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DRAFT

Report on the outcomes of the:

"Public consultation on transnational research cooperation and knowledge transfer between public research organisations and industry"

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1. EXECUTIVE SUMMARY

This document summarises the outcomes of the online public consultation conducted by the RESEARCH DG from 12 May to 31 July 2006 during which 199 responses were received.

The consultation results clearly show that the exploitation of publicly funded research results is deemed to be an important driver for EU competitiveness. It also highlighted a number of key issues that should be addressed if closer PRO-industry links are to be achieved:

- The alignment of interests between a PRO and a private firm within a given Member State is not always straightforward due to the different agendas and expertise which the parties have – this is particularly evident when valuing the IPR resulting from research and the distribution of any financial rewards;
- Transnational collaboration is additionally hampered by three main factors: cultural differences (including language); legal differences; and, difficulties in finding partners. Transnational collaboration which is not part of a long-term, structural alliance is therefore relatively unattractive for both the public and private sector due to the added complexities which such collaboration brings with it;
- Technology transfer officers should have some form of accreditation / qualification, though this should not be mandatory and should recognize their staffs' diverse backgrounds;
- PROs find it difficult to balance their researchers' desire for open access to research results with the need to protect them if they are to become commercially viable products.
- Although not the sole factor, the differences between existing legal frameworks has a strong disincentive effect on transnational collaboration. Furthermore, all of the legal issues identified by the Commission (see Q15) are deemed to be problematic for a significant percentage of respondents (between 23% and 53%). The main research-related barriers are the differences in IPR ownership regimes (53% of votes) and joint ownership (43%).
- Most respondents considered that some form of harmonized legislative action is required - 93 respondents asked for either European or National action¹ whereas only 36 were against any form of action. A large proportion of the responses considered that urgent action should be taken in the field of IPR – particularly regarding the delivery of a Community Patent (reflecting the responses received in the Patent Strategy² and Internal Market strategy³ consultations).
- Most respondents would like to see Public Authorities make additional funding for knowledge transfer activities available. Furthermore, the creation of voluntary guidelines for knowledge transfer was supported by a large percentage of respondents.
- The consultation was inconclusive regarding the question of whether a European version of the "Bayh-Dole Act" should be developed.

¹ National action on the basis of voluntary Community recommendations.

² http://ec.europa.eu/internal_market/indprop/patent/hearing_en.htm

³ TBA

2. FACTS AND FIGURES

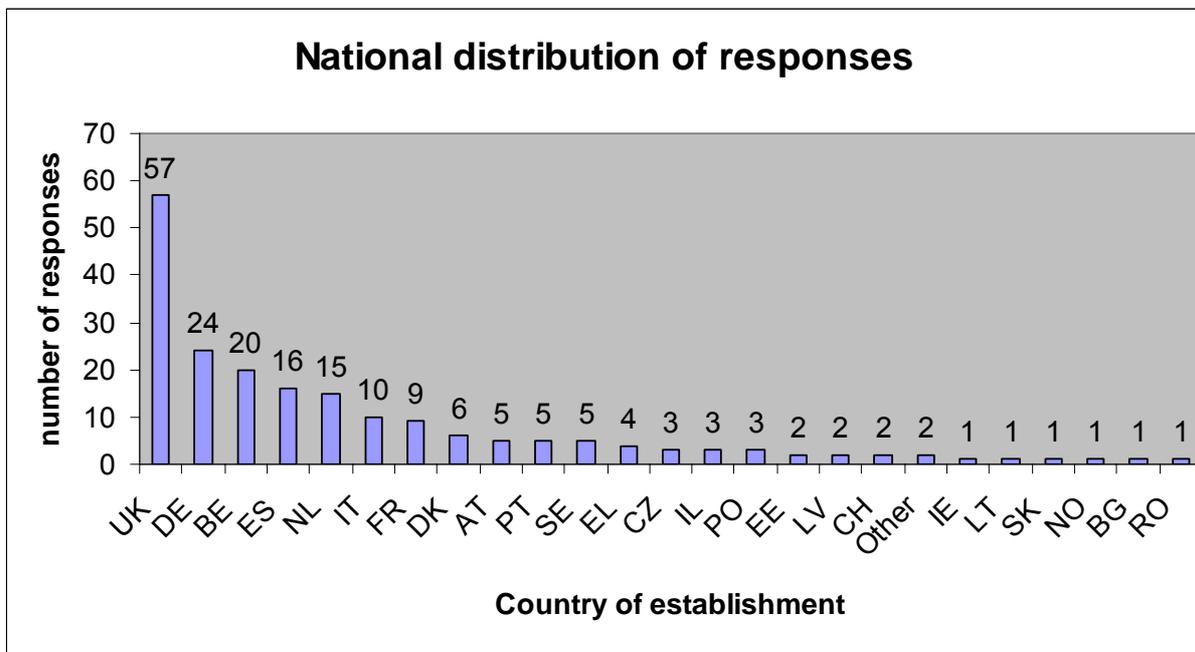
It is important to note that the only mandatory questions in the consultation were those relating to the organisation's country of establishment, email address, type of organisation, name of the organisation and whether confidentiality was requested.

The number of responses for each question is therefore mentioned under each heading.

2.1. National distribution of responses

(199 responses)

By the 1st August, 195 replies had been received and 4 more were received shortly afterwards. A large proportion of responses came from the UK (29%), Germany (12%), Belgium (10%), Spain + Netherlands (8%). Only 2 were from outside of Europe (1 from Canada and 1 from the USA).

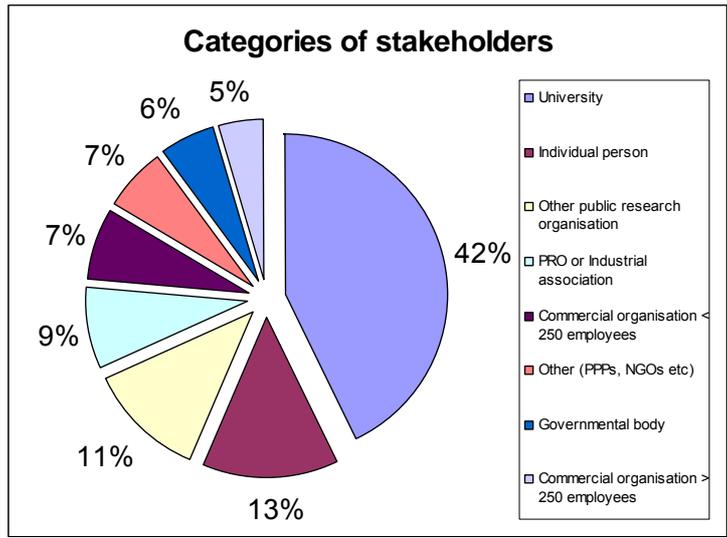


2.2. Categories of stakeholders

(199 responses)

Responses were received from a broad cross-section of stakeholders – from individual researchers to large industry associations, as well as some Governmental bodies.

