living environment; and health, lifestyle and livelihood.

The university's approach depends on integration of efforts. **Just Vlak** described its evolution towards "co-innovation" (the joint effort between education, research, market, society and policy) as a response to the globalisation of research, education and innovation; the growing importance given to transfer of knowledge and public-private partnership consortia; increasing mobility of human resources; and the need for sustainable research funding.

Lessons learned have concerned the importance of achieving quality; addressing social challenges; ensuring focus and critical mass through co-innovation; the need to put in place the right supporting skills; and that this strategy attracts key people, in the form of excellent students and excellent researchers.

Vlak and **Lucas Noldus** illustrated "best practice" research on co-innovation using the "Restaurant of the Future" initiative, involving the Dutch SME, **Noldus Information Technology BV**. Founded in 1989 from Wageningen University, the company develops software and services to help study human and animal behaviour. It has 90 employees and more than 4000 customers in companies, universities and research institutes in 75 countries, and currently has thirty five people involved in R&D. Noldus mentioned three reasons for partnering:

- Requirements gathering: User-centred development requires involving the end users in the innovation process.
- Research: The company cannot afford to carry out the required fundamental research. Partnering with technical universities offers access to many different disciplines and a way of resolving this problem.
- Testing and validation: "Proof of principle" is essential for acceptance. Publications by independent scientists enhance credibility. The company does not have test animals and test persons.

These points were illustrated using Wageningen's "Restaurant of the Future" project[18], a shared facility for the long-term study of what and how people eat. Healthy food has high societal relevance but traditional

[18] www.restaurantvandetoekomst.wur.nl/

consumer research methods (interviews, surveys, focus groups) have only limited value in determining how people will respond to what is on offer.

The project has developed into a €3m consortium between the university, food service company Sodexho, and two small to medium-sized enterprises (SMEs). After three years' work the Restaurant of the Future opened in October 2007 on the Wageningen campus, with seating for 200, a café, research kitchen, sensory laboratory, mood rooms and 45 video cameras to watch people eat.

The university contributes by providing project management, scientific expertise and research. Noldus contributes video, computer and sensor technology, data collection and analysis software and system integration. Sodexho contributes operational management and catering services, and Kampri provides kitchen equipment.

The project offers significant benefits for each partner. The university gets a facility for teaching and research, as well as the opportunity to win contract research projects. Noldus can test new research tools, use the restaurant as a showroom and expects spin-offs to other markets. Sodexho should gain a better understanding of consumer behaviour, as well as having a place to test new catering concepts. Kampri gets a place to test new equipment and a showroom.

Success factors are various: the fact that there are no competitors within the consortium enable the respect and trust between all the partners; highly motivated champions in each partner organization as project leaders; a straightforward division of IPR between partners and, last but not least, significant benefits and incentives for each partner according to the ability and willingness to invest by each partner.

The large media coverage achieved for this initiative was beyond their expectations and highlighted the societal relevance of the theme.

The emergence of Open Innovation has led to growing awareness of the need to move beyond simple forms of clustering. More balanced forms of entrepreneurship are needed that will be more effective in terms of promoting spillovers, cross-fertilisation and innovation. **Tadeusz Luty** (**Wroclaw University of Technology**) discussed such steps to establish a resilient knowledge based economy that capitalises upon the regional potential of lower Silesia.

He explained that, in the past, there was good cooperation between universities and industry in the region but this was on the basis of existing expertise and came mainly from private business initiative. A change occurred when the local industry almost collapsed. This helped lead to a change in mentality. Local government has helped to foster stronger partnership between research and business, thus enabling innovation. The service of the university to society has enlarged in other aspects. Innovation is not necessarily technological and can contribute to regional development. Money from European tax-payers is being invested in R&D. Professor Luty felt that Poland was being offered an opportunity that can happen only rarely in the life of a country.

The case history can be seen in terms of several key components:

- European Commission President Barosso's proposal for a European Institute of Technology (EIT) helped to stimulate efforts by the city of Wroclaw and its institutes to work out to achieve their goals;
- Since substantial public investment will be required, the community has had to construct and present the arguments that justify this investment from sources such as the Structural Funds;
- Since leadership is required, the regional actors must agree who will provide this [in this case the city mayor, university leaders and private sector CEOs]

Pascal Iris described his work at **Armines**, which manages research contracts executed in laboratories associated with Ecoles des Mines. As a private, non-profit organisation created in 1967, Armines currently has 550 employees and turnover of 38M€ in 2006 from activities in 15 locations. A subsidiary company handles the commercialisation of software-related research results.

Iris emphasised the need for easy-to-understand, efficient and concrete principles for collaboration, in order that these will be widely adopted and applied. He described several features that characterise robust forms of collaboration:

- A consistent basis for sharing of knowledge and results;
- Evaluation of activities on a "full cost" basis (including overheads) in order to know exactly who finances what; know the complete costs of the research program (including salaries, local and general overheads, etc.); and know the exact balance between private funds and public funds committed to the contract;
- Negotiating IPR on a basis that makes Open Innovation possible.

He encouraged partners to organise themselves to achieve a fruitful use of results, according to the positions and the objectives of the different partners in the value chain, by means of coherent cross-licences.

In respect of IPR, he noted the importance of defining the Background of the respective parties and distinguished two types of results:

- Generic results (methodology, algorithm, etc.) capable of being applied in various fields; and
- Specific applied results, which concern the enterprise.

As general principle, he proposed that:

- Improvements to Background belong to the owner of that Background;
- The public laboratory can continue to improve its own knowledge and know-how;
- The enterprise can take advantage of this knowledge on the basis of a long-term collaboration;
- Generic results belong to the laboratory; and
- Applied results belong to the enterprise.

He felt that the concepts of Responsible Partnering are still not sufficiently visible, except among a small group of advanced specialists, and encouraged a major communication effort to redress this situation.

2.5 Sustainable Collaboration and SMEs

The SME community faces specific issues and concerns, which differ from those of larger companies with well-established professional support systems and cultures of collaborative research. Improving their flexibility to adopt innovative business models should help them to develop and grow and thereby enhance their contribution to the economy.

The European Framework Programme has successfully and substantially contributed to the development of cross-border collaborative research. Seen from the point of view of SMEs, the Framework Programme offers an interesting source of funding of collaborative research and development when the following conditions are met:

- The technology challenge is likely to require expertise and scientific excellence that are not entirely available at regional of national level;
- The results are of strategic importance for the participating SMEs. Because of the management complexity and of the time constraints involved in processing the proposals, FP projects are not suitable for short term or non strategic projects;
- The SMEs are prepared to share the results with other companies facing the same challenges. The benefits will come from combining such generic knowledge with the competitive position of the company. This should be reflected in appropriate management of IP.

