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Legal Framework for
e-Research Project

Legal Strategies for Streamlining Collaboration in an e-Research World

Professor Brian Fitzgerald and
Anthony Austin

Legal Framework for e-Research Project
Queensland University of Technology



Legal Strategies for Streamlining
Collaboration in an e-Research World

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Legal Strategies for Streamlining Collaboration in an e-Research World

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Professor Brian Fitzgerald and Anthony Austin

Legal Framework for e-Research Project
Queensland University of Technology

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 Legal Framework for
e-Research Project

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INTRODUCTION

As part of our Legal Framework for e-Research Project we have sought to provide guidance on how the substance and practice of law can be structured in a way to promote collaborative innovation.¹

To this end on the 12th and 13th of June of 2008 we convened a Roundtable to consider legal strategies for *Streamlining Collaboration in an e-Research World*. We were fortunate to attract some of Australia's and the world's leading thinkers and practitioners in this area.

The key objective of the Roundtable was to explore methods and to recommend strategies for improving the efficiency of research and innovation in the e-Research world.

The collection of papers and submissions that follows provides a record of and context for that Roundtable. The papers that appear here were either prepared for the Roundtable in June 2008 or adapted from the transcript of those proceedings. Chapters 1, 2 and 12 emanate from our Legal Framework for e-Research Project and have been published in B. Fitzgerald (ed.), *Legal Framework for e-Research* (2008) Sydney University Press, Sydney available online at <www.eprints.qut.edu.au>. Chapters 13, 14 and 15 contain submissions that were made to the Review of the National Innovation System <www.innovation.gov.au/innovationreview>.

Since the Roundtable two reports - *Collaborating to a Purpose*² (O'Kane Report) and *Venturous Australia*³ (Cutler Report) - have been released by the Panel on the Review of the (Australian) National Innovation System (NIS). Both reports made many recommendations to the Federal Government for the improvement of the Australian Innovation System. The Federal Government will respond to these recommendations with a White Paper in 2009.

It is hoped that the suggestions put forward at the Roundtable and evidenced in this collection can inform the Federal Government and others key stakeholders as they develop strategies for the future.

We would like to acknowledge the assistance of CSIRO Australia and the Group of Eight Universities for kindly permitting us to reproduce their submissions to the Review of the National Innovation System in this collection. We would also like to thank the Federal departments DEEWR & DIISR for their tremendous support.

Finally, we would like to acknowledge and thank Scott Kiel Chisholm, Dr. Annie Connell, Tanya Butovksy, Steven Gething and Rami Olwan for their support in organising the Roundtable and assisting us with the preparation of this collection and all of the Roundtable participants and all of the contributors to this collection.

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¹ See generally www.eresearch.law.qut.edu.au See also, Mr. Anthony Austin and Professor Brian Fitzgerald, Submission to the Review of the National Innovation System, 'Streamlining Negotiation and Contracting in Collaborative Research Environments', p.13 at http://www.innovation.gov.au/innovationreview/Documents/428A-Brian_Fitzgerald_and_Anthony_Austin.pdf as cited by Professor Mary O' Kane in the Review of the Cooperative Research Centres Program, *Collaborating to a Purpose*, July 2008 at <http://www.innovation.gov.au/innovationreview/Documents/CRCReviewReport.pdf> p xiii ad 62.

² See <http://www.innovation.gov.au/innovationreview/Documents/CRCReviewReport.pdf>

³ See http://www.innovation.gov.au/innovationreview/Documents/NIS_review_Web3.pdf.

PART ONE: CHAPTERS

Please note: The views expressed in these chapters are the views of the chapter authors only and are not to be taken as representations or views of the author's organisation or employer.

STREAMLINING COLLABORATIVE AGREEMENTS IN AN e-RESEARCH WORLD

Anthony Austin and Professor Brian Fitzgerald⁴

INTRODUCTION

On 22 January 2008, the Australian Minister for Innovation, Science and Research announced a review of the 'National Innovation System'⁵ which intends to analyse the Australian innovation system and to 'build innovation capacity by bringing sectors, institutions and individuals together'.⁶

To achieve innovation through this style of collaboration, the different actors will inevitably need to engage with technologically enhanced research methods and practices known broadly as e-Research. The rapidly emerging e-Research landscape promises to accelerate the discovery of knowledge, to increase the access and dissemination of data and to provide the opportunity for the international and serendipitous exchange of knowledge.⁷ The law will play a central role in this environment. It acts like an infrastructure to shape the flow of knowledge.

In many collaborative projects, the negotiation and completion of agreements which outline the project are not only critical, but also represent one of the biggest barriers to effective collaboration. The purpose of this chapter is to consider how the negotiation and contractual frameworks for research can be streamlined to accommodate the coming era of collaborative e-Research.

STREAMLINING THE PROCESS

In a collaborative project, the law should be an enabler to innovation, not an inhibitor:

"It is important that institutional arrangements are made so as to minimize the extent to which the law becomes an impediment to cooperation among researchers, whether directly or indirectly by undermining informal mechanisms of trust and dispute resolution".⁸

For the law to be an enabler, it must be supported by polices, principles and frameworks:

"Perhaps the biggest problem facing e-Research is the lack of understanding and agreement as to what is required in terms of local and national information infrastructure to support e-Research activities. Without this common framework

⁴ Professor Brian Fitzgerald is the Project Leader of the Legal Framework for e-Research Project (<http://www.e-research.law.qut.edu.au/>) and Anthony Austin was a Project and Research Officer with the same project. We also acknowledge the assistance of Steven Gething Research Officer in the preparation of this chapter. This chapter is derived from the publication 'Legal Framework for e-Research'.

⁵ See the Review of the National Innovation website at <http://www.innovation.gov.au/innovationreview/Pages/home.aspx>.

⁶ Senator the Honourable Minister Kim Carr speech to the Australian / Melbourne Institute 2008 Economic and Social Outlook Conference Economics and Commerce Building University of Melbourne 28 March.

See <http://minister.innovation.gov.au/SenatortheHonKimCarr/Pages/NEWAGENDAFORPROSPERITY.aspx>.

⁷ The Legal Frameworks for e-Research Project Report, Legal and project agreement issues in collaboration and e-Research: Survey Results (2007) authored by Maree Heffernan and Nikki David and assisted by Dr Amanda McBratney, Scott Kiel Chisholm, Professor Brian Fitzgerald, Professor Anne Fitzgerald and Dr. John Abbot, 72. A copy of this report can be sourced at: <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>.

⁸ Professor Paul A. David, and Dr. Michael Spence, Towards institutional infrastructures for e-Science: the scope of the challenge, 7 at <http://www.oii.ox.ac.uk/research/publications.cfm>.

of understanding it is actually very difficult to come to legal agreement as to collaborative arrangements, sharing, and interaction beyond a narrow set of participants. This then actually inhibits the establishment of an open e-Research environment that starts to utilise the potential offered by digital technologies”⁹

The key question that arises is how to design and streamline the legal agreement process so that collaborative e-Research projects can be established and can commence without unnecessary delay?

To answer this question, four issues need to be considered:

- Institutional Frameworks and Policies. The establishment of institutional frameworks (potentially within existing government agencies) which should have input from industry, individuals and other organisations. This framework should facilitate the creation of national, state and localised policies that will promote the flow of knowledge that is necessary for collaboration to occur;
- Relational Frameworks. The creation of frameworks which clarify purposes and expectations between parties about collaborative projects and which engender trust and formulate relationships that are effective for collaboration to succeed;
- Tools. The design and employment of practical tools which have the effect of shortening the timeframe for the negotiation and drafting of formal collaboration agreements;
- Application. The implementation of institutional frameworks which provide training and education in these policies, relational frameworks and tools and that manages their adoption and utilisation by universities, industry and research.

This chapter addresses these four issues by examining:

- The perceptions of stakeholders in relation to collaborative projects and the processes for formalising collaborative project agreements;
- National and international initiatives and studies on proposed policies, frameworks and tools for facilitating collaborative agreements;
- The discussions held at the recent Queensland University of Technology Legal Framework for e-Research Roundtable; and
- Proposals for the streamlining of legal agreements for collaborative projects through institutional and relational frameworks, policies and tools.

⁹ The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 62. See <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>.

STAKEHOLDER PERCEPTIONS – THE LEGAL FRAMEWORK FOR e-RESEARCH SURVEY - 2007

In order to assess the effectiveness of collaborative agreements, frameworks, tools and policies, it is necessary to understand how these issues are perceived by those who work in the collaborative e-Research environment.

In 2007, the Legal Frameworks for e-Research Project conducted a survey entitled *Legal and project agreement issues in collaboration and e-Research: Survey Results*.¹⁰ The survey obtained evidence from Australian researchers, research managers and legal advisors from universities, industry and government about legal and other issues in collaboration and e-Research.¹¹

The survey sought to:

“...identify common legal and project agreement problems encountered in forming research collaborations in order to from strategies to facilitate and streamline the process of e-Research in the Australian context”.¹²

The survey concentrated on three specific themes:

- Firstly, what are the legal procedures and norms for formalising collaborative e-Research agreements¹³ and how do these procedures and norms affect the parties and the success of collaborative innovation projects?¹⁴
- Secondly, what are the problems encountered in negotiating issues of IP ownership, licensing, data access and what are other complications and delays that arise from formalising these agreements?¹⁵ How do negotiations, complications and delays subsequently undermine feelings of trust and endanger the willingness of parties to participate in collaborative innovation?¹⁶
- Thirdly, what are the participant’s views on practical tools, relational frameworks and other strategies for simplifying the agreement process for collaborative e-Research projects?¹⁷

Survey participants were from research and management roles with most of them working in the university sector.¹⁸ A sizeable number of participants were involved in e-Research,¹⁹ stating that they are ‘often’ or are ‘sometimes’ are involved with different parties in collaborative research.²⁰

10 See *Legal and project agreement issues in collaboration and e-Research: Survey Results* at <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>.

11 ‘e-Research’ has been defined as: “...research activities that use a spectrum of advanced ICT capabilities and embraces new methodologies emerging from increased access to; Broadband communications networks, research instruments and facilities, sensor networks and data repositories; Software and infrastructure services that enable secure connectivity and interoperability; and Application tools that encompass discipline-specific tools and interaction tools...”. The e-Research Coordinating Committee, *An Australian e-Research Strategy and Implementation Framework: Final report of the e-Research Coordinating Committee*, April 2006. See: <http://www.dest.gov.au/NR/rdonlyres/3AC7BB72-3397-4269-A5FC-6758CDDFEF24/16579/eResearchFinalReportPublicVersionforweb.rtf>.

12 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 8.

13 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 25-31 and 37-42.

14 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 25-31 and 37-42.

15 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 43-46.

16 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 46-54.

17 The Legal Framework for e-Research Project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results*, 55-62.

18 Of the 176 participants, 85 (or 48%) were in research roles, 66 (or 38%) were in research and/or organisational management and 25 (or 14%) were in legal or contracts roles. The majority of participants were from the University sector (64.8%), with 9.1% from Industry/Commercial and 9.1% from Government sectors, 10.8% from other

SUPPORT FOR COLLABORATION

Overall, the survey participants supported the concept of collaboration and in particular identified the attainment and the sharing of knowledge as being a major benefit of collaborative research. Participants ranked the importance of collaborative outcomes in the following order; the co-authoring of publications, the inflow of knowledge, the sharing of knowledge by public disclosure or publications, the improvement of research practices, the production of IP such as patents and copyright and obtaining access to improved work practices and better equipment or facilities.²¹ Benefits such as royalties, revenue, and return on investment, licenses and start-up companies were less relevant outcomes for the participants.²² These results may reflect the academic nature of many survey participants.

FORMAL AND INFORMAL COLLABORATION

Many survey participants provided evidence of a strong culture of informal collaborative agreements and informal collaborative networks.²³ Less than half of the participants were involved in collaborations where formal collaborative agreements were entered into (such as master research agreements and licences).²⁴

This preference for informal collaborative arrangements may stem from evidence that formal collaborative research agreements can take anything from three months for a simple two-party agreement to eight months for large, complex or multi-party agreements to be finalised.²⁵ Participants made particular comment about this issue:

*“Legal agreements represent the largest impediment to timely research...”*²⁶

*“...Unfortunately the formal agreements we use are becoming increasingly impractical due to the time and costs of developing the agreements...”*²⁷

*“We had a 12-month ARC grant for which it took 15 months to get an MOU signed”*²⁸

Research Institutes and 6.3% from law firms. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 14.

19 Approximately one-third (34.3%) of participants stated that they are 'extensively involved' with e-Research (37.1% moderately involved; 18.3% 'slightly involved' and 10.3% 'not at all involved'). Thirty-one percent of researchers, 41% of research/organisational managers, and 28% of the legal/contracts respondents stated that they are 'extensively involved' in e-Research. See Figure 3. Respondent's Involvement in e-Research, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 15.

20 Universities 96%. Research institutions 85%. Industry participants 78%. See Figure 5. Relative Frequency of Involvement with Differing Parties, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 21.

21 See Figure 8. Importance of Research Outcomes to Collaborative Projects, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 32.