A large fraction of the replies were from universities (85) and other public research organisations (23). A further 23 responses were received from companies (14 SMEs and 9 large companies); 17 from PRO or Industry associations; and, 10 from Governmental bodies (mainly from funding agencies or regional development agencies).



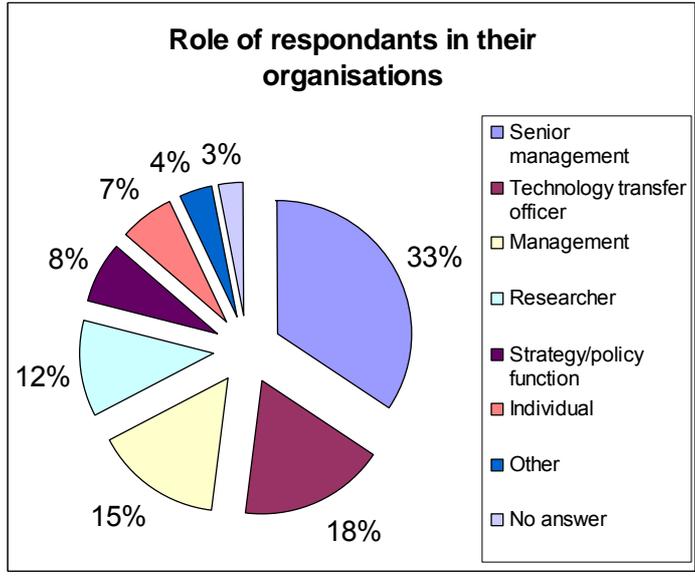
A list of respondents can be found in Annex I.

2.3. Role in the organisation

(192 responses)

15 respondents ticked more than one category. For the purposes of analysis, it was decided that only the most senior role would be selected out of the functions described.

Using this methodology, 68 respondents were in senior management, 35 Technology transfer officers, 30 management, and 15 strategy/policy function. The remaining 43 responses were spread across the remaining categories.



3. ANALYSIS OF THE REPLIES TO THE PUBLIC CONSULTATION

3.1. Section 1: Facilitating cooperation between industry and public research organisations

Q1: How important a driver is the exploitation of publicly-funded research results for EU competitiveness ?

(197 responses)

139 responses (71%) considered this feature to be “very important” and a further 56 respondents consider it “quite important”. Only 2 responses – both from individuals - stated that it was irrelevant.

Q2: Should more emphasis be placed on the exploitation of publicly-funded R&D results within PROs ? Why?

(195 responses)

136 responses (70%) considered that "much more" emphasis should be placed on exploitation, with a further 52 (27%) considering that "slightly more" emphasis is needed. 2 respondents (an SME and a university) asked for less emphasis. Interestingly, one PRO/industry association and 4 individuals and called for "no emphasis" to be placed on such activities.

The arguments for much more emphasis revolve around the lack of importance given to exploitation by many PROs. As one respondent put it:

"A fast deployment of research outcomes is essential for the revival of the European knowledge economy. Economic development depends to a large extent on the ability of businesses to exploit R&D and to convert the research results into innovative and valuable products, services and processes. Europe has difficulties in doing so, and this problem must be addressed in a global way"

From a PRO association

However, those responses calling for less/no emphasis felt that PROs were becoming overly entrepreneurial, often without the necessary skills, making interaction more difficult:

"Basic science is a long term endeavour vital to sustain innovation. Industry requires short term return. Public funding for basic research shall not be funnelled to subsidize R&D for money making companies."

From a researcher

"...PROs should in an early stage approach industry and discuss the best way of valorising their R&D results to the benefit of Europe's competitiveness, economy and society. Depending on the case, this may even imply that patenting of a PRO's R&D results is best left to a company participating to the funding of the research - of course against a fair compensation to the PRO - as a company is often better equipped to judge market potential and has more adequate resources for applying for, maintaining and defending IPR."

Therefore, PROs should place more emphasis on the EXPLOITABILITY of their R&D results, rather than on EXPLOITATION itself..."

From an industrial association

It is also interesting to note the emphasis given to the role of National administrations and their policies in this context:

"...The primary driver should NOT be a belief that significant funding can be generated by individual institutions either to add to their wealth or to reduce the need for future public funding... ..However, it is reasonable to expect Institutions and individuals within Institutions to benefit where exploitation brings with it significant financial benefits for the commercial party. Nor should the drivers be artificially weighted by political influences that wish to see exploitation occur exclusively via company creation or through (say) SMEs. New ideas should be professionally assessed for their exploitation potential and the appropriate exploitation strategy adopted that ensures as wide and as effective exploitation into the market as practicable...."

From a PRO

Q3: In your experience, how easy or difficult is it to align interests between a PRO and an industrial partner within the same country ? Why?
(191 responses)

14 respondents concluded that such alignment is very difficult, and 129 that it was difficult.

However, only 26% of responses said that alignment was easy (43 responses) or "very easy" (5 responses). Interestingly, a large portion of answers stating that alignment was easy came from universities (20).

The respondents who found interaction difficult often focussed on the different cultures which exist between our PROs and industry, which gives rise to difficulties in aligning interests :

"Poor understanding of the constraints and missions of the other party, different mind set and attitudes, sometimes conflicts of interest. The under-funded universities are often in a poor bargaining position to achieve an equitable deal. The interests of the investigators are not necessarily the same as those of his organization. The performance of universities in project management needs improvement. There is a lack of professionalism in dealing with the interaction (on both sides)."

From a PRO association

Several respondents also highlighted that such interactions vary significantly from Member State to Member State and between types of contract / research.

The respondents who found interaction easy highlighted that within a given Member State the same language is used and there tend to be fewer bureaucratic hurdles – making it possible to use model agreements more easily.