It is worth noting, however, that participation of SMEs in the Framework Programme has been relatively low, and to ask whether the adoption of Responsible Partnering guidelines can help.

Alain André (**Cicom**) reflected on these questions and set out possible reasons for low participation, based on Cicom's experiences. Cicom is a Business Innovation Centre based in Sophia Antipolis, the oldest science park business innovation centre. Using the example of the SME Octet and the project i-Tracs, he illustrated some of the typical problems encountered. In particular, finding good partners and aligning interests in a consortium agreement and in the management of IP are particularly difficult.

The participation of an SME in a potential Framework Programme project represents a large investment of management resources with a relatively low success rate. There is a need to lower the barrier by providing the expert assistance, training and financial support that will reduce the burden and increase the success rate.

Lubo Jankovik is managing director of **InteSys**, an SME spun off from Coventry University in 1992. The company has participated in Framework Programme, Eureka and UK government technology transfer projects, as well as teaching other SMEs about the "ins and outs" of the process. He said that SMEs face a number of barriers to participating in such projects, including the time involved in making a bid with an uncertain outcome, the lack of financial and coaching help, and uncertain commercial returns. He believes many universities have become large organisations that are not commercially-oriented and do not understand SMEs or the financial rules surrounding such collaborations. He also doubted whether the levels of funding available are attractive to SMEs.

Jankovik proposed overhauling the support system and evaluation process, cut bureaucracy and introduce a coaching and evaluation process like that used in the UK's KTP scheme discussed later. His strongest prescription, though, is to make schemes designed to support collaboration more friendly to SMEs. If SMEs are important to the EU as engines of industry and commerce, then it needs to be easier and more financially attractive for such SMEs to participate and lead projects rather than being considered as inferior participants.

The **University of Coventry** is acting as an intermediary to establish Collaborative Research projects with industry and academia involvement, it provides information source on Framework Programme 7 and is advising on Collaborative Research Project Management. **Robert Roze** explained the research organization barriers as there is a dependency on their objectives (target of publications): a commitment is needed at all levels of the university in order to collaborate with the business. Also there is a need to establish clear communication channels. The intermediary role of the Coventry University can be summarized with advices gathered in the SMART approach:

- Specific: Do the objectives specify what they want to achieve?
- Measurable: Can you measure whether you are meeting the objectives or not?
- Achievable: Are the objectives you set, achievable and attainable?
- Realistic: Can you realistically achieve the objectives with the resources you have?
- Time: When do you want to achieve the set objectives?

Main barriers for SMEs include time investment, lack of financial and coaching assistance, lack of understanding from universities, and increased competition in EU funding especially after the enlargement. Barriers for universities include that they have their own non-commercial agenda, may be too large to think small, and may lack of enthusiasm for what has "not been invented here".

Paolo Onesti from the Industrial Liaison Office of the **University of Modena and Reggio Emilia** presented the UARD (Unified Area for R&D) initiative, which is dealing with quality and management of conflicts when connecting SMEs, R&D and the Framework Programme.

The specificity in Italy is the small size of the companies (8 people on average) and their number (more than 100,000 companies for 1.5 millions citizens). 95% of employees work in SMEs. Introducing research into these enterprises is problematic. One solution is to operate on the regional level and to work on the culture in order to achieve relevant projects with the universities for young engineers working in SMEs. This approach has already led to better attitudes regarding R&D. The general local agreement is enabling that research to be done by the university, and the research management by innovation centres.

Paolo explained how they have applied Responsible Partnering:

- Horizontal sector of application, to obtain opportunities of diffusion;
- Enterprises not in competition, to avoid complex Consortium Agreement;
- FP project followed by shared application, to keep SMEs in touch;
- Management by UARD Unified Area of R&D, for quality and management of conflicts.

Nuno Silva of the knowledge transfer office at Portugal's **Instituto Pedro Nunes**, pointed out that there are some basic issues to overcome. Academics are not that interested in repeating work, so it is difficult to engage them in a series of similar projects. Long term relationships are good in theory, but many companies do not know what sort of research they will want in 20 years' time. Universities are becoming much more aware of IP issues, which may slow negotiations.

So how do we move Responsible Partnering forward? Silva's reply was to concentrate on "grassroots" moves that can deliver immediate benefits. Portugal's Innovation Relay Centre and Innovation Agency have worked on two basic programmes. In the first, they pay a team of people within an SME to develop a relationship with an external R&D group on a specific project. In the first year the target was to put groups in 20 companies but in fact one hundred were sponsored and now there are 250. This is seen as a very promising way to connect SMEs with R&D. The second programme co-finances PhD and Masters students within SMEs, with a 50-50 funding split.

3 Identifying Good Partners

There is no-one, no-one at all
Never has been and never will be
A lover, male or female
Who hasn't an eye on
In fact they rely on tricks they can try on
Their partner

Evita, by Tim Rice and Andrew Lloyd Webber

3.1 What Do My Partners Expect from Me

Olivier Peyret handles R&D collaboration and university collaboration issues for **Schlumberger**, which has the largest R&D spend in the energy business. He is also responsible for the recruitment of 7000 graduates each year. He reminded the conference why industry cared about partnering with academia: "*The world faces a serious energy challenge. If we keep increasing energy demand by 2 to 3% per year, with oil and gas coal providing 8% of our energy, we have a very significant challenge to keep up with demand.*" Schlumberger cannot provide the technology to meet that challenge by itself. Its need to open up and seek partners is obvious.

He explained the increasing emphasis that Schlumberger places on its collaborations with universities and public research organisations. This is seen both as a matter of survival and a significant challenge. While the IP question is important, it is not the central issue for their competitiveness. In his view, the key issue for the company is how to be perceived as a good partner by universities.