22 See Figure 8. Importance of Research Outcomes to Collaborative Projects, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 32.

23 'Informal networks (including informal conversations, conference interactions)', 'informal agreements leading to co-authored publications' and 'single research contracts' were the most frequent arrangements cited. Approximately 70% of respondents stated that their collaborations often involve informal networks (including informal conversations, conference interactions). Only 7% of the sample stated that their collaborations often involve joint ventures, cross-licensing or and technical assistance agreements. See Figure 7, Relative Frequency of Various Types of Collaboration Agreements/Arrangements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 26.

24 44%. See Figure 7, Relative Frequency of Various Types of Collaboration Agreements/Arrangements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 26.

25 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 38.

26 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 38.

27 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 38.

28 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 51.

*“Legal advice often tends to make the collaboration so formal (l) complicated that it endangers the willingness of collaborators to participate. Sometimes legal advice is too oriented towards protecting the interests of my organisation, so that it does not see that formal agreements need to be balanced win-win arrangements”.*²⁹

Survey participants also stated that given the timeframes of the parties, collaborative projects often commence before a formal collaborative agreement has been finalised:³⁰

*“...you've got a short-ish timeline, and you can't afford to wait months for the baggling to stop. If you don't start before the contract is signed, you'll won't finish on time and end up in violation of the terms of agreement”.*³¹

*“The legal and contractual processes can often be much slower than the time it actually takes to complete the research!”.*³²

Many participants felt that there were certain issues that caused problems in the negotiation and the performance of formal collaborative research agreements which included; intellectual property-ownership; data ownership and access; intellectual property-licensing and the over-valuing of intellectual property.³³

These negotiation difficulties are perceived as eroding the feelings of trust between the participants:³⁴

*“It is the mutual rapport and trust between parties that is vitally important. If there is no trust then even a perfectly good legal document may be misused....”.*³⁵

Tellingly, a majority of participants stated that the negotiation of a formal agreement ‘became too complex’³⁶ because of ‘differing expectations’³⁷ between the project parties and believed that negotiating with university technology transfer offices, industry and government agencies carry with them their own particular difficulties when entering into formal agreements.³⁸

Despite the existence of a culture of informal collaboration, a sizeable number of survey participants indicated that they still want formal agreements for collaborative projects.³⁹ Interestingly, many

29 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 39.

30 Commencing collaborative research projects prior to the signing of agreements is a relatively common practice; with 26% stating that they ‘often’ and 54.2% stating that they ‘sometimes’ commence projects before agreements are signed (only 6.8% stated that they never start projects prior to sign-off). The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 40.

31 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 40 to 41.

32 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 41.

33 See Figure 11. Specific Problems in Negotiating Formal Agreements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 47.

34 Over one-third of the sample (36%) stated that sometimes negotiation difficulties prevented the project from proceeding and that trust had been eroded. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 43.

35 The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 55.

36 See Figure 10. General Problems in Negotiating Formal Agreements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 43.

37 See Figure 10. General Problems in Negotiating Formal Agreements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 43.

38 See Figure 10. General Problems in Negotiating Formal Agreements, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 43.

39 Almost one-third of the sample believe that formal agreements are always necessary (31.1%), with approximately two-thirds stating that formal agreements are sometimes necessary (68.0%). Over half of the sample (56.5%) also stated that they never conclude formal agreements without consultation or assistance. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 39.

participants stated that their collaborations never involve the need for patent protection or licensing arrangements.⁴⁰

Participants stated that for collaborative projects to succeed they needed shared goals, good relationships and communication with their project partners.⁴¹ Most importantly, they wanted formal agreements that were easy to enter into,⁴² particularly agreements which specifically addressed intellectual property, data ownership or data access and which exhibited a degree of flexibility in their application to collaborative projects.⁴³

NATIONAL AND INTERNATIONAL INITIATIVES – PREVIOUS STUDIES

The issues raised by the survey report are reflective of concepts that have also been examined by significant Australian and overseas studies in the area of collaborative research. These studies themselves have many themes in common with each other, such as: Links or partnerships between industry, universities and research institutions are necessary for increasing collaborative research,⁴⁴ however issues regarding IP ownership and access are often viewed as impediments to collaboration;

There is a need for uniform and national approaches to IP ownership and licensing and establishing a set of best practice principles for industry and university collaboration with publicly funded research agencies;⁴⁵ and the final value of an output should be shared equitably, based on the direct proportional value of the inputs to a project.⁴⁶

Some of the recommendations, documents, guidelines or interactive tools which these studies have proposed are examined below. These proposals fall within four broad categories being:

- Technology enabled collaborative research agreements;
- Template collaborative research agreements;

40 Approximately one-in-three participants stated that their collaborations never involve patents, software, know-how or other intellectual property licences or Cooperative Research Centres. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 25.

41 Approximately half (49.0%) of comments made predominantly reflect the importance of research synergies and shared goals and resources, with approximately 40% of comments referring to the importance of good relationships and communication. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 37.

42 92% of participants believed that formal agreements which were easy to enter into was 'somewhat' to 'very important' in order to increase collaborative e-Research. See Figure 14. Future Importance of Various Contracting Issues, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 62.

43 Intellectual property (53% stating that it will be 'very important' and 38% stating that it will be 'somewhat important'), 'Data ownership or access' (51% stating that it will be 'very important' and 42% stating that it will be 'somewhat important') and 'Flexibility of formal agreements' (43% stating that it will be 'very important' and 48% stating that it will be 'somewhat important'). See Figure 14. Future Importance of Various Contracting Issues, The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 62.

44 The Prime Ministers Science, Engineering and Innovation Council (PMSEIC) Report Australia's Science and Technology Priorities for Global Engagement, December 2006, 61.

See http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Global_Engagement.htm.

45 Recommendation 11, Dr J Howard 2005, Knowledge Exchange Networks in Australia's Innovation System: Overview and Strategic Analysis, Howard Partners Pty Ltd, commissioned for The Business, Industry and Higher Education Collaboration Council (BIHECC). See <http://www.dest.gov.au/NR/rdonlyres/D60AE27E-1BF3-4305-ACCC-3027FE0A43FF/8488/KENReportFinal.rtf>.

46 Department of Education, Science and Training, Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 2004, 37. See <http://www.dest.gov.au/NR/rdonlyres/327F4C1D-99CC-4F93-91FB-1A2DEA8F299E/3623/pub.pdf>.

- Guidelines which advise parties on how to construct and draft collaborative research agreements for university - industry collaborations or to meet funding requirements;⁴⁷ and
- The creation of institutional frameworks which co-ordinate and facilitate the streamlining of legal processes for formal collaborative agreements.⁴⁸

TECHNOLOGY ENABLED COLLABORATIVE RESEARCH AGREEMENTS

THE UIDP TURBONEGOTIATOR PROJECT – 2006

A current project which is attracting much interest is the TurboNegotiator (“TN”), established by the University-Industry Demonstration Partnership (“UIDP”⁴⁹).

The TN Project started in July 2006 and seeks to create an online methodology for constructing effective and equitable university-industry collaborative research agreements from clauses selected by the TN program in accordance with its *Guiding Principles for University-Industry Endeavours*.⁵⁰ These principles state that universities, research organisations and industry must understand:

The various levels of their respective contributions to collaborative projects;⁵¹ each other’s objectives or ‘missions’, such as university interest in knowledge sharing and education and industry’s interest in profitability;⁵² Their respective constraints in a collaborative project, particularly the need of industry partners for timely agreements which ensure appropriate commercial returns;⁵³ and The need to develop long-term relationships in collaborative research.⁵⁴ TN was commenced following evidence showing that the negotiation of university-industry research agreements in the US is a barrier to research collaboration.⁵⁵

The TN online program is designed to balance each party’s interests, contributions and constraints regarding a collaborative project. Agreements are formed which are tailored to the parties’ interests, instead of them having to conform their interests to the parameters of an established template agreement.

Importantly, TN contains a ‘project space’ in which university and industry parties can obtain general consensus about each others perceptions and ideas for a collaborative project, before they select appropriate clauses for the research agreement. The project space includes ‘consensus statements’

47 This has been adopted by the European Commission Seventh Framework Programme (See http://cordis.europa.eu/fp7/home_en.html), the Commission of the European Communities (See Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for universities and other research institutions to improve their links with industry across Europe, 2.at http://ec.europa.eu/invest-in-research/pdf/sec2007449_en.pdf) and the CREST OMC Expert Group (See http://ec.europa.eu/invest-in-research/policy/rd_collab_en.htm).

48 This is exemplified by Professor Paul A. David, and Dr. Michael Spence, Towards institutional infrastructures for e-Science: the scope of the challenge. See <http://www.oii.ox.ac.uk/research/publications.cfm>.

49 The UIDP was established on 1 August 2006 has participating members from both industry and universities and is convened by The National Academies, Washington. UIDP developed out of the University-Industry Partnership Project (Established in 2003 and funded by the US National Council of University Research Administrators) Mayo, Merrilea J., Current Status of University-Industry Relationships in the U.S. Innovation System. See http://www.uidp.org/UIDP_Intro.pdf, 2-3.

The University-Industry Congress of the National Council of University Research Administrators analysed examples of negotiations and collaborative projects between university and industry from August 2003 to April 2006. NCRA Report, Living Studies in University-Industry Negotiations, April 2006. See http://www7.nationalacademies.org/guirr/Guiding_Principles.pdf.

50 NCRA Report, Guiding Principles for University-Industry Endeavours, April 2006.

51 Guiding Principle #1, 5-6. NCRA Report, Guiding Principles for University-Industry Endeavours, April 2006.

52 Guiding Principle #1, 7. NCRA Report, Guiding Principles for University-Industry Endeavours, April 2006.

53 Guiding Principle #1, 7. NCRA Report, Guiding Principles for University-Industry Endeavours, April 2006.

54 Guiding Principle #2. NCRA Report, Guiding Principles for University-Industry Endeavours, April 2006, 8.

55 Evidence presented at the University-Industry Congress Summit, Washington, 25 April 2006.

which guide parties in dealing with contentious issues. Each statement comments on the issue at hand, explains the reasoning behind the statement, sets out ‘principles’ which the parties must adhere to and lists other factors or comments that should be considered.⁵⁶

The TN software interview tool asks a series of questions of each party to the project. The questions are organised into specific sections relating to budgetary and investment considerations, the nature of the research, background IP, the probability of inventions resulting from the project, disclosure requirements, export controls, indemnification and potential conflicts of interest.⁵⁷ The answer provided to each question then determines the suggested agreement clauses. This tool will provide more than one alternative clause for the parties to choose from.⁵⁸

Clauses which are suggested then hyperlink to further information about their suitability in relation to each party’s interests and their overall effect on the agreement and the project. Examples of such questions include: What is the nature of the project?; What are the disciplinary areas which the project encompasses?; What is the nature and extent of each parties contributions to the project?; What is the likelihood of a patentable result arising out of the project?; What are the costs to each party of participating and each party’s market presence?; Who developed the research project concept and who made creative contributions to that concept?; Why do the parties want to work together?; Who owns background IP that could have impact on the project?; Who is funding the project?; What are the financial and non-financial contributions from the parties?; What are the types of labour and non-labour contributions from the parties?; How important are they?; and Is there a need for confidentiality about the project?⁵⁹

TN will also measure how much time an agreement will take to finalise using the TN program. This data will be used to compare against how much time it takes to finalise non-TN facilitated agreements. It is still in the process of being developed and the UIDP has gone through several stages of development to date, incorporating member surveys, consultations and clinical software trials of the questionnaire program. The UIDP also hopes to develop a negotiation guide and/or a manual which will train negotiators in accordance with the program methodology and eventually, a national database of TN sourced data which can analyse negotiation trends and factors that impede negotiations. A working prototype of TN is expected to be available for internal UIDP trialling by December 2008.⁶⁰

TEMPLATE COLLABORATIVE RESEARCH AGREEMENTS

B-HERT – 1996

In contrast to the approach taken by UIDP, there have been a number of studies that advocate the use of template agreements for collaborative research projects.

56 There are draft consensus statements for how to produce a ‘statement of work’ of aims and activities for the project, how to determine issues of indemnification in the project, how to balance issues regarding the publication of project IP, dealing with copyrightable and other research results and dealing with background IP. See the drafts from the UIDP meeting April 9 to 10, 2008 at http://www.osp.gatech.edu/TN/documents/ConsensusStmt04_09_08.doc and see presentation by Julia Garton, TurboNegotiator, Milestones and Pathways, 23 July 2007, Third Meeting of the University-Industry (Demonstration) Partnership, July 23-24, 2007. The National Academies Washington. See http://www.uidp.org/UIDP_ARCHIVED_MEETINGS.html.

57 See the trial TurbNegotiator software (Limited to questions on IP issues) at <http://www.osp.gatech.edu/TN/index.html>.

58 Presentation by Julia Garton, TurboNegotiator, Milestones and Pathways, 23 July 2007, Third Meeting of the University-Industry (Demonstration) Partnership, July 23-24, 2007. The National Academies Washington. See http://www.uidp.org/UIDP_ARCHIVED_MEETINGS.html.