Q4: In your experience, how easy or difficult is it to align interests between a PRO and an industrial partner which are based in different countries ? Why? (184 responses)

For this question, 50 respondents (27%) found transnational alignment “very difficult”; 102 found it “difficult” (55%) and 32 found it “easy” (17%). No respondents found such collaboration very easy.

Almost all respondents mentioned that the same problems existed at transnational level as at national level. However, they also highlighted other factors which made transnational cooperation more difficult. The most quoted issues include:

- differences in language and culture, including academic versus industrial language and negotiation styles (45 responses – 25%);
- differences in legislation, including IPR and tax issues (35 responses – 19%); and
- logistic difficulties in partner finding, communication and travel expenses (27 responses – 15%).

It is interesting to note some proposed solutions to this problem by the stakeholders:

"It might be easier, if the cooperation with research facilities is standardized to a certain extend, so less effort has to be spent for formalities."

From a Commercial organisation (<250 employees)

"...if a clear structure can be promoted in Europe via e.g. universities and industrial partners with similar strategic initiatives, the mobility (researchers as well as industrial members) will increase. One program of specific interest is the Support Action Program for trans-national access funded by the European Commission."

From a Commercial organisation (<250 employees)

"EU should fund research internships of industrial staff from SMEs in PROs, similar to what the German Alexander-von-Humboldt-Stiftung offers to international researchers. This will contribute to the development of trust between the partners."

From a PRO association

"...for SMEs the task of locating the right individuals and meeting with them is harder and more expensive. Clearly, initiatives such as the Innovation Relay Centres should help - but where so much information is tacit and interactions iterative; there is no substitute for people meeting. "

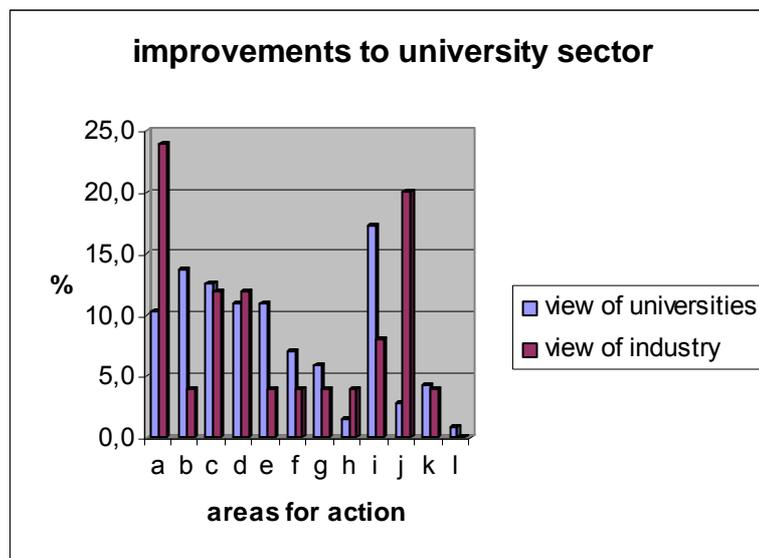
From a PRO

Q5: What are the key elements that should be improved within Universities in order to facilitate their cooperation with industry within the same country? (193 responses⁴)

79 votes	<i>a) Exchange of researchers between universities and industry</i>
74 votes	<i>b) Clear university strategies and rules relating to research cooperation with industry</i>
66 votes	<i>c) Recognition of the value of long-term cooperation with industry, by universities management</i>
67 votes	<i>d) Greater understanding by researchers of the needs of industry</i>
47 votes	<i>e) Improved financial resources for technology transfer offices</i>
40 votes	<i>f) Access to professional Technology Transfer officers (or similar staff)</i>
29 votes	<i>g) Greater understanding by researchers of IPR and its implications</i>
13 votes	<i>h) Better management of IPR produced by researchers</i>
85 votes	<i>i) Integrate "innovation-related" criteria in the appraisal of researcher careers</i>
28 votes	<i>j) Realistic expectations by universities regarding the valuation of research results</i>
27 votes	<i>k) Financial incentives for staff which create inventions</i>
11 votes	<i>l) other (pl. specify)</i>

Respondents who ticked the "other" category (l) mentioned: the need for financial compensation to the university for the use of the university inventions by industry; the need to recruit industrialists into funding bodies; the need to recall that standardization may open markets for innovative technologies; the need to promote innovative initiatives (which are often limited by administrative burdens); and the need for universities to stop seeing industry solely as a source of funding.

It is particularly interesting to compare university and industry views on this theme since the question relates to these sectors specifically.



It is clear from this graph that universities and industry have different perceptions of what universities should focus on if effective collaboration to take place.

Universities consider factors "i" (Integration of "innovation-related" criteria in appraisals - 44 votes), "b" (clear university strategies - 35 votes) and "c" (recognition

⁴ Most respondents (168) ticked 3 boxes, though 19 ticked fewer (8 ticked 2 boxes and 5 ticked one box) and 3 ticked more than 3. For the purpose of analysis, those each tick was deemed to be worth a single vote and no weighting was introduced. Furthermore, the data from small firms and large firms was consolidated into a single category described as "industry".

of the value of long-term cooperation - 32 votes) to be crucial factors, whereas industry considers factors "a" (staff exchange - 24 votes), "j" (realistic expectations - 20 votes) and "c + d" (greater understanding of the needs of industry - 12 votes) to be the key factors.

The two parties generally agree that university senior management must recognize the importance of long-term research cooperation and that researchers should understand the needs of industry more.

However, they disagree on the importance that should be given to exchanges of staff (14 % difference), the importance of rules and strategies regarding such cooperation (10 % difference) and the need for universities to have realistic expectations regarding the valuation of their research results (17 % difference).