Peyret identified five criteria for partnering:

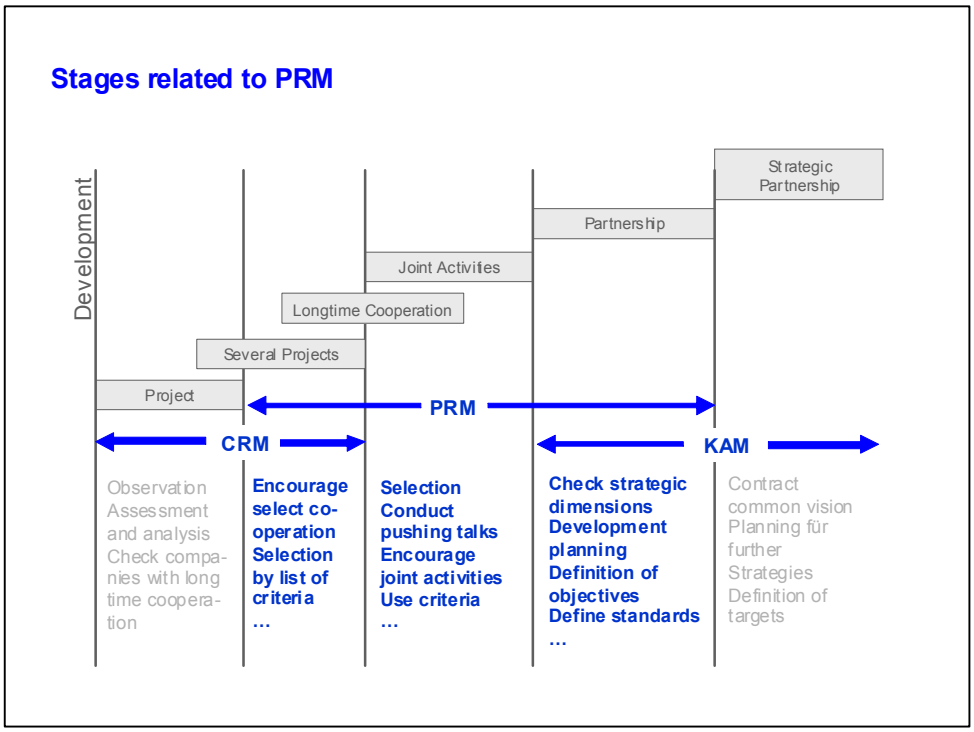
- Visibility of the right skills: It is extraordinarily difficult to identify skills and talent;
- Excellence: in Science and Technology as key motivator and in interdisciplinary skills;
- Proximity: Schlumberger's rationale is that it wants to be no more than two steps from the best scientists and labs. "*It is absolutely crucial to be next to our partners physically. We just moved R&D to the MIT Campus, in Massachusetts, Tsinghua University in Beijing and King Fahd University in Dhahran.*"
- Strategic engagement between organisations. "*We have to choose our first partners very carefully for their own capabilities and for their access to others. We also want to make strategic links, so we engage at the highest levels with universities and public research organisations, as well as being present in innovation hubs*."

Peyret described the challenge for Europe of becoming the world's innovation hub. "*The only way Western countries will survive, with a cost base three to five times that of the same work being done in India and China, is if private centres can demonstrate they have a partnership culture that is second to none with whoever is around them.*"

3.2 Partner Relationship Management

Thomas Baaken manages the science marketing research centre and is professor of technology marketing and business-to-business marketing at **Muenster University of Applied Sciences.** He presented his research on customer satisfaction in R&D relationships between industry and academia. The results showed that customers want more focus on outcomes and competencies. The requirement is to change the mindset in universities from being process-oriented to being outcome-oriented organisations. It is also necessary to manage expectations. Different customers have different expectations, expectations vary by country, and it might not be in the institute's interests to try to meet every possible expectation.

Baaken proposed the model of a Staircase as best way to implement the goals of the Responsible Partnering initiative, beginning with a single project, which becomes many projects and then a limited co-operation, followed by joint activities and partnerships and finally a strategic partnership.



Muenster University has established a vice-rector of partnering to reflect its belief in the organisation-wide importance of partnering. On IP issues, the university has rejected benchmarking its performance according to number of patents and instead shares the IP that its collaborative projects generate and also shares any subsequent royalties. University processes have been adapted so that R&D is done in an industrial context, regarding the university as part of a manageable value chain.

He described how the principles of partner relationship management are being used to handle the process.

- Highlighting the need to communicate the change in strategy to potential customers ("the market");
- Understanding how customer satisfaction depends on the balance between expectations and perceived performance in meeting these expectations; and recognising that expectations differ, for example among countries, as illustrated with examples from Germany, Australia, South Africa and Japan;
- Understand clients' expectations and perceptions of delivery, while recognising that not every partner wants or needs the same;
- Defining different degrees of partner relationship as a ladder (from project to long-term strategic partnership), but understanding that it is not always necessary or desirable to move forward from one form to another (i.e. segmenting the market);
- Establishing positions that express the strategic institutional commitment within the organization; and
- Acting to meet the agreed needs accordingly and according to institutional objectives.

3.3 Consortia Approaches

Adrian Duncan of **TWI**, a membership-based research and technology organisation with 3500 industrial members, discussed TWI's approach to partnering within Framework Programme projects. The organisation carries out industrial R&D and consultancy and other, publicly-funded, research, and looks for projects that offer funding, some exploitable IP and long-term partnerships. It takes a strategic view of potential partners, considering them on their ability to fulfil the project's needs and provide a related supply chain, as well as how working with them will change TWI's overall mix of partner types and locations.

TWI is streamlining its proposal process to minimise the effort involved and improve the chances of success. In an outline stage, the partners agree to work together in principle and the industrial partner provides a limited input to the proposal to minimise the administrative overhead. Once this stage has been successfully negotiated, TWI moves on to a full proposal that requires more input from the partner and approval from an appropriate management level. This two-step approach has improved the chances of successful partnerships, as well as wasting less of everyone's time.

Duncan laid out some of the myriad threats to a successful partnership. These include technical issues such as competing technologies or slow results, financial issues such as poor record keeping, management issues such as differing cultures, and commercial problems such as conflicting markets or a change in the industrial partner's strategy or ownership.

It is important to manage the process to minimise administrative effort – i.e. to gain time and effort as it is important not to put too much burden on the industrial partners, to minimise the demands on busy industrial contacts wherever possible (this is why there are 2-stage proposals: the outline has limited administrative information, the full proposal is worth spending more time).

The different partners' expectations vary according to their specificity: for industry and the SMEs, time is very important as a rapid exploitation is needed, and it is somehow different for the research organizations.

He emphasised the importance of delivering results on time (especially within the context of competing technologies) and establishing strong relationships early. One suggestion is to visit them at the beginning, for example within three months of the start of the cooperative project.

In summary, partner recruitment and retention involves:

- At least a core group from existing contacts;
- Identified expectations for all partners;
- Minimised demands on busy industrial contacts wherever possible;
- Anticipation and avoidance of conflicts and dealing with problems rapidly and decisively;
- Focus on project delivery;
- Establish strong relationships early;
- Comprehensive support for partners.