59 See Casey, James J. Jnr, The University-Industry Demonstration Partnership: An Incremental Improvement to University-Industry Collaboration, Paper Presented at The Legal Framework for e-Research Conference, 11 to 12 July, 2007, Gold Coast, Australia.

60 See the UIDP website at http://www.uidp.org/UIDP_PROJECT_STATUS.html.

In 1996, B-HERT⁶¹ published a report, *Partners in Intellectual Property*,⁶² which comparatively analysed the IP policies of certain higher education and research institutes. The report found that the interests of industry and the interests of universities and research differ in the development and commercialisation of IP. The objectives of universities and research are largely identified as the advancement of knowledge as a contribution to society, whereas the objectives of industry are commercial and based upon achieving specific returns on investments.

The report also identified ‘friction points’ between universities, research and industry during negotiations about IP, including:

- Users’ rights and the reservation of rights to use the IP,⁶³ IP ownership issues regarding the ineffectiveness of joint ownership,⁶⁴ royalty payments for improvements⁶⁵ and competing interests between the use of exclusive licensing and assignments;⁶⁶
- Management issues such as profit sharing,⁶⁷ maintenance of communication⁶⁸ and relationships,⁶⁹ the rights of students to royalty income,⁷⁰ the status of project workers as inventors,⁷¹ the publication of commercially sensitive work⁷² and expectations for performance timeframes which are held by both parties;⁷³
- Cultural differences between industry and universities or research such as differences in negotiating and management styles,⁷⁴ over reliance on legal expertise⁷⁵ and the lack of experienced joint project supervisors;⁷⁶ and
- Unsuitable and inflexible contracts such as the over use of standard form contracts by industry or government organisations in their dealings with universities and research institutions.⁷⁷

Importantly, the report proposes that collaboration parties enter into a ‘Partnering Concept’⁷⁸ for the development and commercialisation of IP as a starting point for negotiations. The Partnering Concept discusses issues such as users’ rights, IP ownership, maintaining communication and relationships and timing expectations.⁷⁹ It envisages three types of collaboration agreement scenarios:

61 B-HERT is an association of Australian universities, corporations, professional associations and major public research organisations that seeks to “...pursue initiatives that will advance the goals and improve the performance of both business and higher education for the benefit of Australian society” by “...[influencing] public opinion and government policy on selected issues of importance”. See http://www.bhert.com/aboutBHERT_Mission.htm.

62 See *Partners in Intellectual Property* at http://www.bhert.com/publications_Reports.htm.

63 *Partners in Intellectual Property*, 4.

64 *Partners in Intellectual Property*, 5.

65 *Partners in Intellectual Property*, 5.

66 *Partners in Intellectual Property*, 6.

67 *Partners in Intellectual Property*, 6.

68 *Partners in Intellectual Property*, 6.

69 *Partners in Intellectual Property*, 7.

70 *Partners in Intellectual Property*, 7.

71 *Partners in Intellectual Property*, 7.

72 *Partners in Intellectual Property*, 7.

73 *Partners in Intellectual Property*, 9.

74 *Partners in Intellectual Property*, 10.

75 *Partners in Intellectual Property*, 10.

76 *Partners in Intellectual Property*, 10.

77 *Partners in Intellectual Property*, 11.

78 *Partners in Intellectual Property*, 26.

79 See clauses 3, 4, 7 and 8 and Annexure C to *Partners in Intellectual Property*.

- Universities or research organisations are the source of the background IP that is brought to the project;
- Industry is the source of the background IP that is brought to the project; and
- Where the background IP is still in the conceptual phase.⁸⁰

The report provides a contractual template for either the assignment or the licensing of IP rights called the ‘Grant of Intellectual Property Rights’. It contains clauses that address IP licensing and assignment, consideration and warranties,⁸¹ but it does not address the publication of IP results, management issues and contractual flexibility.

THE LAMBERT REVIEW – 2003

The use of template agreements for collaborative research projects was taken to a greater level of practical application by the U.K. Lambert Review in 2003.

In 2002, the United Kingdom Department for Education and Skills and the Department for Trade and Industry commissioned Richard Lambert to undertake a nationwide review of university and industry collaboration in the United Kingdom. The U.K. government was concerned that domestic business funded research was falling behind that of other major economies.⁸²

Consequentially, they wanted strategies to increase domestic and international business demand for British research and development and in particular, to improve the level of collaboration between industry and U.K. universities.⁸³

After its establishment in 2002, the Lambert Review of Business-University Collaboration went on to examine various barriers to increased industry and university collaboration, how they could be removed and how opportunities for collaboration could be increased. It identified case studies for industry-university collaborative ventures and analysed numerous stakeholder submissions on issues of collaborative research and government policy.

The Review issued *The Lambert Review of Business-University Collaboration - Final Report* in 2003. It contains thirty-three recommendations covering a broad range of policy strategies for facilitating knowledge transfer, third stream funding, university codes of governance and formal and informal networks between business people and academics. The Report specifically examined the role of collaborative research in promoting the transfer of knowledge between universities, industry and the wider community⁸⁴ and in doing so identified:

“...that collaborative research is one of the most effective forms of knowledge transfer”.⁸⁵

80 Partners in Intellectual Property, 27. It is unclear whether the Partnering Concept is intended to be a voluntary protocol or a binding agreement. Further, the report does not address issues of cultural differences or contractual flexibility.

81 Partners in Intellectual Property, 40-48.

82 See The Lambert Review of Business-University Collaboration – Final Report at http://www.hm-treasury.gov.uk/media/9/0/lambert_review_final_450.pdf, Chapter 2.

83 The Lambert Review of Business-University Collaboration – Final Report, 9-10.

84 The Lambert Review of Business-University Collaboration – Final Report, Chapter 3.

85 The Lambert Review of Business-University Collaboration – Final Report, paragraph 3.31.

It concluded that disagreements often arise in negotiations between industry and universities over the ownership of IP and exploitation rights, which were identified as time-consuming and expensive.⁸⁶ Failure to agree on IP ownership often deterred both industry and universities from research collaboration.⁸⁷ This is compounded where the parties fail to understand each other's intentions for the resulting IP, particularly where there is:

"...no clear framework...to help the two sides balance their competing interests".⁸⁸

The report firstly recommended that a set of model collaborative research agreements be created and used on a voluntary basis in order to speed up negotiations in university-industry collaborative projects.⁸⁹

Secondly, an 'IP protocol' should be established between industry and universities as a starting point for negotiation. Under the protocol, universities would automatically own the IP arising from collaborative research and industry would be able to negotiate the licensing of this IP. Industry could still own this IP whenever it makes significant contributions to the collaborative project.⁹⁰

Regardless of how IP ownership is determined, the protocol requires that universities must not be restricted in their future research capabilities, business must develop IP applications in a timely manner and the substantive results of the research must be published within an agreed period.⁹¹

In 2004, the Lambert Working Group was established. It was chaired by Richard Lambert and included stakeholders from industry and university bodies. The Lambert Working Group developed five model research collaboration agreements (and supporting materials) known as 'Model Agreements'.⁹²

Model Agreements One, Two and Three are designed to start negotiations between university and industry from the position that:

- The university owns the IP that results from the project.⁹³ The university is free to publish about the IP or have its staff and students discuss the project in tutorials or lectures⁹⁴(unless business or industry has issued a 'confidentiality notice' to prevent publication and discussion until patent or other protection for the IP has first been obtained);⁹⁵
- Each party retains ownership in their own IP which they bring to the project,⁹⁶ but grants to each other a royalty-free, non-exclusive licence to use this 'background' IP only for the purposes of the project;⁹⁷

86 The Lambert Review of Business-University Collaboration – Final Report, 3.34-3.36 and 4.12 to 4.18.

87 The Lambert Review of Business-University Collaboration – Final Report, 3.34-3.36 and 4.12 to 4.18.

88 The Lambert Review of Business-University Collaboration – Final Report, 3.34-3.36 and 4.12 to 4.18.

89 The Lambert Review of Business-University Collaboration – Final Report, 3.37.

90 The Lambert Review of Business-University Collaboration – Final Report, 4.19 - 4.27.

91 The Lambert Review of Business-University Collaboration – Final Report, Recommendation 4.1.

92 See the Lambert Model Agreements at

<http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=2&lv2=0&lv3=0&lv4=0>.

93 For example, clause 4.3. Model Collaborative Research Agreement No1.

94 For example, clause 5.1. Model Collaborative Research Agreement No1.

95 For example, clause 5.2. Model Collaborative Research Agreement No1.

96 For example, clause 4.1. Model Collaborative Research Agreement No1.

97 For example, clause 4.2. Model Collaborative Research Agreement No1.

- The university grants a non-exclusive licence to industry to use the IP resulting from the project for any purpose within an agreed ‘field’⁹⁸ or territory (indefinite, fully paid-up and royalty free);⁹⁹
- The non-exclusive licence allows industry to sub-licence the IP, provided it is to employees or agents and it is for the purposes of the project;¹⁰⁰
- The information, techniques or know-how which each party brings to the project cannot be disclosed to third parties.¹⁰¹ and
- A university will not be in breach of confidence by publishing or permitting discussion of IP, provided that they have not first received a ‘confidentiality notice’ from industry.¹⁰² This notice is designed to protect confidential information regarding business and industry and to minimise any risk to the possibility of obtaining a patent or other protection for the IP results.¹⁰³

Model Agreement One is the basic non-exclusive licence model. Models Two and Three repeat the provisions of Model Agreement One and only differ from it in further providing: an option for industry to negotiate an exclusive license rights for IP¹⁰⁴ or an option for industry to take an assignment of IP.¹⁰⁵ In both Model Agreements Two and Three, the university still retains the right to use the IP for academic teaching and research.¹⁰⁶

Model Agreements 4 and 5 are designed to start negotiations between university and industry from the position that:

- Industry owns the IP resulting from the project.¹⁰⁷ The university or any student or contractor must assign any rights they have in the resulting IP to industry;¹⁰⁸ and
- Each party retains ownership in their own IP which they bring to the project,¹⁰⁹ but grants to each other a royalty-free, non-exclusive licence to use each others ‘background’ IP only for the purposes of the project;¹¹⁰ and

98 Meaning a specific business or technological area. See the definition of ‘The Field and the Territory’ in the Lambert Agreements Guidance Notes at <http://www.innovation.gov.uk/lambertagreements/index.asp?lvl1=3&lvl2=0&lvl3=0&lvl4=0#note9>.

99 For example, clause 4.5. Model Collaborative Research Agreement No.1.

100 For example, clause 4.5. Model Collaborative Research Agreement No.1.

101 For example, clause 6. Model Collaborative Research Agreement No.1.

102 For example, clause 6.3. Model Collaborative Research Agreement No.1.

103 See the sample confidentiality notice at

http://www.innovation.gov.uk/lambertagreements/files/Sample_Confidentiality_Notice.DOC.

104 For example, clause 4.6. Model Collaborative Research Agreement No.2.

See http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_2_Ink.doc.

105 For example, clause 4.6. Model Collaborative Research Agreement No.3.

See http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_3_Ink.doc.

106 For example, clause 4.7. Model Collaborative Research Agreements No.2 and No.3.

107 For example, clause 4.3. Model Collaborative Research Agreements No.4 and No.5.

See http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_4_Ink.doc

and http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_5_Ink.doc.

108 For example, clauses 4.3 and 4.4. Model Collaborative Research Agreements No.4 and 5.

109 For example, clause 4.1. Model Collaborative Research Agreements No.4 and 5.

110 For example, clause 4.2. Model Collaborative Research Agreements No.4 and 5.

- Unlike Model Agreements 1 to 3, industry does not grant universities a non-exclusive licence to use the resulting IP outside of the actual project.¹¹¹

Model Agreement 4 provides the ability for universities to still publish and disseminate the IP for the ‘advancement of education through teaching and research’¹¹² (subject to the terms of any ‘confidentiality notice’ issued by industry).¹¹³

Under Model Agreement 5, the university has no publication or dissemination rights as in Model Agreement 4¹¹⁴ and can only use resulting IP for the purposes of the project itself.¹¹⁵

The Lambert Working Group has also supplied an ‘Outline’, consisting of questions designed to prompt the parties to think about and to discuss with each-other certain issues about the project before they select one of the model agreements, being; financial contributions, background IP, the project results, confidentiality and publication, liability and termination.¹¹⁶

A ‘Decision Guide’¹¹⁷ is also available for use in connection with the agreements. The guide provides a series of questions designed to determine which of the five agreements is best suited for the project at hand, based on each party’s answers to those questions. The questions focus on issues such as; reliance on background IP by the parties and the need for access to background IP;¹¹⁸ the need for universities to publish results and the need of sponsors to countenance publication;¹¹⁹ which parties have lead the projects, the relevancy of results to each party; the likelihood of patentable results and the likelihood of results that industry may not be interested in;¹²⁰ the need for exclusive licences; funding and budget considerations;¹²¹ who was the catalyst for the project; what the parties’ interest in the project is and what are the parties financial and non-financial contributions to the project.¹²²

‘Guidance Notes’ are also available which provide plain English definitions of the defined terms used in the agreements and explanations about the effect and intention of certain clauses.¹²³

CRC INC - 2006

The concept of template collaborative research agreements was also considered by the Australian Institute for Commercialisation (“AIC”¹²⁴) and the Cooperative Research Centres Association

111 For example, clause 4.6. Model Collaborative Research Agreements No.4 and 5.

112 For example, clause 5.1. Model Collaborative Research Agreements No.4.

113 For example, clause 5.2. Model Collaborative Research Agreements No.4.

114 See the Outline of the Lambert Agreements at

<http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=4&lv2=0&lv3=0&lv4=0>.