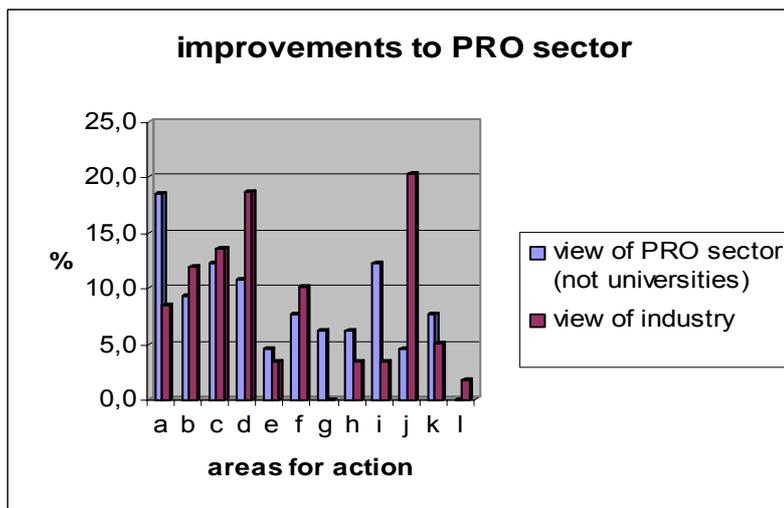
**Q6: What are the key elements that should be improved within other PROs (not universities, etc.) in order to facilitate their cooperation with industry within the same country ?
(162 responses⁵)**

59 votes	<i>a) Exchange of researchers between PROs and industry</i>
61 votes	<i>b) Clear PRO strategies and rules relating to research cooperation with industry</i>
49 votes	<i>c) Recognition of the value of long-term cooperation with industry, by PRO management</i>
62 votes	<i>d) Greater understanding by researchers of the needs of industry (especially those of SMEs)</i>
32 votes	<i>e) Improved financial resources for technology transfer offices</i>
40 votes	<i>f) Access to professional Technology Transfer officers (or similar staff)</i>
16 votes	<i>g) Greater understanding by researchers of the IPR and its implications</i>
17 votes	<i>h) Better management of IPR produced by researchers (e.g. use of laboratory notebooks, etc.)</i>
50 votes	<i>i) Integrate "innovation-related" criteria in the appraisal of researcher</i>
34 votes	<i>j) Realistic expectations by universities regarding the valuation of research results</i>
29 votes	<i>k) Financial incentives for staff which create inventions</i>
12 votes	<i>l) other (pl specify)</i>

The "other" factors (l) highlighted include : PROs need to break from Civil Service culture; the need for incentives for staff; the need for financial compensation by industry for their use of PRO results; the need to recruit industrialists into the funding bodies; the need to recall that standardization may open markets for innovative technologies; the need to promote innovative initiatives (which are often limited by administrative burdens; and the need for PROs to stop seeing industry solely as a source of funding.

⁵ Most respondents (140) ticked 3 boxes, though 19 ticked fewer (16 ticked 2 boxes and 5 ticked one box) and one ticked more (6 boxes). As before, each tick was deemed to be worth a single vote and no weighting was introduced. Furthermore, the data from small firms and large firms was consolidated into a single category described as "industry".

Again, we compared the responses from the "other PRO" and industry sectors:



It is clear from this graph that the "other PROs" and industry also have different perceptions of what "other PROs" should focus on if effective collaboration to take place.

Other PROs consider factors "a" (exchange of staff - 12 votes), "c" (recognition of the value of long-term cooperation - 8 votes) and "i" (integration of innovation-related criteria in appraisals - 8 votes) to be crucial factors, whereas industry considers factors "j" (realistic expectations - 12 votes), "d" (greater understanding of the needs of industry - 11 votes) and "c" (8 votes) to be the key factors.

Similarly to universities, the two parties generally agree that PRO management must recognize the importance of long-term research cooperation. However, they disagree on the importance that should be given to exchanges of staff (10 % difference), the importance of incentives for researchers (9 % difference) and the need for PROs to have realistic expectations regarding the valuation of their research results (15 % difference).

Interestingly, the importance of category "d" ie "Greater understanding by researchers of the needs of industry (especially those of SMEs)" is due to its recognition by all sectors of this factor rather than any one single group (on average, each sector gave it 5-10% of it's votes).

Q7: For questions 5 and 6, do the same choices apply when considering cooperation and knowledge transfer across national borders ? If No, please indicate the three factors which you believe are the most relevant in the box below.

(183 responses)

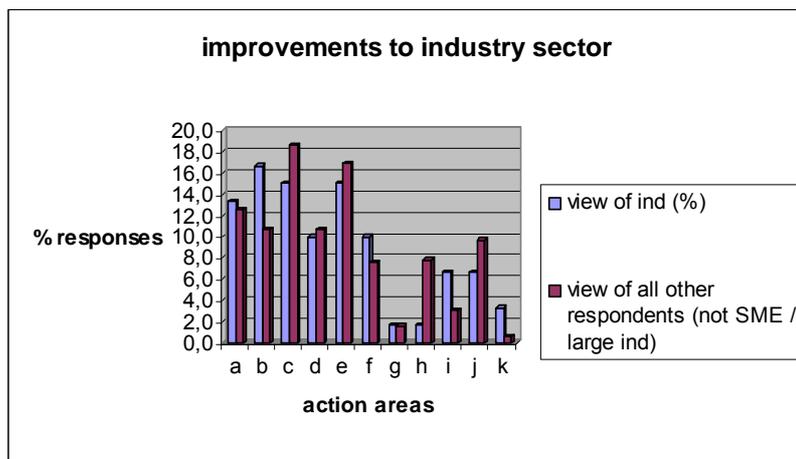
169 respondents answered that "yes" the same choices apply. For the 14 who replied "no", the reasons given included: language barriers; different types of law; different types of funding regimes; strategy and cultural factors.

Q8: What are the key elements that should be improved within companies in order to facilitate cooperation with PROs within the same country ?
(188 responses⁶)

69 votes	a) Exchange of researchers between companies and PROs
62 votes	b) Clear company strategies and rules relating to research cooperation with PRO
99 votes	c) Recognition of value of long-term cooperation with PROs, by company management
58 votes	d) Greater understanding by companies of the specific needs of PROs (e.g. to publish)
91 votes	e) Increased collaborative research funding (i.e. for joint PRO-industry projects)
43 votes	f) For SMEs, access to professional advice/assistance during negotiations
9 votes	g) Greater understanding by industrial researchers of Intellectual Property Rights (IPR)
39 votes	h) Recognition that IF the PRO cooperation results in a product which exceeds expectations, the PRO partner may need to be compensated further in order for the cooperation to be seen as being equitable by all parties.
19 votes	i) Financial incentives for staff which create inventions
51 votes	j) Recognition that ownership of IPR doesn't need to lie with the industrial partner in all cases
5 votes	k) other (pl. specify)

The "other" factors (k) highlighted include the fact that industry should see researchers participation as a key means to help in the analysis of results and as part of the researcher's industrial education.