The discussion noted the key to such relationships is about "establishing long-term relationships and getting middle managers to understand a long-term approach of universities". Peyret noted that partnering at the top level is fine, and between scientists is fine, but middle management usually has a harder time to see the value of a long-term relationship versus the current demands being placed on them. He proposed that the best way is to have a contractual obligation over five years. Iris felt that this is not just a middle management problem: senior management create difficulties through stop-go policies.

Duncan suggested a pragmatic approach: "*We can't set out to create a 15 year relationship. You need to develop the trust that enables one project to roll into another*."

4 Professional Development

We don't need no education.
We don't need no thought control.
No dark sarcasm in the classroom.
Teacher, leave those kids alone.

Pink Floyd: Another Brick in the Wall

Open Innovation has become the new paradigm for the Knowledge Economy. It is not surprising that the need for trading knowledge is much larger than ever before. This is a very complicated task, which involves competencies, skills and knowledge in technology, intellectual property and business development. Good practices, such as those developed from Responsible Partnering principles, can only help when there are professionals in place who are capable of implementing them in practice. Conversely, many of the identified problems can find natural solutions when appropriately-minded professionals support both sides of the exchanges.

Currently, there remains a shortage of trained professionals, especially in university transfer offices and in SMEs. This gap was pointed out at the 2004 conference and by the panel of experts assembled by the Commission in the CREST working groups. This need can only be met in the medium term through continued development of professionals from related disciplines.

Three complementary initiatives were presented to address this problem:

Gilles Capart (**ProTon Europe**) recommended the development of a qualification framework based on the European framework for lifelong learning (EQF: European Qualification Framework). The surveys performed in industry and public research organisations have indeed shown that the qualification requirements are very similar and may form the basis of a well defined profession. The development of a European EQF standard for knowledge transfer would have several benefits:

- It would increase the recognition of this new profession and would attract professionals to this new opportunity in their career;
- It would encourage universities and other higher education institutions to develop relevant training meeting the accreditation requirements;
- It would support the development of a common language between professionals, whether in large companies, SMEs and research organisations, facilitating the effective transfer of knowledge.
- It would facilitate cross-border knowledge transfer and mobility of the professionals.

To be successful, such an initiative would require a wide support from the stakeholders groups and the associations supporting responsible partnering are well positioned to do so.

Ian Harrison described the objectives and the organisation of the new **Institute of Knowledge Transfer**[19], created in 2007 in the UK and Ireland, with a very wide support from university transfer offices, industry and the government. The core activity is the certification of knowledge transfer professionals based on education, training and experience using criteria defined by a professional standards committee and judged by referees. This will improve the recognition and credibility of knowledge transfer as a profession and provide opportunities for its members. Additional services are offered, except training, which is to be supplied by independent parties, which may be accredited by IKT at a later stage.

The IKT is open for membership from outside UK & Ireland and, if successful, could expand to the rest of Europe. If the EQF standard is developed, it will be used as a more formal basis for certification and accreditation.

[19] www.ikt.org.uk/

Peter Pawlek (**Austria Wirtschaftsservice** – AWS, a government-owned company which is supporting SMEs, technology companies and knowledge-transfer organizations) presented the Certified Trans-national Technology Transfer manager[20] (CERT-TTT-M) project supported by the European Commission in response to a recommendation from OMC-CREST[21].

The objective of this project is to develop a certifying degree in knowledge transfer to be awarded by a initial core of 5 institutions from 5 different countries as accreditation bodies. The program is targeting in particular the European research community and will be accessible at national level.

This initiative is complementary to the other two and will stimulate the offering of accredited training meeting the qualification criteria. As some leading higher education institutions develop a successful programme, it is reasoned that others will follow suit in order to meet growing demand.

IP4INNO[22] is another initiative supported by the European Commission to develop relevant training in knowledge transfer, involving some of the same partners, this time targeted mainly at SMEs.

[20] www.ttt-manager.eu/

[21] CREST is an intergovernmental advisory body, assisting the European Council and Commission in performing the tasks incumbent on them in the sphere of RTD.

[22] www.proinno-europe.eu/ip4inno

5 Public Policy Framework

"Anytime you're Lambert way
Any evening, any day,
You'll find us all doin' the Lambert walk"

With apologies to the 1930s song "Doing the Lambeth Walk"

5.1 National Initiatives

The Irish government launched its National Code of Practice for Managing and Commercialising Intellectual Property from Public-Private Collaborative Research in Nov 2005[12]. This code is seen as pro-business and pro-exploitation, as part of a wider strategy to make Ireland a competitive location for collaborative research. It is supposed to accelerate negotiations by educating those involved in the process, increasing certainty and providing opening negotiation guidelines and a timetable, emphasising the need to reach decisions quickly (e.g. within 90 days).

A series of subsequent initiatives have sought to develop and embed a culture of innovation and entrepreneurship into the economy, maximise Ireland's attractiveness for foreign direct investment in R&D, and help Irish companies to grow through knowledge development and management in partnership with Irish researchers. **John Dooley** (**Forfas**) and **Pat Frain** (**University College Dublin**) described the impact and effectiveness of these initiatives.

Forfás has published a draft set of IP Templates to assist public and private sector parties in making use of the National Code of Practice. These are intended to provide guidelines and suggested clauses that are a starting point for negotiation, not to provide a set of rules for conducting research and managing Intellectual Property. The Template Agreements will be used for twelve months, with feedback invited over this period, accompanied by a "Decision Making Guide" to assist users to decide which of the IP ownership options most accurately reflects the circumstances of the project.

Frain explained how the university has implemented codes of practice and related policy initiatives. This has been a meaningful involvement and they had to develop a common language for speeding the timescale. He re-emphasised that adherence to the Code of Conduct is not compulsory and the approach can be set aside where necessary to generate a partnership. So far, one hundred and fifty organizations have been involved, demonstrating the awareness on this issue, especially regarding the IP issues. Ideally, over time, this will lead to greater consistency in approach to negotiations.

He presented a model for a possible future of university-industry collaborative programmes, developed in collaboration with healthcare company Wyeth, which suggests progress from today's knowledge transfer approach towards something closer to co-innovation.

Frain again touched upon issues relating to State Aid Rules, such as difficulties of interpretation (by example regarding the rewarding of inventors – income versus profits); how to ensure that the amount agreed is equivalent to market price for a licence; licence options; assignment and assignment options; and joint ownership.

Jim Houlihan, the head of policy at the Innovation Directorate of the **UK IP Office**, reminded the conference that IP ownership issues are important but may miss the bigger picture. A report[23] to the organisations that fund the UK's universities and public research organisations, published in July 2007, said that key barriers included the overvaluation of IP, and the public institutions' failure to recognise that the overriding objective of knowledge transfer was to benefit the UK economy, not necessarily the institutions that developed it.