115 For example, clause 4.6. Model Collaborative Research Agreement 5.

116 See the Outline of the Lambert Agreements at

<http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=4&lv2=0&lv3=0&lv4=0>.

117 See the Outline of the Lambert Agreements at

<http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=2&lv2=1&lv3=0&lv4=0>.

118 Sections 1, 2 and 4. The Lambert Agreements Decision Guide.

See <http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=2&lv2=1&lv3=0&lv4=0>.

119 Section 2. The Lambert Agreements Decision Guide.

120 Section 3. The Lambert Agreements Decision Guide.

121 Section 4. The Lambert Agreements Decision Guide.

122 Additional Questions. The Lambert Agreements Decision Guide.

123 The Lambert Agreements Decision Guide.

124 The AIC is a private organisation that provides consultancy services in the technology transfer facilitation and brokerage of intellectual property. See the AIC website at http://www.ausicom.com/01_cms/details.asp?ID=19.

(“CRCA”¹²⁵) who in 2006 produced a ‘Model Constitution Document’ and a ‘Model Participants Agreement’ for use where a CRC is being formed as a joint venture company limited by guarantee.

The AIC and the CRCA recommend that:

*“...the template documentation should be treated as a starting point and each CRC and its participants must seek their own professional legal, accounting and taxation advice to determine whether they appropriately address the objectives and risks applicable to their own CRC”.*¹²⁶

The ‘Constitution Document’ is a company constitution document and details standard procedures for the CRC company’s organisation, including membership, general meetings, voting, the appointment and removal of directors and the powers and remuneration of directors.

The ‘Participants Agreement’ is a template contractual agreement between the ‘Participants’¹²⁷ and the CRC company. The intellectual property clauses set out rights and obligations about the use of background IP, the ownership of CRC IP and its commercialisation. All background IP is licensed by participants to each other and to the CRC company and depends on whether it will be used for either the project, for commercialisation or for general use. IP generated by a CRC project can be owned in accordance with the following options:¹²⁸

- The CRC company owns the project IP; or
- The Participants and the CRC company will own the beneficial interest in the project IP as tenants in common in accordance with the ‘Project Shares’¹²⁹ or in equal shares if no ‘Project Shares’ are specified; or
- The CRC company owns the interest of the Participants in the project IP on trust.

This agreement is primarily designed for the commercialisation of resulting project IP by the CRC company because it has an exclusive right to commercialise the project IP and grant licences.¹³⁰ Non-company Participants must obtain a licence to use project IP,¹³¹ unless otherwise authorised.¹³² They must provide information about project IP to the company when requested and must not deal with CRC IP in any way unless authorised.¹³³ Non-company Participants must grant the company a perpetual, irrevocable, royalty-free, non-exclusive licence for any improvements which non-company Participants make to the project IP.¹³⁴

125 The Cooperative Research Centres Association is the umbrella organisation for the 56 Cooperative Research Centres (“CRCs”) that operate in Australia in six industry areas. The stated aim of the CRC Programme (administered by DEEWR) is to “...enhance Australia’s industrial, commercial and economic growth through the development of sustained, user-driven, cooperative public-private research centres that achieve high levels of outcomes in adoption and commercialisation”. See http://www.crca.asn.au/about_crcs/default.htm.

126 See the AIC website at http://www.ausicom.com/01_cms/details.asp?ID=624.

127 Participants are those persons or bodies (other than the Company) who sign the Participants Agreement. See the definition of “Participants”. Clause 1.1 of the Participants Agreement.

128 Clause 22.1 of the Participants Agreement.

129 Being the proportional entitlement of Participants and the CRC company as set out in the agreement. See the definition of “Project Shares” Clause 1.1 of the Participants Agreement.

130 Clauses 23.1 and 23.2. Participants Agreement.

131 Ibid, Clause 22.6. Participants Agreement.

132 Ibid, Clause 22.15. Participants Agreement.

133 Ibid, Clause 22.13. Participants Agreement.

134 Ibid, Clause 22.16. Participants Agreement.

This agreement also requires that a ‘Commercialisation Plan’ must be circulated to all participants before the project IP is exploited.¹³⁵ Non-company Participants cannot commercialise project IP and can only use it for teaching purposes or for internal research, provided that this use does not impede upon designated confidential information or the ability to protect and commercialise resulting IP.¹³⁶

GUIDELINES

CREST – 2006

In addition to the issue of how collaborative research agreements are to be created, a number of studies have developed guidelines or toolkits which will assist parties in choosing and constructing these agreements.

This issue was examined by the CREST OMC 2nd Cycle Expert Group on Intellectual Property¹³⁷ in 2006 when it published their report *Cross-Border Collaboration between Publicly Funded Research Organisations and Industry and Technology Transfer Training*.¹³⁸ CREST sought to produce guidelines which improve the ‘coherence and effectiveness’ of IP ownership rights that are ‘applicable in publicly funded research’¹³⁹ and to develop methodologies for improving and facilitating cross-border collaborative projects.¹⁴⁰

The report proposed that a toolkit be adopted to enable a collaborating party to identify how IP issues are handled in another European Union member state. The toolkit is designed to assist parties to make a decision about the best strategy for determining ownership of and access to the IP resulting from a project. It does this by providing explanation and commentary on ownership and rights to use IP, financial contributions made by industry, the university’s use of results of academic purposes and cross-border differences and legal requirements for other project partner’s jurisdictions.

The CREST toolkit is currently active,¹⁴¹ although it is still under development and is subject to a review at the end of 2008. It consists of a ‘First Step’ which is an interactive checklist of questions that users answer. The questions relate to deciding a suitable position for ownership of the IP rights and provide answers based on a proportion of ‘Yes’ responses on a scale of one to ten. The questions look at issues such as; the importance of results for future activity; exploitation of the results; who conceived the project?; what is the purpose of the project? and why the respective industry and university parties want to fund or carry out the project?¹⁴² It also provides a ‘Second Step’ for guidance on cross-border issues regarding IP rights and ownership, negotiations, funding, confidentiality, publication and the protection and enforcement of IP rights.¹⁴³ This ‘Second Step’ is meant to be used in conjunction with ‘Fact Sheets’ in relation to each member state. The ‘Fact Sheets’ explain:

135 Ibid, Clause 23.4. Participants Agreement.

136 Ibid, Clause 22.15. Participants Agreement.

137 This group was established in 2005 and is one of the five expert groups created by CREST, the European Union’s Scientific and Technical Research Committee. This group consists of members from various European government departments, patent offices and the European Commission.

138 See Report of the CREST OMC Expert Group on Intellectual Property 92nd Cycle), *Cross-Border Collaboration between Publicly Funded Research Organisations and Industry and Technology Transfer Training* at http://ec.europa.eu/invest-in-research/pdf/download_en/crestreport.pdf.

139 Report of the CREST OMC Expert Group on Intellectual Property 92nd Cycle), *Cross-Border Collaboration between Publicly Funded Research Organisations and Industry and Technology Transfer Training*, 9.

140 Report of the CREST OMC Expert Group on Intellectual Property 92nd Cycle), *Cross-Border Collaboration between Publicly Funded Research Organisations and Industry and Technology Transfer Training*, 9.

141 See the CREST Interactive Toolkit at http://ec.europa.eu/invest-in-research/policy/rd_collab_en.htm.

142 See the First Step. CREST Interactive Toolkit at http://ec.europa.eu/invest-in-research/policy/rd_collab_en.htm.

143 See the Second Step. CREST Interactive Toolkit at http://ec.europa.eu/invest-in-research/pdf/download_en/secnd_step.pdf.

- Types of IP rights which can be obtained from universities/research institutes¹⁴⁴ in another member state¹⁴⁵ and their particular rules or requirements regarding confidentiality or publication;
- Who owns the IP rights at these universities/research institutes, the legal situation regarding IP rights derived from public funding and differences between the member states that impact on the ownership of IP rights;
- Who is entitled to negotiate IP contracts at universities/research institutes, what are the terms on which IP rights can be obtained and at what price;
- How funding affects IP ownership and exploitation and any relevant tax effects that impact on funding; and
- Specific requirements regarding IP rights, who will pay for the costs of obtaining them, who will enforce them and links to further information about IP rights.¹⁴⁶

The toolkit contains a 'Decision Guide' which proposes five ownership positions that the project parties could adopt, being:

- The university owns the IP and grants a non-exclusive licence to industry to use the IP in a specific field or geographical area;
- As above, with industry having a right to negotiate to acquire an exclusive licence to certain IP;
- As above, with industry having a right to negotiate to take ownership of the IP through an assignment;
- Industry owns the IP with university reserving a right to use IP for teaching, research and publication, subject to confidentiality conditions; or
- As above, but the university has no right to publish the IP.¹⁴⁷

Interestingly, these ownership positions have degrees of similarity to the ownership positions under the Lambert Model Agreements.

The toolkit also includes the 'Intellectual Property Right Interactive Visualisation Tool'. This software tool enables users to select two member state countries and then obtain; a comparison of legislative and legal positions between the two countries in relation to the types of IP rights available in each country; each states position on the ownership of IP rights and the negotiation of IP rights contracts; the effect of funding on IP rights contracts; confidentiality and publication; and the protection and

144 Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle) Cross-Border Collaboration Between Publicly Funded Research Organisations and Industry and Technology Transfer Training, 16.

145 Such as patents copyrights, trademarks or designs.

146 See the appendices to the Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle) Cross-Border Collaboration Between Publicly Funded Research Organisations and Industry and Technology Transfer Training, 101.

147 The CREST Cross-Border Collaboration Decision Guide, 7.

See http://ec.europa.eu/invest-in-research/pdf/download_en/introd.pdf.

enforcement of IP rights. This particular tool also links to country specific websites about government activities and national laws which are relevant to these issues.¹⁴⁸

COMMISSION OF THE EUROPEAN COMMUNITIES VOLUNTARY GUIDELINES - 2007

Collaborative guidelines were also set down by the Commission of the European Communities who in 2007 produced a Commission Staff Working Document as a response to a survey into cooperation and knowledge transfer between universities, research institutes and industry.¹⁴⁹

The Commission recommended guidelines for developing a standard approach for the management and transfer of knowledge and intellectual property regarding publically funded collaboration projects.¹⁵⁰ These guidelines have established 'good practices' for publically funded collaborative research contracts in Europe. Some of the practices emphasise personal relationships, openness and compatibility with the universities goals or 'mission' and recommends use of the CREST decision guide. They also focus on: communication in negotiations to avoid misunderstandings; a clear delineation of rights between the parties; the ownership of IP and access rights and determining the likely commercial applications of the project from the outset; identification of financial and non-financial input to a project by the respective parties; clear discussion regarding the nature and scope of a project, the protection for IP rights; the impact on each others future research; the usage of model contracts and whether model contracts will permit negotiation on background IP, ownership, confidentiality issues and access rights.¹⁵¹

The guidelines also contain general advice on non-exclusive licensing or assignments and advocates that universities and research institutions should reserve the right to publish IP results in collaborative agreements. It advises that they should only keep IP results confidential, subject to 'detailed assessment and justification'.¹⁵²

FP7 – 2007

The European Commission Seventh Framework Programme ("FP7") is an interesting example of a study which at first tried to create uniform agreements solely from guidelines, without providing a draft agreement for reference purposes. However, a group of FP7 stakeholders later created a draft template agreement to assist parties to comply with those guidelines.

FP7 commenced in 2007¹⁵³ and sought to make the European Union a dynamic competitive knowledge-based economy¹⁵⁴ through a combination of 'research, education and innovation'.¹⁵⁵ FP7

148 See the CREST country comparative questionnaire programme at <http://ec.europa.eu/invest-in-research/policy/tool.htm>.

149 The European Commission, Directorate-General for Research 2006 online survey, Draft Report on the Outcomes of the Public Consultation On Transnational Research Cooperation And Knowledge Transfer Between Public Research Organisations And Industry ('EC Knowledge Transfer Report'), 1 September 2006, at http://ec.europa.eu/invest-in-research/pdf/download_en/consult_report.pdf.

150 See Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for Universities and Other Research Institutions to Improve their Links with Industry Across Europe, 2 at http://ec.europa.eu/invest-in-research/pdf/sec2007449_en.pdf.

151 Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for Universities and Other Research Institutions to Improve their Links with Industry Across Europe, 10-12.

152 Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for Universities and Other Research Institutions to Improve their Links with Industry Across Europe, 14-15.

153 The European Union implements numerous 'framework programmes' to support research activities in the European Union of which FP7 is the latest such programme.