For this category, we compared the responses from the industry sectors and all other sectors (excluding small and large firm data):



It is clear from this graph that the industry and other stakeholders tend to agree regarding what industry should focus on if effective collaboration to take place.

Industry considers factors "b" (clear company strategies - 10 votes i.e. 17%), "c" (recognition of the value of long-term cooperation - 9 votes i.e. 15%) and "e" (increased collaborative research funding 9 votes i.e. 15%) to be crucial factors, whereas other stakeholders considers factors "c" (90 votes i.e. 19%), "e" (82 votes i.e. 17%) and "a" (staff exchanges - 60 votes i.e. 12%) to be the key factors.

⁶ Most respondents (175) ticked 3 boxes, though 19 ticked fewer (11 ticked 2 boxes and 2 ticked one box) and one ticked 4 boxes. As before, each tick was deemed to be worth a single vote and no weighting was introduced. Furthermore, the data from small firms and large firms was consolidated into a single category described as "industry".

The two parties agree that company management need to recognize the value of long-term cooperation with PROs more and that there is a need for increased collaborative research funding (i.e. for joint PRO-industry projects).

Although not in the top 3, other stakeholders also believe that point "b" company strategies and rules relating to collaboration with PROs is important (11% of the votes). Similarly, industry feels that staff exchanges are important (13 % of the votes).

One of the few areas where the industry and other stakeholder views differ relates to point h – whereby if the cooperation results in a product which exceeds expectations, industry should compensate PROs more. 38 respondents – including 25 universities and 5 other PROs agreed with this point, whilst only one SME and no large firm supported it.

Q9: Do the same choices as in Q8 above apply when considering cooperation and knowledge transfer across national borders ? If No, please indicate the three factors which you believe are the most relevant in the box below.
(184 responses)

175 respondents claimed that the same choices apply nationally and transnationally.

For the 9 who replied "no", the reasons given included: language barriers; different types of law; different types of funding regimes; strategy and cultural factors.

Q10: Should a professional qualification be developed for technology transfer officers ? If No, why not?
(183 responses)

There were 138 positive replies and 45 negative ones. The negative responses gave the following reasons for their decision:

- Technology transfer must be part of the business. Having it as a "speciality" may risk to keep it outside the core business.
- If the job description is vague, it'll add another layer of bureaucracy
- A course already exists (in the UK).
- This approach was considered to be offputting in the US and resulted in fewer not more competent KT practitioners.
- TTOs need a broad spectra of competences based on the requirements of the specific University. Therefore it is impossible to have a single professional qualification.
- Other skills & experience can outweigh such a qualification including business experience & potentially a legal qualification.
- Diversity of backgrounds (lawyers, scientists etc...) should remain, but complementary training should be offered (not necessarily a degree).
- It would be better to have very experienced, commercially minded, industrially focussed people transferred into universities, than to try and train/qualify people. It is about experience, mindset and attitude
- Often the person negotiating the consortium agreements/contracts are research support contract managers who have legal training.

That said, the aforementioned issues are the views of a minority of stakeholders (about 25% of respondents) and the great majority (75%) feel that a professional qualification should be introduced.

Q11: How important is Member States' role in encouraging PROs to adopt internal guidelines regarding links with industry (e.g. a charter or code of practice for PRO-industry collaboration) ?

(192 responses)

67 respondents (35%) claimed that the role of Member States in encouraging PROs to adopt internal guidelines is very important, with a further 77 (40%) considering it quite important. Therefore a large majority of respondents believe that Member States have a role in encouraging PROs to adopt internal guidelines regarding links with industry.

On the other hand, 38 respondents (20%) claimed that it was not important and 9 (5%) that Member States role was irrelevant.

Amongst those answering that the role of Member States was irrelevant, it should be noted that this included two industrial associations (one representing large companies and the other SMEs).

Q12: How important an issue do you consider the balance between protection of research results (e.g. through patenting, etc.) and open access to research results for the public good to be ?

(193 responses)

86 respondents found this to be a very important issue (44%) and a further 79 (41%) thought it was quite important. Therefore, the large majority of respondents (85%) feel that the balance between protection and open access of research results is an important issue.

Only 21 respondents described the balance as not important and 7 as irrelevant.

The responses were similar for all sorts of organisations and for all countries of origin.

Q13: Should guidelines be developed to address the issue raised in the previous question ? If Yes, please specify what issues these guidelines should cover.

(184 responses)

108 respondents answered that guidelines should be created, whilst 76 replied negatively.

For respondents who answered "yes", comments were invited regarding what the scope of the guidelines should be. The answers included the following points – the guidelines should:

- **address broad principles only.** In essence these should be to further the general course of public knowledge but to protect specific commercial value.
- **allow for national differences** but give some model wording

- **explain the other side's perspective** and suggest to how to reach a compromise
- **focus on IPR and knowledge transfer** - the strategy for return of IPR which is not used, criteria for appointing benefits and costs, incentive mechanisms, publication protocols, etc
- **explain that patenting and protection does not prevent access through publication** – nor should it. Guidelines should make it clear that publicly funded research should be published with minimal delay to allow for protection (eg 60 days – 6 months).
- **explain what types of research results should be made available through open access and give a sectoral approach to the question** - different sectors of technology/industry require different IPR approaches. As a consequence, if any guidelines were to be established, they should not prescribe specific approaches, licensing models or other solutions, but rather point out which issues need to be addressed and what the possible approaches/solutions are.

Other issues raised included: the high costs of patenting in Europe; the need for a grace period, the need for mutual recognition of national patents, that patenting of research tools and techniques should be prohibited; and the need for more clearly enforcing the prohibition of patents on software.

Furthermore, some existing guidance was also highlighted in the responses - the 2004 EICTA Interoperability White Paper⁷, the Handbook on Responsible Partnering⁸ and the guide for researchers on how to deal with diffusion of results using EU standards⁹.