[23] www.berr.gov.uk/files/file41123.pdf

For an effective use of IPR, intellectual property must be considered in the context of the innovation agenda. Very few academics, universities or public research organisations get rich from the IP they develop and most university technology transfer offices don't even cover their own costs.

5.2 The European Research Area

Gillian McFadzean is Director of the Technology & Research Services, **Heriot Watt University**, and has acted as chair of the Expert Group set up by the European Commission to look at the Knowledge Sharing aspects of the recent Green Paper consultation on the future of the European Research Area.

She explained how public policy is currently implemented *de facto* through funding rules; explained what this public policy should do to enable Knowledge Sharing:

- Ensure Stability, clarity of expectation and reward;
- Encourage outcomes and goals;
- Provide metrics;
- Support development of professionalism and standards of KT; and
- Clarity and consistency on IP;

and suggested what it should not do:

- Create unintended consequences; conflicting expectations; unnecessary obstacles; and confusion and contradiction;
- Micromanage; and
- Foster inconsistent regional nuances

One problem of current funding rules is an evident lack of understanding (at all levels) of the consequences for actors involved. As example, she mentioned the structural funds, where some Member States have failed to assess what universities can do. Another suggested area of improvement in Europe is better handling of the formal transfer and movement of protected intellectual property across sectors. Europe also has a tendency to launch initiatives (she mentioned the strong strategy in the UK resulting from Richard Lambert's work; the Irish Code of Practice; and others that are not so voluntary in nature). In other parts of the world, particularly the USA, people prefer direct action. We should worry more about the action than about the words. All actors need to cooperate; speak the same language; and be prepared to make some concessions in order to achieve the desired results.

The potential value seen for the IP Charter, currently under development by Commission Services, would include:

- Harmonising process & practice;
- Setting standards and facilitating delivery; and
- Providing clarity of responsibility.

The Charter should embody the principles of Responsible Partnering and support and encourage national Codes of Practice and national strategies.

Denis Dambois explained some of the **European Commission**'s activities relating to Knowledge Transfer:

- An Expert Group on IP management at PROs
- Support for the Responsible Partnering initiative
- The Knowledge Transfer Communication & Guidelines[9], supported by the Responsible Partnering founding associations and several Member States
- The IP charter initiative, stimulated by the recent German Presidency and supported by Council

- The ERA Green Paper[24], including a chapter on knowledge sharing, and the related Expert Group study

The next step is to achieve a recommendation to Member States that:

- Promotes implementation through a monitoring system;
- Offers policy guidance regarding the management of IP by PROs, including a "Code of Practice" offering operational guidance to PROs as an annex to the Recommendation;
- Gives voluntary/non-binding guidance, giving flexibility to adapt to national contexts
- Focuses on main principles, since more detailed guidance exists

This recommendation will include around ten key principles to follow and monitor, essentially covering the strategic recognition of the value of knowledge transfer; the proper management of intellectual property; the funding of knowledge transfer; and international aspects. An Annex, giving the Code of Practice guidance to PROs, will explain key principles regarding IP management with particular reference to research collaborations. With adoption planned in April 2008 and inter-services consultation from February-April, Dambois indicated that the Responsible Partnering associations will be consulted directly before Christmas 2007.

Supporting measures for the implementation:

- The Knowledge Transfer metrics expert group, to promote coherence between the various KT surveys currently being conducted (national, Association of European Science & Technology Transfer Professionals, ProTon, etc.) to obtain an overview across Europe
- The University-Industry forum to provide regular interactions between representatives of PROs, universities, industry and public authorities, to discuss any relevant KT issue, including to review the Code.

In the subsequent discussion, several points became clear:

- A European Bayh-Dole Act is not in question
- More visible and extensive collaboration between different parts of the Commission is encouraged
- Given the lack of awareness of IP issues, the BMBF delegate emphasised the importance of adopting the IP charter.

[24] ec.europa.eu/research/era/consultation-era_en.html

6 Conclusions and Way Forward

"A little less conversation
A little more action"

Elvis Presley

6.1 General Remarks

The conference gave clear indication that the importance of knowledge transfer and collaboration between industry and academia is now very well recognised, and that many initiatives are underway to make it easier, from training schemes to IP guidelines. Delegates also kept sight of why this is important and how progress can be turned to Europe's advantage.

Leopold Demideleer of **Solvay** said that improving knowledge transfer and collaboration was an urgent issue for Europe, because of the differentiating value it could bring to the science base. "*We have a chance for five to ten years to lead in clustering,*" he said. "*China has a problem with the top-down direction of connections. Things aren't structured like that in China, they're led by the military, so their silo thinking will not be destroyed in that period.*"

Gillian McFadzean said that Europe was "*way ahead of the US in collaboration. The system is not broken in Europe, but there is room for improvement.*" She suggested Europe's collaborative strength would help it make the best of the globalisation of R&D. "*The pharmaceuticals industry is looking at China, recognising the constraints there and looking to bring European and Chinese scientists together for the benefit of both.*"

Despite their complexity, European Programmes do bring unique advantages. **Jan van den Biesen** of **Philips Research** remarked that "*Through the Framework Programmes we can call anybody in Europe about collaboration, because the IP issues are already fixed. That's a huge asset that other countries should envy us for.*" Other delegates gave similar messages of support.

Olivier Peyret of Schlumberger said the only way to improve collaboration will be to set very specific measures and targets: "*What are the key performance indicators and how can we measure them? How many post docs, secondments and so on have we managed?*"

McFadzean echoed his comments, saying: "*We have to produce the evidence, measured by an increase in profit and turnover in small companies.*" UK universities have just been through an assessment exercise, which measures the quality of their work and affects each department's funding. As part of the assessment, if a research team had a publication funded by an industrial partner, they were asked to provide a contact number for someone at the company who would talk about the work's impact.

It may be that coupling success in technology transfer to research funding will do as much to drive improvements in collaboration as any voluntary initiative or set of guidelines.