154 See the FP7 website at http://ec.europa.eu/research/leaflets/fp7/page_03_en.html.

155 See the FP7 website at http://ec.europa.eu/research/leaflets/fp7/page_03_en.html.

provides funding grants, in accordance with established regulations, to collaborative projects involving researchers, research centres, universities and other entities.¹⁵⁶ The regulations are mandatory upon parties who wish to obtain FP7 funding and it provides guidelines to drafting a collaborative research agreement.¹⁵⁷ The guidelines and regulations include the following:

- Resulting IP is owned by those participants who generated it. Where respective shares are unable to be ascertained, the parties shall have joint ownership,¹⁵⁸ unless they agree on a different solution. Resulting IP must be protected by the owner¹⁵⁹ or else the European Commission may take ownership.¹⁶⁰ Resulting IP can be transferred,¹⁶¹ however the Commission can prevent transfer if it is not in accordance with developing the competitiveness of the European economy.¹⁶² Commercial use will only be undertaken for valid commercial reasons;¹⁶³
- FP7 funding recipients must use and disseminate the resulting IP,¹⁶⁴ providing that the parties have made a decision about possible IP protection¹⁶⁵ and confidentiality.¹⁶⁶ Interestingly, there is no express prohibition in the regulations or the guidelines against publication of the resulting IP;
- Exclusive licences can be granted for both resulting and background IP¹⁶⁷ and the parties must have access to any parties background IP if that is necessary for them to enjoy use of the resulting IP;¹⁶⁸ and
- Licences and third party user rights can be granted if they are necessary for the project¹⁶⁹ and can be granted on a royalty free basis.¹⁷⁰ However, the Commission can reverse licences to third parties if they are deemed detrimental to European competitive advantage.¹⁷¹

In order to obtain the benefit of FP7 funding for a collaborative project,¹⁷² most participants must enter into and adhere to a ‘FP7 Model Grant Agreement’¹⁷³ and a ‘FP7 Model Consortium Agreement’.¹⁷⁴ The ‘Model Grant Agreement’ sets out the terms of funding.¹⁷⁵ The ‘Negotiation

156 See Regulation (EC) No 1906/2006 of the European Parliament and of the Council of 18 December 2006 laying down rules for the participation of undertakings, research centres and universities in actions under the Seventh Framework Programme and for the dissemination of research results (2007-2013), Official Journal of the European Union L 391/1, 30.12.2006 at <http://cordis.europa.eu/documents/documentlibrary/90798681EN6.pdf>.

157 See the Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007 at ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf.

158 Article 39. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

159 Article 44. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

160 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 10.

161 Article 42. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

162 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 11.

163 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 13.

164 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 23.

165 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 14.

166 Article 46. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

167 Article 48. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

168 Article 50. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

169 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 14.

170 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 49.

171 Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, 22.

172 Article 1. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

173 Articles 18-19. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

174 Article 24. Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007.

175 See the Model Grant Agreement at http://cordis.europa.eu/fp7/calls-grant-agreement_en.html#standard_ga.

Guidance Notes' explains how participants should apply for and negotiate with the Commission for a 'Grant Agreement'.¹⁷⁶ Responsibility for drafting the 'Consortium Agreement' lies with the project parties and they must do so in accordance with the parameters of the regulations and the requirements for FP7 funding under the 'Checklist for a Consortium Agreement for FP7 Projects'¹⁷⁷ and the 'Guide to Intellectual Property Rules for FP7 Projects'.¹⁷⁸

However, despite the availability of guidelines, the DESCAs group (which was initiated by FP7 stakeholders¹⁷⁹) has subsequently produced a simplified consortium agreement which is intended to balance all interests of all partners in an FP7 project.¹⁸⁰ It is supplied as a draft template only and DESCAs emphasises that the FP7 regulations still need to be taken into account by project parties. The template is set out in a comparative table format with the suggested clause in the left hand column and in the right hand column, an explanation of definitions and the effect of the clause. It often provides optional clauses for parties to choose with explanations as to the effect of each option¹⁸¹. The options reflect the preferences of stakeholder research organisations and universities; however the template warns that mixing the options can cause inconsistencies in the agreement.¹⁸²

DESCAs further provides four illustrative examples of the template for use in situations concerning; a small project on fair and reasonable conditions;¹⁸³ a small project based on royalty free access,¹⁸⁴ a large project based on fair and reasonable conditions;¹⁸⁵ and a large project based on royalty free access.¹⁸⁶

CREATION OF INSTITUTIONAL FRAMEWORKS

MCGAUCHIE – 2004

Finally, certain studies have examined the need for over-arching institutional frameworks which co-ordinate and facilitate the utilisation of agreements, guidelines and tools and which also develop national policies on collaborative endeavours.

In March 2004, the Australian Federal Government Department of Education, Science and Training (DEST, now DEEWR) published a report entitled *Review of Closer Collaboration between Universities and Major Publicly Funded Research Agencies* ("The McGauchie Review").¹⁸⁷ The report contained the findings of a review committee (chaired by Donald McGauchie) who convened to examine the

176 See the Negotiation Guidance Notes at ftp://ftp.cordis.europa.eu/pub/fp7/docs/negotiation_en.pdf.

177 See the Checklist for a consortium Agreement for FP7 Projects at ftp://ftp.cordis.europa.eu/pub/fp7/docs/checklist_en.pdf.

178 See the Guide to Intellectual Property Rules for FP7 Projects at ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf.

179 See the DESCAs Core Group website at <http://www.desca-fp7.eu/the-desca-core-group/>.

180 See the DESCAs Simplified FP7 Model Consortium Agreement Version 2 at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA__version__2_final.doc.

181 Clause 8.1. DESCAs Simplified FP7 Model Consortium Agreement Version 2.

182 See the DESCAs Core Group website <http://www.desca-fp7.eu/the-desca-consultation/>, Remark 4.

183 See "small project": "fair and reasonable conditions" at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA__version__2_SP_O1.doc.

184 See "small project": "royalty free access" at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA__version__1_May_2007_example2_GOV_SP_OP2.doc.

185 See "large project": "fair and reasonable conditions" at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA__version__1_May_2007_example3_GOV_LP_OP1.doc.

186 See "large project": "royalty-free access" at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA__version__1_May_2007_example4_GOV_LP_OP2.doc.

187 Department of Education, Science and Training, *Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies*, 2004. See http://www.dest.gov.au/NR/rdonlyres/42A4E965-16F1-4614-965E-11966D66D8EC/3624/issues_paper.pdf.

potential to exploit collaboration between Publicly Funded Research Agencies (“PFRAs”) and universities and possible models for closer collaboration.¹⁸⁸

The report’s review committee defined collaboration as a ‘partnership, alliance or network aimed at a mutually beneficial clearly defined outcome’¹⁸⁹ and it describes various benefits¹⁹⁰ and barriers¹⁹¹ to collaboration, its drivers and models¹⁹² and how collaboration could be enhanced¹⁹³ through co-location, networking and clustering. The committee identified what they believed were key barriers to collaboration between business and universities or PFRA bodies, including:¹⁹⁴

- Cultural differences between PFRA and universities – with a respective ‘industry- pull’ and ‘research-push’;¹⁹⁵
- Limited access to finance, the level of entrepreneurial management skills available, the predominance of a risk adverse culture and the availability of business and finance expertise;
- A lack of significant tax incentives for businesses who invest in university research and the need for specific funding if commercialisation is a requirement; and
- IP issues¹⁹⁶ including IP ownership, contractual disputes, overvaluation of IP, the need for a clear set of principles or policies for IP management¹⁹⁷ and the cost of IP protection.

The committee concluded that some institutions spend ‘significant energy on detailed up-front negotiation of [the] IP issue’.¹⁹⁸ Protracted negotiations over IP ownership and exploitation were unnecessary at the outset of a collaborative programme¹⁹⁹ and the committee found that it is only in a small number of instances that research output reaches the stage for commercialisation.²⁰⁰

The report suggests that parties should defer detailed negotiations on IP exploitation issues until specific milestones in the research have been reached, commercialisation prospects improve or the collaboration has matured so the contributions of each party can be more accurately determined.²⁰¹

In order to resolve protracted negotiations over IP ownership, the report states that the IP resulting from a collaborative project will need to be shared between the parties based on their proportional contribution to the project.²⁰²

“Intellectual property, generated as a result of collaborative research, should be divided according to the relative inputs of the various collaborators. The inputs must be measured by their demonstrable relevance to the generated property.

188 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 39.

189 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 1.

190 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 2.

191 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 2.

192 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 4.

193 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 5.

194 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 33.

195 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 33.

196 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

197 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

198 See also the UIDP’s comments on triaging “agreements into high/low probability of generating valuable IP”: Living Studies in University-Industry Negotiations, April 2006, 16.

199 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

200 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

201 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

202 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 36.

*Consideration should be given to better utilisation of existing commercial arbitration and mediation mechanisms to handle and resulting disputes”.*²⁰³

Importantly, the report also recommended that the Federal Government establish a ‘Strategic Research Council’ to provide them with policy advice about collaboration and which will implement a set of ‘National Research Priorities’;²⁰⁴ a ‘Framework’ to measure the performance of publically funded research agencies and universities in order to encourage collaboration;²⁰⁵ a ‘Collaboration Fund’ to finance collaborative projects between business and industry and universities and research institutions;²⁰⁶ and a clear set of national principles or policy for IP management.²⁰⁷

BIHECC – 2005

The McGauchie Review was followed on by a BIHECC²⁰⁸ commissioned report in 2005 to investigate ‘knowledge exchange networks’, described as:

*“...structured intermediary mechanisms for users to locate, exchange and acquire knowledge in a systematic way, with a view to development of new products, processes and services”.*²⁰⁹

The report describes the various communication channels that exist between researchers, developers and industry and made thirteen recommendations to the Australian Federal Government’s Productivity Commission’s Review of Public Support for Science and Innovation,²¹⁰ which included:

- Establishing a separate source of public funding to support knowledge transfer and pre-commercialisation activities of universities;²¹¹
- Better incentives for pre-commercialisation collaboration, the early stages of commercialisation and for exploiting publicly funded research and development in order to increase collaboration and knowledge transfer;²¹²
- Supporting knowledge brokering infrastructure to link up institutions and industry and supporting knowledge exchange networks between industry, universities and research;²¹³ and
- Publically funding science and innovation to provide longer term funding for research and knowledge transfer.²¹⁴

203 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 37.

204 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 15.

205 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 23.

206 Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 26.

207 Which they believed were not being met by the 2001 National Principles of IP Property Management for Publicly Funded Research. Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, page xi.

208 The Business, Industry and Higher Education Collaboration Council (BIHECC) was established in 2004 and provides advice to the Australian Federal Government Minister for Education, Employment and Workplace Relations on ways to increase collaboration between the higher education sector and other public and private business, industry, community and educational organisations.

209 Dr. J. Howard 2005, Knowledge Exchange Networks in Australia’s Innovation System: Overview and Strategic Analysis, Howard Partners Pty Ltd, at http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/ken.htm.

See the Australian Federal Government’s Productivity Commission’s Review of Public Support for Science and Innovation at <http://www.dest.gov.au/NR/rdonlyres/E929FA3D-0F29-40E4-A53B-65715083C54D/8489/KENReportFinal.pdf>.

210 Productivity Commission 2007, Public Support for Science and Innovation, Research Report, Productivity Commission, Canberra. See http://www.pc.gov.au/__data/assets/pdf_file/0016/37123/science.pdf.

211 Recommendation 1. Public Support for Science and Innovation.

212 Recommendation 2. Public Support for Science and Innovation.

213 Recommendation 5. Public Support for Science and Innovation.

The report did not call for an institutional framework to implement these recommendations, but some of the recommendations are ones which may need to be created and administered by such a framework, such as; uniform national approaches to IP ownership and licensing;²¹⁵ public policies which balance IP protection for publicly funded research outcomes;²¹⁶ and establishing a set of best practice principles for collaboration between industry, universities and PFRAs.²¹⁷

DAVID AND SPENCE – 2003

In what has become a landmark report in the area of e-Research, *Towards institutional infrastructures for e-Science: the scope of the challenge*²¹⁸ advocates the creation of institutional frameworks for streamlining the agreement process in collaborative projects.

This report released in 2003 examined the legal issues and processes associated with collaborative projects in the U.K. It identified that collaborative projects are often organised on an informal basis, rather than being defined by a written signed agreement²¹⁹ and that as a consequence may not be enforceable at law.²²⁰ Furthermore, the report goes on to state that standard form contracts are not effective in providing what the parties want in a collaborative project or in making allowances for actual research practices or in establishing a degree of trust between project parties.²²¹

The report suggests that standard form contracts exacerbate the problems raised by informal collaborations, because such contracts rarely re-set the terms of the agreement each time the project circumstances change²²² and cannot include subsequent parties to the contract without having to re-make the entire agreement.²²³ Other problems associated with standard form contracts include:

- An increased legal risk for the parties because standard form contracts are often used without forethought as to their appropriateness to the project at hand or without reference to appropriate legal advice;²²⁴
- Standard form contracts may impede the commencement of projects because the parties are unable to choose between each others standard form contracts;²²⁵
- Allowing industry parties to exercise unequal bargaining power or pressure over and against the interests of university or research parties.²²⁶

Furthermore, standard form contracts set the parameters of a collaborative project before the project commences, which acts against establishing relationships of trust between the parties²²⁷ and may have

214 Recommendation 13. Public Support for Science and Innovation.

215 Recommendation 7. Public Support for Science and Innovation.

216 Recommendation 7. Public Support for Science and Innovation.

217 Recommendation 11. Recommendation 7. Public Support for Science and Innovation.

218 By Paul A. David and Michael Spence. See *Towards institutional infrastructures for e-Science: the scope of the challenge* at <http://www.oii.ox.ac.uk/research/publications.cfm>.