⁷ www.eicta.org/files/Interoperability-141710A.pdf

⁸ www.responsible-partnering.org/

⁹ www.cenorm.be

3.2. Section 2: Legislative issues affecting, in particular, PRO-Industry cooperation

One of the major barriers for trans-national R&D cooperation and knowledge transfer in Europe is the differences in legislation relating to research performed by public research organisations in EU Member States (e.g. legislation relating to the ownership and access to publicly-funded R&D results). There is also a need for an efficient trade-off between property rights management and the protecting knowledge as a public good.

Q14: How important do you consider this barrier to be ? PI specify why.
(187 responses)

50 respondents felt that barriers linked to legislative issues were "very important" and a further 98 that they are "quite important". Therefore 79% of respondents consider this to be important. 30 considered them to be "not important" and a further 9 to be irrelevant.

The responses to the request for comments can be divided into two broad categories:

a) The majority support a harmonized approach – a typical quote includes "*Make the legislation the same in every country without any exceptions. If not much cooperation will be doomed*"

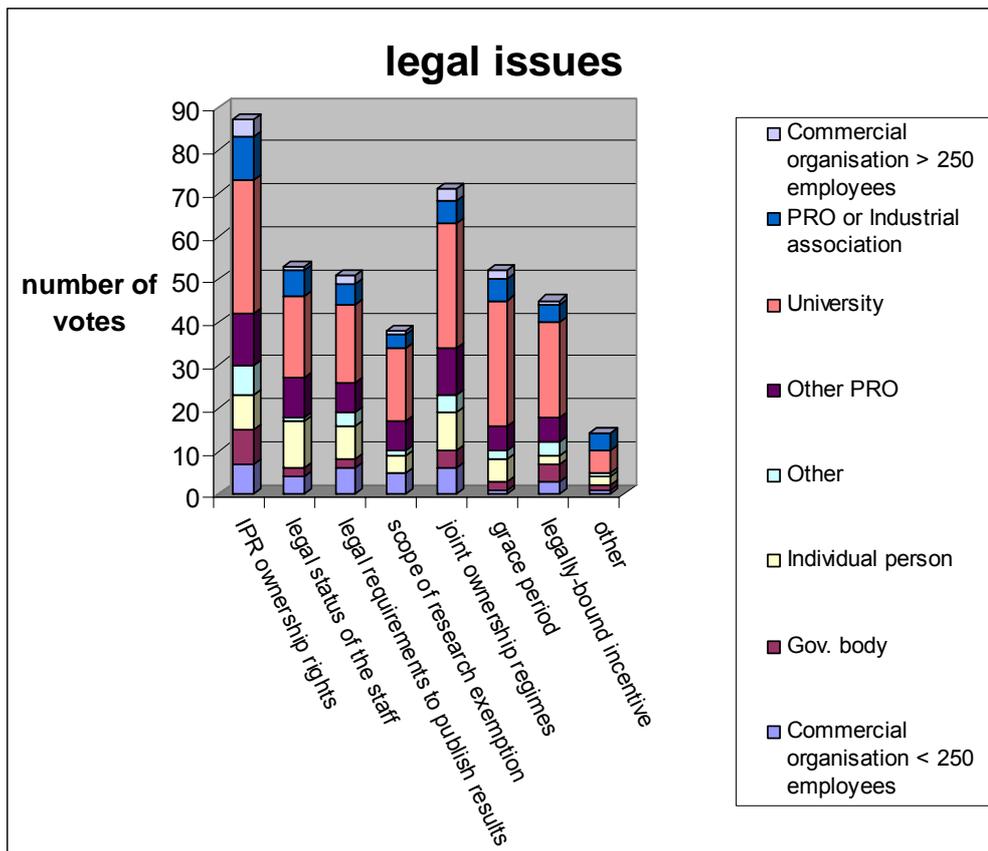
b) A minority who acknowledge that a barrier exists, but don't feel that it is significant enough to be a make or break issue. A typical quote is: "*This is not such a big problem. The key is that the individual organisations have a key policy and expectations on return revenue by the PRO are realistic.*"

Q15: When collaborating transnationally (within the EU), which of the following legal issues are deemed to be the most important ? PI. provide supporting evidence.
(158 responses¹⁰)

Questions relating to IPR ownership and joint ownership were deemed to be the most problematic issues affecting transnational collaboration with about 50% of respondents highlighting these issues.

Other issues raised include differences in public accounting rules; governing law; lack of mobility due to deficient harmonisation of social security, fiscal and social protection issues; and, interpretation of State Aid rules.

¹⁰ There was no limit to number of boxes which could be selected.



Although evidence was requested, very little was received. The key problems encountered related to differences in legal status and IP ownership regimes. The following excerpts (all from PROs) however, clearly define some of the problems which are encountered:

"Difference in legal status of staff often leads to problems over ownership of IP. For example, students are not employees in UK and therefore own their own IP that might be generated. Some universities require students to assign their IP to the university, others do not. Similar situations arise with visiting researchers. If invention is with a member of staff then joint ownership becomes an issue. This can complicate the Technology transfer process as well as contractual issues in research agreements. Variation in incentive systems also gives rise to variable motivation between co-inventors in different institutions and can lead to tension if one party is seen to be receiving significant benefit due to the local rules that apply."

"...In some European countries, Sweden included, there are limits for how a co-owner can dispose over jointly owned results without first obtaining the other co-owner/s/ consent. In the countries where a co-owner have a more extensive right to dispose over the jointly owned result, this difference creates barriers when trying to agree on terms of jointly owned results... The fact that Swedish researchers under law own their own results, creates a whole different incentive-mechanism than for researchers who do not own their own results. This considerable difference obviously creates very different terms and incentives for conducting research, which can be a problem when collaborating transnationally."

"It is unclear to many companies who owns IPR in different organisations whilst in companies it tends to be one size fits all. This can lead to a view of individual researchers being able to make decisions which may not be the case. This can be further complicated within organisations with students - given that their ownership rights also vary. In order to negotiate it needs to be quite clear who can be negotiated with and what they can negotiate. This issue is complicated by researchers usually being given the right to transfer copyright to publishers which requires specific terms to be created separating different IPR positions. In a large consortium with different IP ownership regimes it can become complex. The need for a grace period is dealt with above. But in simple terms we want the broadest possible disclosure of knowledge but at the same time must recognise that commercial developments require protection in order to warrant investment. With much research it is exceptionally early and it is only by disclosing it to the market place is the possible commercial opportunity recognised. We need to enhance technology abased discussions"

"If ownership on IP is of professors, it is very difficult to negotiate any agreement involving large research groups (too many negotiations). In EUREKA or future JTI programs, which require national funding, legal requirements concerning the property of results generated with public funding could create asymmetry among countries."