In summary:

- This conference demonstrated considerable progress since the launch of Responsible Partnering in 2004. Companies and institutions are developing the competencies to manage Open Innovation and Co-Innovation;
- The goal for Responsible Partnering remains that successful models of collaboration will be identified more readily and replicated more widely. With adequate support from public authorities, this "bottom up" approach can foster the adoption and tailoring of approach that is necessary to serve local needs well while also achieving widespread productive exchange of knowledge throughout Europe and the personal and institutional skills needed to support this outcome;
- The value of establishing trust-based partnerships is widely recognised. As more emphasis is being given to delivery and outcomes of these partnerships, tools are being developed to monitor and assure performance;

- A consistent view is emerging of the bases for effective collaboration, including recognition of the need for actors to take steps themselves to assure that collaborations will work well in practice;
- There is more attention to the opportunities and needs of the SME community, and greater awareness of the value of interactions between universities and SMEs;

Delegates recognised that parallel developments are taking place, such as the university reform agenda, and were concerned to ensure that the overall outcome will be of benefit to all actors in addressing their specific objectives and motivations. The business community is well aware that universities make to major contributions to the effectiveness of modern societies and economic prosperity and wishes to see these contributions grow.

Achieving that wish involves acknowledging that the role of higher education institutions is changing. The pre-eminence of teaching, learning and research is increasingly being complemented by a new emphasis on knowledge transfer, social inclusion, local and regional regeneraton, and attention to the wider public debate. More significantly, this represents a deeper transformation in higher education from a supply-driven system to a demand-driven one.

Universities respond to the business community's messages by:

- Sustaining research excellence at the top level and state-of-the-art;
- Training successive generations of scientists and engineers who can work productively outside public research;
- Recognising that knowledge transfer has to become part of research excellence;
- Supporting development within the local community, including its SMEs;
- Supporting people's capacity to create and be creative; and
- Acting as long-term guardians of knowledge on behalf of society;
- Addressing the increasing importance of lifelong learning, in a world in which careers are no longer linear and professionals in all fields are likely to need substantial support to meet changing challenges.

Close, effective forms of collaboration serve to enhance research and knowledge exchange and support innovation. There is a strong desire to gain these benefits and avoid polarising the interests of universities against companies, by establishing working practices that make sense to all actors. A number of well-known barriers still exist but current concerns are quite pragmatic:

"It is still taking far too long to establish contracts with universities and get on with the work";

"We feel that companies have no real interest in establishing working relationships that treat our IPR equitably".

"Our prospective (private/public sector) partners simply do not understand why we need to work this way";

"There are many untapped opportunities for partnership and knowledge exchange. Often, the opportunities are simply not sufficiently visible, particularly on a cross-border basis."

"The point here is not the actual [State Aid] rules. When senior managers across European industry and public research need white papers and decision guidelines to apply the rules, they have lost their value as a tool for encouraging collaboration and knowledge transfer. They're just too complex to be effective, acting as a barrier for all but the most highly motivated."

The challenge in Europe is to establish conditions which lead to a virtuous cycle of productive collaboration and on a sufficient scale. There is frustration that competitor economies, such as the USA, India and China, seem to make more rapid progress, with only a limited "window of opportunity" foreseen for Europe to respond. Stereotypically, traditions of lengthy philosophical debate and too much central management hinder the emergence of the "can do" attitudes that are required to make progress in this important area.

Ways to achieve these empowered outcomes include:

- Increasing substantially the number of European-based universities, research organisations and companies which understand how to turn the (research and business) opportunities offered by Open Innovation to advantage in pursuit of their missions;
- Removing regulatory and other barriers, whereby opportunities for collaborative working will become more visible when this is the most appropriate and effective approach;
- Establishing environments (the "innovation ecologies") which reinforce constructive mindsets and provide balance between self-reliance, collaboration and competition and between mission-oriented approaches and frontier research; and
- Developing a sufficient supply of the high-quality supporting skills, management practices and attitudes needed to underpin beneficial collaboration among research actors.

Specific conclusions can be drawn from the conference findings in respect of these points.

6.2 Responsible Partnering

The Conference's recommendations for Responsible Partnering remain fully consistent with those reached in 2004. What has been learned since 2004 serves to emphasise these conclusions and illustrate where further improvements are possible.

Perhaps the greatest concern is common lack of awareness of Responsible Partnering and of the general and well-established learning that this and similar initiatives contain. Among the consequences are duplication of effort, slow progress and possible inconsistencies of approach. Delegates recommended a more active campaign to promote visibility and awareness among all research actors, aimed at achieving critical mass as soon as possible.

Delegates requested a revision of the Handbook for Responsible Partnering as follows:

- Incorporating human aspects more directly into the process and to extend the checklists in order to address these aspects: the need to recognise the broad range of expertise and "people skills" that make business-oriented as well as research-oriented collaborations work well;
- Emphasising the importance of communications between partners on expectations and assumptions made and on methods of building trust and understanding among potential partners;
- Improving consistency and thereby ensure greater comparability of the checklists for RTOs, universities and companies;
- Turning the checklists into genuine assessment tools by formulating clearer questions and statements; introducing scores; and by establishing criteria for being "Responsible Partner";
- Explaining technical issues such as the boundary conditions for allowable State aid and to give some examples of balanced IPR modules that adequately reflect partners' interests and contributions and therefore can be assessed as constituting no State aid.
- Continuing to develop the scheme so that Responsible Partnering does become widely recognised as a badge reflecting quality.

Additional tests should be run during this revision exercise to validate and ensure completeness of the new recommendations and checklists.

6.3 Research Actors

Europe's future depends on providing the conditions that attract good minds from within Europe and elsewhere to contribute to its success. These conditions include the possibility to carry out top quality research and to benefit from the findings of such research. The conference reconfirmed the importance of durable relationships between research actors, based on good support, management tools and metrics. The main recommendations concerned the need to move from words to action.

Steps that the research actors themselves can take include:

- Recognising that collaboration is a means to an end, usually in managing projects and usually not the main objective of these projects;
- Recognising also that the value of collaboration projects depends on the strategic commitment and organisation that enables and supports good project management;
- Establishing the effective internal procedures (such as Partner Relationship Management) to support the identification and handling of collaborations when this is the appropriate approach;
- Understanding how prospective and actual partners view you; being willing to compromise to achieve a better result; and providing adequate training and promoting the exchange of personnel in order that people know when and why they should compromise;
- Establishing explicit internal targets and key performance indicators;
- Recognising the potential value that a "badge" of Responsible Partnering (especially for SMEs) can bring in terms of gaining new customers.

Existing institutional management systems, and the mindsets that these systems instil, are proving adequate for the demands of diversified funding and the kind of transparency that diversified funding requires, so a new generation of management systems is required. The adoption of full-cost financial models is seen as a pre-requisite for the viability of effective, large-scale collaboration between universities and industry.

6.4 Public Authorities and Intermediary Organisations

For public authorities, the key requirements are to encourage the more rapid and widespread adoption of established good practices, to make the opportunities for fruitful partnership more visible, to enhance the creation of useful partnerships, and to avoid creating false polarisations of interests.