219 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 38.

220 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 38.

221 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 8-9.

222 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 38.

223 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 38.

224 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 55.

225 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 55.

226 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 55.

227 *Towards institutional infrastructures for e-Science: the scope of the challenge*, 10.

the effect of stifling project research practices.²²⁸ Whilst legal advisors may have the ability to draft contracts on the behalf of parties, they are not in a position to comprehend all of the issues for all parties (only for the party which they represent) and cannot objectively balance and reconcile the contending interests and risks for both universities and industry.²²⁹

This report recommends that a public agency be established which will co-ordinate and facilitate solutions²³⁰ and whose main task will be to provide a menu of ready made agreement clauses. These clauses can be selected by parties to the project to resolve specific problems in their collaboration project agreement.²³¹ Because parties select their own clauses, the agreement is built ‘from the ground up’, with clauses reflecting each parties true project intentions and avoids problems caused by standard template contracts.

The report proposes that a public agency (known as the ‘Advisory Board on Collaboration Agreements’) be established which will produce, evaluate and update standard contractual clauses. The clauses are intended to apply to various types of problems or situations that arise in collaborative research projects²³² and will be able to be assembled into a variety of alternating collaboration agreements.²³³ The advisory board will also determine and draft a set of underlying principles for their functionality and applicability.²³⁴

EUROPEAN RESEARCH AREA EXPERT GROUP KNOWLEDGE SHARING RECOMMENDATIONS – 2008

The European Research Area Expert Group recently issued a report²³⁵ which merges the concepts of policies, guidelines and model agreements in order to produce a European wide approach for a knowledge sharing system between publically funded research organisations (“PROs”) and industry.²³⁶

The report recommends that the Commission of the European Communities²³⁷ issues a Recommendation to European Union member states to implement certain strategies in order to facilitate the sharing of knowledge generated by public funding and to ensure that industry and PRO collaboration agreements are ‘put into place more quickly and smoothly and to reduce transaction cost’.²³⁸

228 Towards institutional infrastructures for e-Science: the scope of the challenge, 54.

229 Towards institutional infrastructures for e-Science: the scope of the challenge, 30.

230 Towards institutional infrastructures for e-Science: the scope of the challenge, 52.

231 Towards institutional infrastructures for e-Science: the scope of the challenge, 28. Survey participants showed some agreement for the creation of a government agency to develop and maintain a master database of standard clauses for research contracts, issue guidelines and oversee licensing practices, oversee licensing practices. See Figure 12. Ways to Improve the Negotiation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 56.

232 Towards institutional infrastructures for e-Science: the scope of the challenge, 51.

233 Towards institutional infrastructures for e-Science: the scope of the challenge, 53.

234 Towards institutional infrastructures for e-Science: the scope of the challenge, 41 and 53. To date, the U.K. government has not established such an agency.

235 The Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 2008 at http://ec.europa.eu/research/era/pdf/era-gp-eg4_en.pdf. This is the Final Report of one of seven Expert Groups established by the DG Research of the European Commission as a follow-up to the Green Paper, ‘The European Research Area: New Perspectives’, published in April 2007.

236 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 13.

237 See also The Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for Universities and Other Research Institutions to Improve their Links with Industry Across Europe.

238 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 26.

Whilst supportive of the Commission's voluntary guidelines for PROs to improve their links with industry,²³⁹ the report recommends the creation of guidelines that are aimed at and adhered to by both PROs and industry²⁴⁰ combined with relational frameworks where each party focuses on 'realistic expectations of what might be achieved'²⁴¹ in a collaboration. Other relevant strategies include:

- A voluntary 'Knowledge Sharing Code of Practice' and a model form of IP Policy,²⁴² which will operate as a 'reference point for those collaborating or intending to collaborate with European PROs and for European PROs collaborating or hoping to collaborate with industry'.²⁴³ This code and policy will 'raise the awareness of European PROs of the need for them to engage in knowledge sharing and to manage knowledge effectively, to set out a set of minimum standards which European PROs may adopt on a voluntary basis and, by doing so, to facilitate interaction between European PROs and industry',²⁴⁴
- The training of professional staff in technology transfer to ensure that collaborations happen within a shorter timeframe;²⁴⁵
- The harmonisation of funding conditions in relation to ownership and exploitation of intellectual property, so that PROs can negotiate appropriate terms for assignment or licensing of IP with industry;²⁴⁶ and
- The widespread adoption of model agreements and guidelines by PROs and industry as exemplified by the Lambert Review agreements and toolkits.

239 See also The Commission of the European Communities, Commission Staff Working Document Voluntary Guidelines for Universities and Other Research Institutions to Improve their Links with Industry Across Europe.

240 "...the guidelines are targeted at PROs, but it takes two or more to form a contract. In the context of practices relating to the ownership of, and access to, intellectual property rights financial, human and intellectual input, the exploitation of intellectual property rights, confidentiality, the enforcement of intellectual property rights and relationship management it is essential that all parties (be they PROs or industry) abide by the same practices; PROs cannot implement these guidelines unless industry is also willing to implement them". Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 13.

241 "Engaging in knowledge sharing is a contact sport and should not be a war. PROs need to appreciate that industry may have to put a lot of effort in before the results of the research are ready to be exploited and the intellectual property created by PROs may not have the immediate value the PRO supposes. Neither PROs nor industry should indulge in negotiations for the sake of winning every point, no matter how unimportant; both should have realistic expectations of what might be achieved". Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 13.

242 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 26.

243 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 26.

244 The proposed code must at least address the following issues: "A defined position of responsibility for overseeing knowledge sharing activities within the PRO; A clear position on the ownership of intellectual property rights created by PRO staff; Procedures for identifying and notifying intellectual property rights capable of commercial application; A mechanism for assessing the potential interest in intellectual property rights capable of commercial application, taking account of social, economic and enforcement conditions that prevail in the relevant territory and sector; The systematic use of records of the creation of intellectual property rights, such as laboratory notebooks; Mechanisms to deal with actual and potential conflicts of interest; A policy regarding publication of the results of research, taking into account situations when publication must be or should be delayed or withheld, and for how long, and, if applicable, clear delineation between the intellectual property rights owned by staff and those owned retained by the PRO; Clear lines of responsibility for procedure and policy management; Appropriate and clear timescales in respect of knowledge sharing and knowledge management procedures; A clear description of the rights and responsibilities of staff in relation to third party intellectual property rights. A clear description of the rights and responsibilities of students in relation to intellectual property rights created by students, and of staff in relation to those intellectual property rights; and a requirement to identify the PROs contribution to knowledge wherever possible, for example within academic publications, and as the address for service for inventors employed by the PRO in any patent applications". Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 42 to 44.

245 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 26.

246 Report of the European Research Area Expert Group: Knowledge Sharing in the European Research Area, 27.

LEGAL FRAMEWORK FOR e-RESEARCH ROUNDTABLE - 12-13 JUNE 2008

As demonstrated from our examination of the survey and various Australian and overseas studies, many policies, frameworks and practical tools have been proposed to streamline the agreement process.

Despite some differences of approach, these proposals have a common goal; to produce a high degree of clarity between parties as to their respective contributions, duties and entitlements in a collaborative project.²⁴⁷ This common goal and the views, issues, frameworks, policies and tools raised and suggested by the survey report and the studies discussed previously were recently examined in a Roundtable held by the Queensland University of Technology Faculty of Law.²⁴⁸

Prior to the Roundtable, the Review of the National Innovation System received over 600 submissions from stakeholders regarding the future of innovation in Australia. Three of those submissions from the Legal Framework for e-Research Project,²⁴⁹ the Group of Eight Universities²⁵⁰ and the CSIRO²⁵¹ addressed issues regarding the streamlining of collaborative research agreements. The Group of Eight submission specifically examined:

- Disputes over intellectual property ownership and licensing and rights in relation to background IP;
- The seeking of unreasonable warranties and indemnities;
- The right to disseminate research results in a timely manner;
- “No conflict of interest” clauses;
- The scope of suspension and termination rights;
- Respect for moral rights.

These issues were further discussed by the Roundtable.

The proposals from the Roundtable suggested:

- A set of national policies on collaboration and knowledge sharing which underpins e-Research;

247 As certain survey participants commented “Problems often arise because the parties do not properly communicate and therefore they are not aware that they may have different expectations” and “Clarity between partners at the outset reduces the potential for later disagreement. The agreement need not be complex. Undue complexity is the major disincentive to developing formal agreements”. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 38 and 51.

248 The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

249 See the Legal Framework for e-Research Project’s submission to the National Innovation Review, Streamlining Negotiation and Contracting in Collaborative Research Environments at the National Innovation Review website at http://www.innovation.gov.au/innovationreview/Documents/428A-Brian_Fitzgerald_and_Anthony_Austin.pdf.

250 See the Group of Eight’s submission to the National Innovation Review, In the Interests of Innovation: Time for a New Approach to Negotiating Research Agreements between the Commonwealth and Australian Universities at the National Innovation Review website at http://www.innovation.gov.au/innovationreview/Documents/372-Group_of_Eight_Supporting.pdf.

251 See the CSIRO’s submission to the National Innovation Review, Supplementary Submission from the CSIRO to the National Innovation System Review: Agreements Between the Australian Government and Publicly Funded Research Agencies at <http://www.innovation.gov.au/innovationreview/Documents/217A-CSIRO.pdf>.

- A clear set of national principles or policies regarding IP ownership and licensing for collaborative projects;²⁵²
- Funding policies and conditions need a degree of uniformity across all funding agencies for collaborative projects, which would then create a national system of funding agreements.²⁵³ Uniform policies would also ensure that parties in negotiations with funding agencies will provide collaboration agreements that are in line with funding conditions;²⁵⁴
- Parties to collaborative projects need to undertake realistic assessments of risk when negotiating collaboration agreements. Many collaboration agreements are often delayed because of protracted negotiations about issues that could otherwise be assumed as a reasonable risk, about issues such as background IP and warranties and indemnities;²⁵⁵
- Commensurate with the realistic assumption of risk, parties must be able to distinguish between vital objectives (whether the project will generate valuable IP or not) and irrelevancies²⁵⁶ and to devote time to complex collaborations instead of every several single transaction using up the resources of the parties.²⁵⁷ This approach was supported by survey participants who advocated the ‘triaging’ of collaborative agreements for negotiation into those agreements that need significant negotiation and those which do not.²⁵⁸ Practically speaking, agreements of low risk and value to parties could be reduced to one to two page templates, instead of being made subject to detailed negotiation and review;²⁵⁹
- The need for a statement of national principles and guidelines to assist the implementation of a database of clauses and/or template agreements which will lead to the creation of a single national best practice resource;
- The utilisation of a ‘terms sheets’ for the agreement of key principles between the parties for specific types of transactions,²⁶⁰ which provide a plain English understanding of each party’s respective ideas, objectives, roles, commitments and expectations regarding a collaborative project, before the parties begin negotiations for an agreement;

252 Reflective of the McGauchie Review. See Department of Education, Science and Training, Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies, 2004, 36.

253 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

254 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

255 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

256 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

257 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

258 Figure 12. Ways to Improve the Negotiation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 56.

259 An example of this is the CSIRO’s FastTrack contracting system (<http://www.csiro.au/org/ps9l.html>) which focuses on simple non-disclosure agreements, testing agreements or postgraduate scholarships agreements. See the CSIRO example postgraduate scholarship agreement at <http://www.csiro.au/files/files/p2za.pdf>.

260 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

- Trust must be established between parties through a ‘pre-agreement space’, where the parties are required to meet several times to discuss a potential collaboration, before they even begin to negotiate agreement terms;²⁶¹
- Standard template agreements for use in collaborative projects²⁶² that are intended to shorten negotiation timeframes and to remove delays caused by each party dissecting each other’s standard agreements.²⁶³ This can be best exemplified by the Lambert Agreements or standard agreements which can be customised to the intentions and purposes of the collaborative parties.²⁶⁴ However, it is important to remember that it is likely that there will never be a template agreement that will be designed to suit every collaborative situation. Template agreements can only be utilised as a starting point that saves a certain amount of negotiation time, not as the reduction of the agreement process to a software tool, and must be accompanied by guidance notes, decision guides or other similar material which forces the parties to address all issues required for a collaboration agreement;²⁶⁵
- The assembly and formation of agreements from a database of standard clauses. This was proposed by the UIDP TurboNegotiator project and was also viewed by survey participants as a practical tool for streamlining.²⁶⁶ If this idea was encapsulated in the form of a national database of standard clauses, it may help to create an organic system of uniform agreements in the Australian collaboration environment;
- Practical tools and policies will be of limited use if researchers, research managers and other parties do not receive education and training about these tools, policies and the basics of IP and contractual law.²⁶⁷ The majority of survey participants were in favour of an increase in educational materials, guidelines and skills training for knowledge engagement practitioners.²⁶⁸ Commentators have advocated the creation of a specific tertiary level course in technology transfer, which would instruct how agreements for collaborative projects can be streamlined.²⁶⁹ Education and training in itself may also help to engender feelings of

261 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

262 68% of participants ‘agreeing’ or ‘strongly agreeing’. See Figure 6. Ways to Streamline the Documentation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 59-61.