Q16: Do you believe that any of the issues mentioned in the previous Sections should be addressed by legislation at EU-level ? (e.g. through new regulations); If yes, pl specify which and why.

(192 responses)

This question tried to identify whether there is a need for the Commission to develop new EC legislative proposals (e.g. a regulation or a directive) in any of the problem areas identified in the question above.

A small majority of respondents (102 i.e. 53%) believe that no legislative measures should be taken at EU-level. However, a significant proportion of respondents (90 i.e. 47%) are in favour of the introduction of such measures.

23 of the 55 comments received were broad statements – for example *"All of them. We need a common framework to work within. All aspects should be covered as well as preserving local (national) space for development of country-level policies"*.

From a PRO

However, many of the comments received (34 of the 56) highlighted the importance of harmonized patent law and called for the ratification of EPLA, the London Protocol, the grace period and the Community patent. Furthermore, 8 respondents specifically mentioned the need to harmonize rules for joint ownership and ownership of publicly funded research.

Q17: Do you believe that any of the issues mentioned in the previous sections should be addressed by legislation at national level on the basis of voluntary Community recommendations ? If so, which and why?
(189 responses)

This question tried to identify whether there is a need for the Commission to identify good legislative practices, etc. (to address the problems identified in question 15) which can be taken up on a voluntary basis by Member States to develop national legislation.

Respondents were almost equally divided between those in favour (94 responses) and those against such a proposal (95 responses).

Most of the comments received (8 out of 14) focussed on the need for voluntary community recommendations regarding the appraisal criteria for researchers (to take into account innovation-related activities) and standard incentive structures for PRO staff. However, the need to align the ownership of publicly funded results and to make PROs more independent (both in terms of setting salaries and the status of their staff) were also mentioned.

Q18: Do you believe that any of the issues mentioned in the previous sections should be addressed by national rules or other measures (e.g. funding) on the basis of voluntary Community recommendations ? If so, which and why?
(173 responses)

This question tried to identify whether there is a need for the Commission to identify good funding rule practices, etc. (to address the problems identified in question 15) which can be taken up on a voluntary basis by Member States or other public authorities to develop national measures other than legislation.

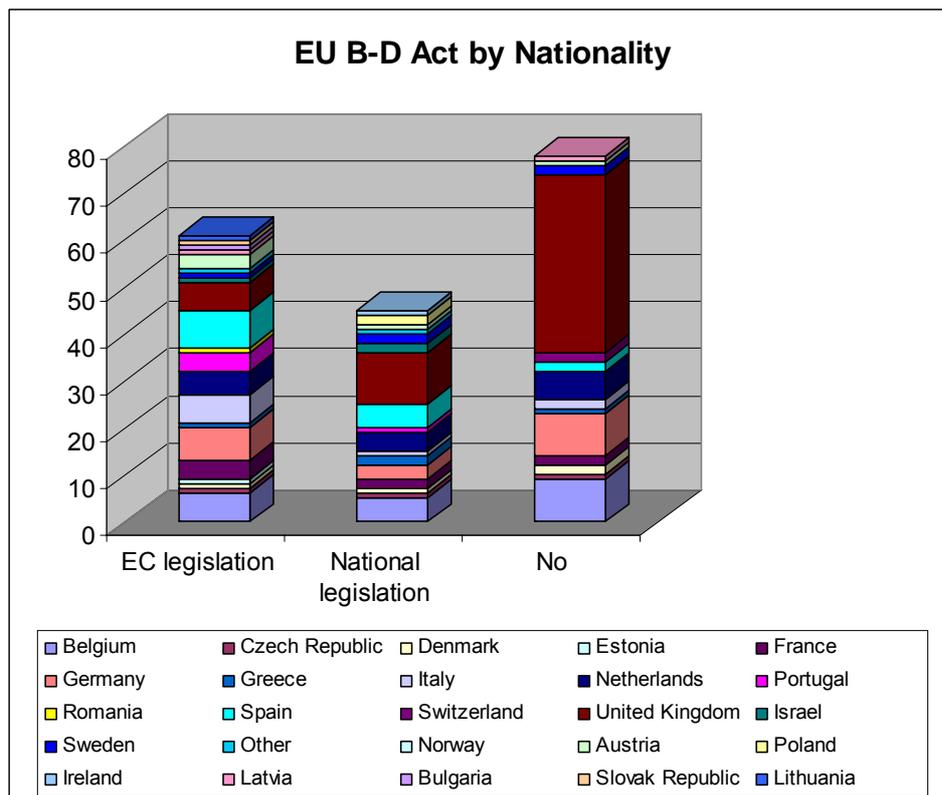
107 respondents answered “yes” and 66 “no” to this question.

Most respondents who answered "yes" and provided comments argued for additional funding for knowledge transfer activities. Furthermore, the idea of voluntary guidelines for knowledge transfer (including best practices on how to align interests between PROs and industry) were supported.

Q19: Do you believe that legislation should be introduced requiring PROs to exploit their research results ? (i.e. legislation with an objective similar to that of the Bayh-Dole Act in the USA)
(184 responses)

Many respondents provided a negative answer (78). Amongst those responding positively, there was a preference for EC legislation (63) over national (43) legislation.

There were few sectoral differences, with most categories having little or no preference regarding the issue. That said, it is interesting to note that about half of the negative replies (38) came from UK-based organisations.



Some interesting anomalies were noted when analysing the responses:

- 16 respondents were not in favour of any EC legislation in connection with Q16 (legal measures to promote transnational collaborations) but nevertheless supported the introduction of EC legislation in connection with Q19 (requiring PROs to exploit their research results) ;
- 45 respondents were in favour EC legislation for both Q16 and Q19 ;
- 16 respondents supported the introduction of national legislation in connection with Q19 yet had answered negatively to the introduction of national legislation in connection with Q17;
- 27 respondents were in favour national legislation for both Q17 and Q19.

Q20: Do you have comments on any other aspects which are not covered in the above questions and which you consider to be important? (23 responses)

This question allowed respondents to highlight other related areas of concern which the Consultation had not covered.