The value of intermediate bodies and agencies is generally seen in terms of their "facilitation" and "enabling" roles rather than as process managers.

Despite the concerns that are often expressed, there remains a strong role for governments and public authorities:

- The extensive discussion of State Aid Rules at this conference and similar events highlights the need for further dialogue with Member States (which are responsible for implementing the State Aid framework) and the European Commission (DG Competition, DG Research and DG Enterprise). The objective will be raise awareness of these rules and give guidance on how the rules can be applied in the context of sustainable collaboration.
- The metrics being used to assess trends in research and innovation are generally not well-equipped to deal with collaboration, either on a cross-border basis or within regional clusters. This shortcoming should be remedied.
- Responsible Partnering is still seen as a sound basis for government policy and guidelines. Governments and public authorities have the resources to enhance awareness of grass roots initiatives like this. We would like to see this happen.
- Better cross-sectoral mobility remains a priority, and public authorities should continue to support schemes that make this a normal part of the research career, particularly at doctoral and post-doctoral levels.

Further substantive work is required to establish how best to achieve these objectives. There is concern (for example) that the Commission-led IP Charter should clearly embody the principles of Responsible Partnering and support and encourage national Codes of Practice and national strategies that harmonise process and practice across frontiers; set standards and facilitate delivery; and provide clarity of responsibility. Nonetheless, it is possible that not all actors will agree on the diagnosis and the remedies,

even though by now a substantial body of experience exists on how to achieve the desired goals. We must build on this experience.

6.5 Actions for the Partner Associations

- Continue to give a high profile to the Responsible Partnering initiative, including by linking knowledge exchange with other guidelines such as on doctoral training, research and innovation management, and institutional reform;
- Continue to foster dialogue among different research actors;
- Revise and reissue the Handbook of Responsible Partnering;
- Investigate how to achieve the desired levels of awareness of Responsible Partnering and the principles it embodies;
- Investigate, with Member States and the European Commission, ways to address the concerns raised about State Aid Rules;
- Establish how best to support the development of the knowledge transfer profession (for instance through training and accreditation schemes); and
- Propose simplified principles for IP management in collaborative research in order to facilitate involvement of SMEs.

6.6 Review

Participants agreed to meet again (nominally in 2009) to review progress.

Appendices

Conference Preparation

Delegates were invited to consider these questions:

- How to encourage more universities, public research organisations and companies to view collaboration as being of strategic importance? What are the perceived barriers?

  For example: Collaboration is not seen to be of strategic importance because partners do not plan strategic engagement; Short term collaboration is the rule rather than medium to long-term engagement; The full range of activities available under Open Innovation is not addressed when considering collaboration; The potential benefits are not seen to be worth the investment of time and effort to develop the "softer" elements of building a long-term strategic relationship; Stakeholders wish to treat each case differently for maximum tactical benefit; or Actually, collaboration is less important than is being claimed

- Which are the most significant factors preventing these partners from taking full advantage of available opportunities?

  For example: Insufficiently visibility of these opportunities; Lack of good partners; Lack of professional skills to manage a complicated task; Inadequate financial incentives (state aid, tax treatments, etc); Inappropriate provisions for handling intellectual property

- What can be done to facilitate the identification of such opportunities and partners?

  For example: Signal adhesion to open innovation and responsible partnering guidelines ; University leadership should develop strategic policies to pool existing expertise and contacts in faculties and knowledge transfer offices faculties; Develop networks or databases, via (e.g.) the Innovation Relay Centres and other partnering networks; Implement easily accessible contact channels with knowledgeable professionals; Greater use of innovation consultants

- What can be done to develop the professional competence of the personnel involved in the interface?

  For example: Define professional standards common to public and private partners; Develop training programs; Develop certification schemes; Are there lessons to be learned from the UK's Institute of Knowledge Transfer which would improve development of professional capacity across Europe? If so which and how should these be adopted in the European context? Should universities that engage in collaborative research be rewarded by governments as they are in the UK and Ireland?

- How can the proposed European IP Charter facilitate the conclusion of partnerships with universities?

  For example: What should this Charter say and do in order to encourage useful adherence by your company/institution? Will adhesion to the Charter by another university/company increase your interest to negotiate a collaborative research agreement with it?

  What lessons have been learnt from the development and promotion of the European Researchers' Charter that can be built upon with the proposed IP Charter?

Conference Programme

Monday, 3 December 2007

Welcome & Introduction

Gilles Capart, Past Chairman, ProTon Europe, introduced the conference; and gave background into the Responsible Partnering and related initiatives, including the 2006 validation process.

State of Play: Where are We with Collaborative R&D? Chairs: Gillian McFadzean and Gülsün Sağlamer

Speakers: Jan van den Biesen (Philips); David Joyner (University of Bangor) and Oggy East (Semantise); Just Vlak (Wageningen University) and Lucas Noldus (Noldus BV); Tadeusz Luty (Wroclaw University of Technology); Christian van Ghelder (Octet Conseils); Pascal Iris (Armines); Paolo Onesti (University of Modena & Reggio Emilia); Robert Roze (Coventry University Enterprises Ltd) and Lubo Jankovic (Intesys); Nuno Silva (Instituto Pedro Nunes)

Dinner intervention by José Mariano Gago, Portuguese Minister for Science, Technology and Higher Education: "The Future of Science and Innovation in Europe - The Roles of Public Research, Industry and Governments".

Tuesday, 4 December 2007

Identifying Good Partners. Chair: Leopold Demiddeleer

Speakers: Olivier Peyret (Schlumberger); Thomas Baaken (Muenster); Bibiana Dantas (IRC); Adrian Duncan (TWI); Anders Holst (Copenmind)

Professional Accreditation. Chair: Pat Frain & Gülsün Sağlamer

Speakers: Gilles Capart (ProTon Europe); Ian Harrison (IKT); Peter Pawlek (Austria Wirtschaftsservice)

Public Policy Framework. Chair: Leopold Demiddeleer

Speakers: John Dooley (Forfas) and Pat Frain (University College Dublin); Jim Houlihan (UK IP Office); Gillian McFadzean (Heriot Watt); Denis Dambois (European Commission)

The Way Forward

Conference Delegates

André, Alain
Cicom
andre@cicom.fr

Baaken, Thomas
Muenster
thomas.baaken@t-online.de

Baines, Linda
STFC, IKT AURIL
l.baines@rl.ac.uk

Borrell-Damian, Lidia
Senior Programme Manager
European University Association
lidia.borrell-damian@eua.be

Boubekeur, Karima
Head of External R&D Policy
Hoffmann-La Roche
karima.boubekeur@roche.com