263 Also known as the ‘battle of the forms’. As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

264 This was an option favoured by survey participants: 89% of participants ‘agreeing’ or ‘strongly agreeing’. See Figure 6. Ways to Streamline the Documentation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 59-61. Survey participants also showed a preference for; template agreements which allowed the details on collaborative projects to simply be added on (87% of participants ‘agreeing’ or ‘strongly agreeing’); licensing agreements based on the free open source software model (75% of participants ‘agreeing’ or ‘strongly agreeing’) and simple confidentiality agreements (86% of participants ‘agreeing’ or ‘strongly agreeing’).

265 As exemplified by the Lambert Agreements and as discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

266 76% of participants ‘agreeing’ or ‘strongly agreeing’. See Figure 6. Ways to Streamline the Documentation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 59-61.

267 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

268 71% of participants ‘agreeing’ or ‘strongly agreeing’. See Figure 12. Ways to Improve the Negotiation Process. The Legal Framework for e-Research Project’s Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 56.

269 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

participation and vested interests in these tools and polices from industry, universities and research;²⁷⁰

- Collaborations are often frustrated because there is confusion within parties about their project objectives or because they do not identify who is authorised to negotiate with other interests.²⁷¹ It is important that parties have established frameworks for their own internal communication and decision processes,²⁷² have resolved any internal issues regarding IP ownership²⁷³ and have a clear intellectual property policy that balances issues of IP ownership, access, cost recovery and return on investment²⁷⁴ before they enter into a collaborative agreement. The survey participants advocated a working rule that intellectual property generated in collaborative research should be divided according to relative inputs of the parties, measured by demonstrable relevance to the generated property;²⁷⁵
- The re-invigoration of existing institutional frameworks to train negotiators to balance and resolve issues from the position of a neutral adjudicator in proposed collaborative agreements. Such frameworks would co-ordinate the use of practical tools, polices and supporting materials at either a state or federal level or both. This would be supported by a national cross-sectoral legal advisory group that designs legal and policy frameworks and aligns appropriate methodologies for the streamlining of collaborative research agreements.

CONCLUSION

The survey results, the studies and the roundtable raise many questions and issues for consideration. As we have seen from the survey report, it can take up to 8 months to conclude a formal agreement because legal procedures and norms for formalising such agreements can delay and even stifle collaborative projects.

The prolonged negotiation of agreement issues, such as the ownership and access rights for resulting intellectual property, reach through rights into each parties background IP and the extent of indemnities and warranties²⁷⁶ often leads to delays and complications that undermine trust and the willingness of parties to collaborate.

It is hoped that the issues discussed in this chapter may be considered by the Australian Government as part of the Review of the National Innovation System and that they can add to the valuable work being done by technology transfer officers, research managers, researchers and legal advisors to streamline the agreement processes for collaborative projects.

270 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

271 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

272 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

273 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

274 Figure 12. Ways to Improve the Negotiation Process. The Legal Framework for e-Research Project's Report, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results, 56.

275 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

276 As discussed at The Legal Framework for e-Research Roundtable Workshop: Streamlining Collaboration in an e-Research World, held at the Queensland University of Technology 12-13 June 2008.

Universities, industry and researchers need to be able to shorten the timeframe for formalising collaborative research agreements. Parties want to collaborate on innovative projects at the time when their interest, motivation and utilisation of resources will be at its height.

Whilst e-Research is an excellent technology for collaborative projects, the technology alone will not enable collaboration to occur. If collaborative innovation is to prosper, then what is required in Australia is the synchronised and institutional development of policies, relational frameworks and practical tools for streamlining collaborative e-Research project agreements.²⁷⁷

²⁷⁷ See the Legal Framework for e-Research Project's submission to the National Innovation Review, Streamlining Negotiation and Contracting in Collaborative Research Environments at the National Innovation Review website at http://www.innovation.gov.au/innovationreview/Documents/428A-Brian_Fitzgerald_and_Anthony_Austin.pdf.

UNDERSTANDING THE LEGAL IMPLICATIONS OF DATA SHARING, ACCESS AND REUSE IN THE AUSTRALIAN RESEARCH LANDSCAPE²⁷⁸

Professor Anne Fitzgerald,²⁷⁹ Kylie Pappalardo,²⁸⁰
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INTRODUCTION

In today's world, researchers are increasingly involved in data-intensive research projects that cut across geographic and disciplinary borders.²⁸² Quality research now often involves virtual communities of researchers participating in large-scale web-based collaborations, opening their early-stage research to the research community in order to encourage broader participation and accelerate discoveries.²⁸³ The result of such large-scale collaborations has been the production of ever-increasing amounts of data. In short, we are in the midst of a data deluge.²⁸⁴

Accompanying these developments has been a growing recognition that if the benefits of enhanced access to research are to be realised, it will be necessary to develop the systems and services that enable data to be managed and secured.²⁸⁵ It has also become apparent that to achieve seamless access to data it is necessary not only to adopt appropriate technical standards, practices and architecture, but also to develop legal frameworks that facilitate access to and use of research data.²⁸⁶

This paper provides an overview of the current research landscape in Australia as it relates to the collection, management and sharing of research data. The paper then explains the Australian legal regimes relevant to data, including copyright, patent, privacy, confidentiality and contract law. Finally, this paper proposes the infrastructure elements that are required for the proper management of legal interests, ownership rights and rights to access and use data collected or generated by research projects.

²⁷⁸ This chapter is derived from the publication: Dr Anne Fitzgerald and Kylie Pappalardo (with the assistance of Professor Brian Fitzgerald, Anthony Austin and others), *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context* (2007) OAK Law Project <<http://www.oaklaw.qut.edu.au/reports>>.

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²⁸² International Council for Science (ICSU), *Scientific Data and Information: A report of the CSPR Assessment Panel* (2004) 7; see also Dr Anne Fitzgerald and Kylie Pappalardo, *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context* (2007) 6, OAK Law Project <<http://www.oaklaw.qut.edu.au/reports>> (hereinafter A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007)).

²⁸³ A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 6.

²⁸⁴ In an interview with Richard Poynder, Tony Hey said, 'We are going to be deluged with data in almost every field': Richard Poynder, Interview with Tony Hey 'A Conversation with Microsoft's Tony Hey' Open and Shut? (Blog, 12 December 2006) <<http://poynder.blogspot.com/2006/12/conversation-with-microsofts-tony-hey.html>> at 5 May 2008.

²⁸⁵ A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 6-7.

²⁸⁶ A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 9.

THE AUSTRALIAN DATA LANDSCAPE

The last few years have seen a revolution in the way that research data is produced, stored, analysed and disseminated.²⁸⁷ Now, vast amounts of data can be generated and accessed through distributed networks online. In response to the enormous growth in data collection and generation in recent years, there has been increased interest from Australian government and research sectors in developing systems to manage data and facilitate access to research outputs.²⁸⁸ This section provides a brief overview of some of these initiatives.

GOVERNMENT INITIATIVE

In May 2004, then Prime Minister John Howard announced that the Australian Government would establish quality and accessibility frameworks for publicly funded research as part of the *Backing Australia's Ability – Building Our Future through Science and Innovation* package.²⁸⁹ The Accessibility Framework for Publicly Funded Research was designed to manage research information, outputs and infrastructure in order to enable them to be more readily discovered, accessed and shared. It aims to provide a regulatory environment that both enables and encourages the population of digital repositories in order to provide better access to information.²⁹⁰

A project funded under the *Backing Australia's Ability* package is the National Collaborative Research Infrastructure Strategy (NCRIS). The NCRIS capability known as Platforms for Collaboration supports technological platforms that enhance researchers' ability to generate, collect, share, analyse, store and retrieve information.²⁹¹ A central component of Platforms for Collaboration is the Australian eResearch Infrastructure Council (AeRIC), established by the federal Government's Department of Education Science and Training (DEST)²⁹² upon the recommendation of the Australian Government e-Research Coordinating Committee.²⁹³ In the report, *An Australian e-Research Strategy and Implementation Framework*, the eResearch Coordination Committee had recommended that:

the Government convenes a working group to develop an Australian Research Data Strategy that will support a standardised national approach to the management of data collected, generated and used by the Australian research community.²⁹⁴

This recommendation was endorsed in the NCRIS Platforms for Collaboration Final Investment Plan.²⁹⁵

287 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 3.

288 See for example, National Collaborative Research Infrastructure Strategy (NCRIS) Committee, *Submission to the Review of the National Innovation System (NIS)* (April 2008) and AeRIC, *Closing the Gap: Connecting Researchers to the Innovation System Through Sustained Investments in Collaborative Research Infrastructure*, *Submission to the Review of the National Innovation System (NIS)* (April 2008).

289 See <http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/> and <<http://backingaus.innovation.gov.au/>> at 24 April 2008.

290 See <http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/> at 24 April 2008. See also A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 3.

291 <http://www.ncris.dest.gov.au/capabilities/collaborative_investment_plan_platforms.htm> at 24 April 2008; see also, National Collaborative Research Infrastructure Strategy (NCRIS) Committee, *Submission to the Review of the National Innovation System (NIS)* (April 2008).

292 Since the change of Federal Government, AeRIC now falls under the auspices of the Department of Innovation, Industry, Science and Research (DIISR): see Dr Rhys Francis on behalf of Professor Tom Cochrane, AeRIC submission to the National Innovation System (NIS) Review – coversheet, 30 April 2008.

293 In October 2004, the Australian Government committed to the formation of an overarching e-Research Coordinating Committee, which would provide expert advice to the Government on a strategic framework for the development of Australia's e-Research capacity: see for example, Cathrine Harboe-Ree, 'eResearch Coordinating Committee' (CAUL Presentation, September 2005) <<http://www.caul.edu.au/caul-doc/caul20052eresearch.ppt>> at 3 May 2008.

294 Final Report of the e-Research Coordinating Committee, *An Australian e-Research Strategy and Implementation Framework*, DEST, (April 2006) 55.

AeRIC's responsibilities were established at its inaugural meeting on 23 July 2007, as:

ensur[ing] that world class services and expertise are identified, developed and delivered nationwide in ways that support effective e-Research within and across all research disciplines...includ[ing] services and expertise relating to: data capture, management, retention, publication, discovery and reuse...²⁹⁶

AeRIC undertakes an important coordination role in relation to the NCRIS Platforms for Collaboration infrastructure.²⁹⁷ It is tasked with ensuring the integration and sustainability of research infrastructure and services capitalising on the Government's substantial investments in NCRIS capabilities.²⁹⁸

In October 2007, DEST and AeRIC released the report, *Towards the Australian Data Commons*,²⁹⁹ proposing the establishment of the Australian National Data Service (ANDS). A similar proposal had previously been put forward in the Platforms for Collaboration Final Investment Plan as a means of addressing the recommendations of the Prime Minister's Science Engineering and Innovation Council (PMSEIC) Data for Science Working Group³⁰⁰ in its December 2006 report:

Recommendation 1: That Australia's government, science, research and business communities establish a nationally supported long-term strategic framework for scientific data management, including guiding principles, policies, best practices and infrastructure;

Recommendation 6: That the principle of open equitable access to publicly-funded scientific data be adopted wherever possible and that this principle be taken into consideration in the development of data for science policy and programmes. As part of this strategy, and to enable current and future data and information resources to be shared, mechanisms to enable the discovery of, and access to, data and information resources must be encouraged; and

Recommendation 9: That in the context of developing the strategic framework for scientific data management, Australia's intellectual property approaches be checked to ensure they do not impede the sharing of data.³⁰¹

ANDS offers common services in support of research data collections and integration infrastructure to facilitate sharing and reuse of data.³⁰² The ANDS Utility Program will provide a national registry covering issues such as data access policies, usage rights and licensing requirements associated with

295 See <www.ncris.dest.gov.au/capabilities/documents/PfC_Investment_Plan_Summary_pdf.htm> at 24 April 2008. The NCRIS Committee accepted the Final Investment Plan on 13 April 2007: <<http://www.pfc.org.au/bin/view/Main/PlatformsHistory>> at 24 April 2008.

296 See <<http://www.pfc.org.au/bin/view/Main/AeRIC>> at 24 April 2008.

297 AeRIC, Closing the Gap: Connecting Researchers to the Innovation System Through Sustained Investments in Collaborative Research Infrastructure, Submission to the Review of the National Innovation System (NIS) (April 2008) 9.

298 AeRIC, Closing the Gap: Connecting Researchers to the Innovation System Through Sustained Investments in Collaborative Research Infrastructure, Submission to the Review of the National Innovation System (NIS) (April 2008) 9.