The lack of financial infrastructure to help finance the exploitation of results (e.g. access to Venture Capital funds) and of sufficient incentives to undertake exploitation activities (e.g. career progression for scientists) were mentioned by 12 respondents. The other main issues raised include the lack of professional technology transfer officers (5 responses); the need for better IPR management by PROs (4 responses); and, the need for clearer State Aid rules (4 responses).

4. CONCLUSIONS AND RECOMMENDATIONS

Most public authorities are encouraging closer PRO-industry links across Europe through a broad variety of measures. However, significant cultural barriers to collaboration still exist, making it difficult for public bodies and their private counterparts to align interests – in particular regarding revenue sharing and costs. In order to diminish the effect of these cultural differences, there is a need for:

- all parties to have a common starting point for discussions, irrespective of their country of origin;
- PRO staff to be adequately incentivized (both financially and through career progression) in order to wish to take part in such activities;
- more professional knowledge transfer officers who have access to adequate training courses;
- more transnational staff exchanges between public and private sector employees;
- More funding for knowledge transfer activities – in particular for collaborative research and for partner finding activities.

From the consultation, it also clear that the regulatory differences between Member States can prove to be a disincentive for transnational collaboration. In particular, an element of harmonization of rules regarding Intellectual Property Rights ownership by PROs and joint ownership regimes of should be considered.

Furthermore, it would appear that the jury is still out regarding the need for a "European Bayh-Dole Act" - stakeholders remain divided on the subject and it's potential benefits.

Due to the fact that the consultation was inconclusive regarding the need for new European legislative proposals regarding research issues this avenue will not be pursued in the immediate future by the European Commission. However, there appears to be an urgent need for concrete guidance regarding facilitating PRO-industry links, focussing especially on actions which must be undertaken by public authorities and the stakeholders themselves.

The Commission is therefore going to develop a Communication on knowledge transfer which addresses some of these issues.

Furthermore, in the coming months the Commission will deliver both a strengthened Marie Curie scheme, under the new Research Framework Programme (FP7), in order to further promote additional public-private staff exchanges across Europe; and the new Competitiveness and Innovation Programme (CIP) which will facilitate additional transnational networking and partner finding through the Innovation Relay Centre network.

5. ANNEX I: LIST OF RESPONDENTS

5.1. Governmental bodies:

- Danish Agency for Science, Technology and Innovation (Ministry of Science Technology and Innovation)
- Defence Diversification Agency
- Industrial Property Office of the Slovak Republic
- Institute for the Promotion of Innovation through technology and science in Flanders (IWT-Flanders)
- Research Councils UK
- Scottish Enterprise (main Economic Development Agency for Scotland)
- VINNOVA
- Yorkshire Forward

5.2. PRO or Industry Associations

- CEFIC - European Chemical Industry Council
- CONSEN EEIG Euro-Group
- Deutscher Industrie- und Handelskammertag: Der Deutsche Industrie- und Handelskammertag (DIHK)
- EICTA, European ICT/CE Association (Information, Communication Technology and Consumer Electronics.)
- Eurochambers
- European Committee for Standardization CEN STAR (norms, standards and Research)
- League of European Research Universities (LERU)
- NATIONAL TECHNOLOGICAL CENTRE FOR THE FOOD AND CANNING INDUSTRY - CTC SPAIN
- UNITE
- ZAB ZukunftsAgentur Brandenburg GmbH

5.3. Commercial organisation (including consultancy) less than 250 employees

- BPM S.A.
- Bureau BD
- Chalmers Industriteknik
- FTW (Telecommunications Research Center Vienna)
- Helix Advisory Services
- Imperial College Consultants Ltd
- KKI Technology
- RiNA Netzwerk RNA-Technologien GmbH
- Sea Consulting
- Triithor GmbH
- YTKO

5.4. Commercial organisation (including consultancy) more than 250 employees

- Siemens AG
- STMicroelectronics

5.5. Universities

- RWTH Aachen University
- Universidade dos Açores
- Centre for Health Enterprise & Centre for the Development of Healthcare Policy & Practice, School of Healthcare, University of Leeds, U K.
- Department of Clinical Biochemistry, Copenhagen University Hospital Rigshospitalet.
- ECOLE CENTRALE PARIS
- Escola Universitària Politècnica de Mataró (Universitat Politècnica de Catalunya) EUPMt-UPC
- Harz University of Applied Sciences
- Kaunas university of technology
- Kungliga Tekniska Högskolan
- KVL - The Royal Danish Veterinary and Agricultural University
- Laboratory of Developmental Neurobiology, Department of Biology, University of Genoa
- Medical University Vienna
- Open University
- Polytechnic Institute of Leiria
- Robert Gordon University
- Tallinn University of Technology
- Technion
- Unictetra - TTO Univ. of Zurich and Univ. of Berne

- Universitat Autònoma de Barcelona
- University of Brighton
- University College London
- University of Crete
- University of Glamorgan
- University of Hull
- University of Keele
- University of Leiden
- University of Maastricht
- University of Minho
- University of Mons-Hainaut
- University of Newcastle
- University of Oxford
- University of Paisley
- University of Paris-Sud XI
- University of Sofia & National Center of Nanotechnology
- University of St Andrews
- University of Stockholm
- University of Strathclyde
- University of Swansea
- Universidad de Vigo
- University of Warwick
- University of Warsaw
- University of Zurich
- Universitat Politècnica de Catalunya
- Wageningen University

5.6. Other public research organisations

- Academy of Sciences of the Czech Republic
- AREA Science Park Padriciano
- Cancer Research UK (and its Tech Transfer Office, Cancer Research Technology Ltd.)
- Centrum dopravního výzkumu
- Council for the Central Laboratory of the Research Councils (CCLRC)
- CRS4, Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna
- Danish Biometrics Research Project Consortium
- European Organisation for Research and Treatment of Cancer (EORTC)
- Forschungszentrum Jülich Institute for Chemistry and Dynamics of the Geosphere: ICG-III Phytosphere
- Fraunhofer IFF
- Fundación Zaragoza Logistics Center
- Institut d'Aéronomie Spatiale de Belgique
- Science Technology Park Of Crete
- Výzkumný ústav potravinářský Praha (Food Research Institute Prague)
- WTCM-CRIF

5.7. Other

- The Chamber of Commerce and Industry of Romania
- Merseybio
- Steinbeis Foundation

This list only includes the names of respondents who gave consent for their responses to be published.