Brisson, Pierre
Université Technologique de Compiègne
pierre.brisson@utc.fr

Bruch, Christian
Manager Networking & Cooperation
SGL Carbon GmbH
Christian.Bruch@sglcarbon.de

Capart, Gilles
Chairman of the Board
PROTON Europe
g.capart@brucells.com

Collins, Luke
Journalist and Corporate Writer
luke@lukecollins.org

Conesa, Fernando
Universidad Politecnica de Valencia
fconesa@ctt.upv.es

Dambois, Denis
European Commission
denis.dambois@ec.europa.int

Daniel, Ana
University of Aveiro
anadaniel@ua.pt

Dantas, Bibiana
IRC Portugal
bdantas@adi.pt

Dargaud, Roland R.
International Development & Benchmarking
Renault s.a.s
roland.dargaud@renault.com

Dearing, Andrew
Secretary General

EIRMA
adearing@eirma.asso.fr

Demiddeleer, Léopold
Corporate R&D & NBD Director
Solvay
leopold.demiddeleer@solvay.com

Dooley, John
Dept Head, STI Policy for business
Forfas
john.dooley@forfas.ie

Duncan, Adrian
European Programme Co-ordinator
TWI Ltd.
adrian.duncan@twi.co.uk

East, Oggy
Semantise Ltd.
oggy@semantise.com

Espinasse, Pierre M.
University of Oxford
pierre.espinasse@admin.ox.ac.uk

Frain, Patrick
Nova UCD
pat.frain@ucd.ie

Gadani, Ferruccio F.
Director R&D
Philip Morris Products SA
ferruccio.gadani@pmintl.com

Gokmen, Muhittin
Istanbul Technical University
gokmen@itu.edu.tr

Graham, Philip
Executive Director
c/o Queen's University Belfast
p.graham@qub.ac.uk

Harrison, Ian
IKT
ian.b.harrison@btinternet.com

Haspeslagh, Luc
Délégué Scientifique
Total
luc.haspeslagh@total.com

Holst, Anders Kristoffer
VP Director of Concept
Copenmind ApS
akh@copenmind.com

Houlihan, Jim
UK Intellectual Property Office
jim.houlihan@ipo.gov.uk

Iris, Pascal
Directeur
Armines
pascal.iris@ensmp.fr

Jankovic, Lubo
Managing Director
Intesys Ltd.
l.jankovic@e-intesys.com

Jonsdottir, Johanna
Manager, R&D Planning
Haldor Topsoe
jhj@topsoe.dk

Joyner, David
University of Bangor
d.joyner@bangor.ac.uk

Kaiser, Lorenz
Director Legal Affairs and Contracts
Fraunhofer-Gersellschaft
lorenz.kaiser@zv.fraunhofer.de

Kallasvaara, Heikki
Director of Research Affairs
University of Helsinki
heikki.kallasvaara@helsinki.fi

Kocziszky, Gy
University of Miskolc
getintez@uni-miskolc.hu

Kosmider, Tomasz
President
Technology Partners Consortium
Kosmider@ibb.waw.pl

Kristensen, Stine Soe
VP Concept Management
Copenmind ApS
ssk@copenmind.com

Kuhlmann, Udo
Director Materials
Pirelli
udo.kuhlmann@pirelli.com

Laidler, Dale A.
Strategy Project Office
ICI
dale_laidler@ici.com

Langowski, Marek
Managing Director

Technology Partners Consortium
telemobile@telemobile.pl

Leandro, Antonio
BK
antonio.leandro@gmail.com

Luty, Tadeusz
Wroclaw University of Technology
tadeusz.luty@pwr.wroc.pl

McFadzean, Gillian
Heriot-Watt University
g.mcfadzean@hw.ac.uk

Moeschler, Frank
European Commission
frank_moeschler@msn.com

Nagy, Aladar
University of Miskolc
getintez@uni-miskolc.hu

Noldus, Lucas
Noldus BV
l.noldus@noldus.nl

O'Brien, Derek
Irish Research Council for Science,
dobrien@ircset.ie

Onesti, Paolo
University of Modena & Reggio Emilia
paolo.onesti@unimore.it

Pawlek, Peter
Project Manager
Austria Wirtschaftsservice
p.pawlek@awsg.at

Peyret, Olivier
Vice President University Collaborations
Schlumberger
peyret@slb.com

Pita, Antonio
Director International Liaison Office, Switzerland
Tecnologico de Monterrey
antonio.pita@itesm.mx

Potter, Stephen
Chairman European Acquisitions
Intellectual Ventures
stephen_potter@btinternet.com

Raposo, Mario
Universidade da Beira Interior
mraposo@ubi.pt

Redey, Akos
University of Szeged Hungary
aredey@deak.u-szeged.hu

Ross, Joanne
Biochemistry Group Leader
Philip Morris Products SA
joanne.ross@pmintl.com

Roy, Camille
Communications Manager
EIRMA
croy@eirma.asso.fr

Roze, Roberts
Coventry BIC
r.roze@coventry.ac.uk

Ruinaud, Karin
Office Management & Special Interest Groups
EIRMA
kruinaud@eirma.asso.fr

Saglamer, Gulsun
Istanbul Technical University
saglamer@itu.edu.tr

Schallnau, Judith
Lawyer
BMBF EU-Büro
judith.schallnau@dlr.de

Schofield, Monica
Head of European Office
TuTech Innovation GmbH
schofield@tutech.de

Silva, Nuno
Instituto Pedro Nunes
nsilva@ipn.pt

Smith, John
Deputy Secretary General
European University Association
john.smith@eua.be

Spinetto, Marco
Manager
Pirelli
marco.spinetto@pirelli.com

Torenstra, Reini
Managing Counsel
Shell
reini.vanleeuwen@shell.com

Tsaousidou, Despina
NTUA TTO
dtsa@central.ntua.gr

Unzalu, Heiko
International Affairs
Technology Centre Aimen
hunzalu@aimen.es

van de Vel, An
Manager Scientific Relations
Umicore Research
an.vandevel@umicore.com

van den Biesen, Jan
Vice President, Director Public R&D Programmes
Philips
jan.van.den.biesen@philips.com

van Wermeskerken, Stephanie
Principal IP Counsel
Philips
Stephanie.van.Wermeskerken@philips.com

Vlak, Just
Wageningen University
just.vlak@wur.nl

Weber, Klaus
Advisor
BMBF
klaus.weber@bmbf.bund.de

Zeestraten, Albert
General Patents and Licensing Attorney
Shell
albert.zeestraten@shell.com