299 AeRIC, *Towards the Australian Data Commons: A proposal for an Australian National Data Service*, DEST (October 2007).

300 See <www.ncris.dest.gov.au/capabilities/documents/PfC_Investment_Plan_Summary/pdf.htm> at 24 April 2008. The NCRIS Committee accepted the Final Investment Plan on 13 April 2007: <<http://www.pfc.org.au/bin/view/Main/PlatformsHistory>> at 24 April 2008.

301 PMSEIC Working Group on Data for Science, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science* (December 2006) 11-12.

302 AeRIC, *Towards the Australian Data Commons: A proposal for an Australian National Data Service*, DEST (October 2007) 4.

data access.³⁰³ It will also provide template data access policies that can be adapted for discipline specific needs.³⁰⁴

At an AeRIC meeting on 22 February 2008, it was reported that a contract was signed in November 2007 with Monash University to conduct the ANDS Establishment Project through to the end of June 2008.³⁰⁵ Under this agreement, Monash University will work with the Australian National University (ANU), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and other relevant parties to develop the necessary elements to move to full ANDS implementation from July 2008.³⁰⁶

RESEARCH PROJECTS

In addition to the larger scale initiatives described above, there is an abundance of smaller projects that focus on the collecting and compiling of research data in a specific scientific field. One example is the Integrated Marine Observing System (IMOS), which is coordinated by staff at the University of Tasmania supported by CSIRO Marine and Atmospheric Research.³⁰⁷ IMOS is a nation-wide collaborative program designed to observe the oceans around Australia, including the coastal oceans and the 'bluewater' open oceans.³⁰⁸ One of the five IMOS research 'nodes' is the Great Barrier Reef Ocean Observing System (GBROOS), which is an observation network covering the eastern Coral Sea and the Great Barrier Reef.³⁰⁹ Among other things, GBROOS will monitor the effect of rising ocean temperatures on the incidence of coral bleaching over the next decade.³¹⁰ GBROOS includes the world's first large scale reef-based Internet Protocol (IP) network.³¹¹ Data generated by the IMOS project will be made available to researchers through the electronic Marine Information Infrastructure (eMII) located at the University of Tasmania.³¹² After defining specific data streams, IMOS will eventually develop end-to-end protocols, standards and systems to join the related observing systems into a unified data storage and access framework.³¹³ Data will be archived within the Australian Ocean Data Network (AODN), which is a distributed data storage and discovery network based at leading Australian marine research facilities.³¹⁴ Data storage and retrieval in IMOS is designed to be interoperable with other national and international programs.³¹⁵ IMOS is an NCRIS funded project.³¹⁶

Another example is the Pacific and Regional Archive for Digital Sources in Endangered Cultures (PARADISEC).³¹⁷ PARADISEC offers a facility for digital conservation and access for endangered materials from the Pacific region, defined broadly to include Oceania and East and Southeast Asia.³¹⁸ PARADISEC is also a national repository for recorded material relating to indigenous cultures of

303 AeRIC, Towards the Australian Data Commons: A proposal for an Australian National Data Service, DEST (October 2007) 36.

304 AeRIC, Towards the Australian Data Commons: A proposal for an Australian National Data Service, DEST (October 2007) 36.

305 AeRIC Executive Director's Report, Meeting #5 (22 February 2008) <<http://www.pfc.org.au/bin/view/Main/AeRIC-5>> at 24 April 2008.

306 AeRIC Executive Director's Report, Meeting #5 (22 February 2008) <<http://www.pfc.org.au/bin/view/Main/AeRIC-5>> at 24 April 2008.

307 <<http://imos.org.au/about.html>> at 20 May 2008.

308 <<http://imos.org.au>> at 20 May 2008.

309 <[http://imos.org.au/newsitem.html?&tx_ttnews\[tt_news\]=64&tx_ttnews\[backPid\]=2&cHash=d32f9070cb](http://imos.org.au/newsitem.html?&tx_ttnews[tt_news]=64&tx_ttnews[backPid]=2&cHash=d32f9070cb)> at 20 May 2008.

310 <<http://imos.org.au/gbroos.html>> at 20 May 2008.

311 <[http://imos.org.au/newsitem.html?&tx_ttnews\[tt_news\]=64&tx_ttnews\[backPid\]=2&cHash=d32f9070cb](http://imos.org.au/newsitem.html?&tx_ttnews[tt_news]=64&tx_ttnews[backPid]=2&cHash=d32f9070cb)> at 20 May 2008.

312 <<http://imos.org.au/about.html>> at 20 May 2008, see also <<http://imos.org.au/emii.html>> at 20 May 2008.

313 <<http://imos.org.au/emii.html>> at 20 May 2008.

314 <http://imos.org.au/data_access.html> at 20 May 2008.

315 <<http://imos.org.au/emii.html>> at 20 May 2008.

316 <<http://imos.org.au/about.html>> at 20 May 2008.

317 <<http://paradisec.org.au/home.html>> at 25 April 2008.

318 <<http://www.paradisec.org.au/about.html>> at 25 April 2008.

regions in and around Australia. PARADISEC has established a framework for accessing, cataloguing and digitising audio, text and visual material, and preserving digital copies.³¹⁹ The project has been funded by the Universities of Sydney, Melbourne and New England, ANU, the Australian Research Council (ARC) and GrangeNet.³²⁰

FUNDING POLICIES

Australian funding bodies have taken an interest in the management of and provision of access to research data. In December 2006, the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) announced the introduction of open access guidelines for published papers and data resulting from funded research projects, effective 2008. Both policies encouraged researchers to:

Consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository [because in order to] maximise the benefits from research, findings need to be disseminated as broadly as possible to allow access by other researchers and the wider community.³²¹

The same guidelines are contained in the ARC *Discovery Project Funding Rules for funding commencing in 2009*,³²² and the NHMRC *Project Grants Funding Policy for funding commencing in 2009*.³²³

The introduction of open access requirements for data resulting from funded research projects was supported by the Australian Government Productivity Commission in its 2007 report, *Public Support for Science and Innovation*.³²⁴ The Productivity Commission commended the steps taken by the ARC and NHMRC to promote open access to the results of the projects they fund. However, the Productivity Commission considered that in light of experience in the United States voluntary compliance was likely to be low. Consequently, the Productivity Commission considered that the aim of free and open access to publicly-funded research results would be better achieved by the progressive introduction of mandatory open access requirements.³²⁵

SURVEYS OF RESEARCHERS

While the benefits of data sharing have been widely recognised by government agencies and scientific organisations, there is a degree of reluctance among researchers to embrace data sharing practices. Recent surveys of the Australian research community provide indications of current attitudes and practices in relation to data ownership and sharing.

319 <<http://www.paradisec.org.au/about.html>> at 25 April 2008.

320 <<http://www.paradisec.org.au/about.html>> at 25 April 2008.

321 Australian Research Council (ARC), *Discovery Projects Funding Rules for funding commencing in 2008*, [1.4.5.1] and [1.4.5.3] <http://www.arc.gov.au/pdf/DP08_FundingRules.pdf> at 25 April 2008; National Health and Medical Research Council (NHMRC), *Project Grants Funding Policy for grants commencing in 2008*, [16.2]. See also A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 4.

322 Australian Research Council (ARC), *Discovery Projects Funding Rules for funding commencing in 2009*, [4.4.5.1] and [4.4.5.3] <http://www.arc.gov.au/ncgp/dp/dp_fundingrules.htm> at 25 March 2008.

323 National Health and Medical Research Council (NHMRC), *Project Grants Funding Policy for funding commencing in 2009*, [16.2] <<http://www.nhmrc.gov.au/FUNDING/apply/granttype/projects/index.htm>> at 25 March 2008.

324 Productivity Commission, *Public Support for Research and Innovation*, Research Report (2007) 240, 243 <<http://www.pc.gov.au/study/science/docs/finalreport>> at 25 April 2008.

325 Productivity Commission, *Public Support for Research and Innovation*, Research Report (2007) 240, 243 <<http://www.pc.gov.au/study/science/docs/finalreport>> at 25 April 2008. See also A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 4.

The NCRIS Platforms for Collaboration Data Management Survey conducted in September and October 2006 surveyed key stakeholders in the management of research data throughout Australia.³²⁶ The results of the survey demonstrated that while some researchers are aware of the complexity of the issues involved in data ownership, most have only a rudimentary understanding.³²⁷ Further, the survey made clear that while there is an awareness of the potential benefits of data sharing within the Australian research community, there are also concerns about the exploitation of data by others, especially if this would diminish the credit attributed to the researcher who generated the data in the first place.³²⁸ The NCRIS survey made apparent the need for researchers to be provided with guidelines and data management infrastructure to assist in developing a better understanding of data ownership and management.³²⁹

In October 2006, the Australian Partnership for Sustainable Repositories (APSR) project published the results of a survey of researchers based across several research institutions and research service providers throughout Australia. The results of this Australian e-Research Sustainability Survey (AERES) were published in a report entitled, *Sustainability Issues for Australian Research Data: the report of the Australian e-Research Sustainability Survey Project*.³³⁰ The AERES study found a distinct lack of formal policies for data management utilised by the surveyed researchers.³³¹ The report concluded that current data practices generally see data managed sufficiently for research needs but not professionally; discoverable through scientific publication but not otherwise; and having a value placed on it for present needs but not for the future.³³²

In August 2007, the Legal Framework for e-Research Project based at the Queensland University of Technology (QUT) published the report, *Legal and project agreement issues in collaboration and e-Research: Survey Results*.³³³ This report documented a survey that was conducted online during May 2007 and was open to all Australian participants involved in collaborative research.³³⁴ The QUT survey found that many researchers consider legal agreements to be an impediment to timely research and will often commence collaborative research projects before finalising agreements dealing with data ownership and other legal interests.³³⁵ One participant, a university researcher in the Arts and Social Sciences, responded, 'Perhaps the biggest problem facing e-Research is the lack of understanding and agreement as to what is required in terms of local and national information infrastructure to support e-Research activities'.³³⁶ The QUT survey highlighted the need for simple and easy-to-use resources to assist researchers in managing the legal rights surrounding data and e-Research, particularly where collaborative research projects are concerned.

326 See <www.pfc.org.au/twiki/pub/Main/DataWorkshop1/NCRISsurveyanalysis.pdf> at 25 April 2008.

327 See A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 128.

328 See A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 128.

329 See A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 128.

330 Markus Buchhorn and Paul McNamara, *Sustainability Issues for Australian Research Data: The Report of the Australian e-Research Sustainability Survey Project*, Australian Partnership for Sustainable Repositories (APSR) (2006) <<http://www.apsr.edu.au/aeres>> at 25 April 2008.

331 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 126.

332 Markus Buchhorn and Paul McNamara, *Sustainability Issues for Australian Research Data: The Report of the Australian e-Research Sustainability Survey Project*, Australian Partnership for Sustainable Repositories (APSR) (2006) 44 <<http://www.apsr.edu.au/aeres>> at 25 April 2008.

333 Maree Heffernan and Nikki David, *Legal and project agreement issues in collaboration and e-Research: Survey Results*, Legal Framework for e-Research Project, Queensland University of Technology (QUT) (2007) <<http://www.e-research.law.qut.edu.au/>> at 25 April 2008.

334 <<http://www.e-research.law.qut.edu.au/>> at 25 April 2008.

335 See Maree Heffernan and Nikki David, *Legal and project agreement issues in collaboration and e-Research: Survey Results*, Legal Framework for e-Research Project, Queensland University of Technology (QUT) (2007) 38, 62 <<http://www.e-research.law.qut.edu.au/>> at 25 April 2008.

336 Maree Heffernan and Nikki David, *Legal and project agreement issues in collaboration and e-Research: Survey Results*, Legal Framework for e-Research Project, Queensland University of Technology (QUT) (2007) 62 <<http://www.e-research.law.qut.edu.au/>> at 25 April 2008.

LEGAL IMPLICATIONS SURROUNDING DATA ACCESS, SHARING AND REUSE

The collection, management and use of research data occurs in a legal context and raises a host of legal issues. Quite simply, data is surrounded by law.³³⁷ For example, arrangements between a researcher and other researchers, research institutions or funding bodies may be governed by contract. Data compilations may attract copyright protection and data may also attract protection under confidentiality or privacy laws. This section provides an overview of the different legal regimes that may apply to and impact upon data collection, access, sharing and reuse.

COPYRIGHT

A general principle of copyright law is that copyright protects the material form in which ideas, information or facts are expressed and not the ideas, information or facts themselves. It follows that under this general principle, copyright law will not protect raw data. However, in Australia, copyright law may operate to protect compilations of data, such as datasets or databases, provided that the compilation meets the originality threshold required by law. Under the *Copyright Act 1968* (Cth), a compilation is protected as a literary work.³³⁸

Compiled data will not always be raw data – a compilation may also include written materials, reports, diagrams, tables and graphs. Where a data item meets the form and originality requirements under the *Copyright Act*, it may be protected by copyright as an independent work. An important distinction lies between copyright in discrete data items and copyright in a database as a whole. In the latter, copyright serves to protect the *arrangement* of the collected components. Copyright interests may co-exist independently in components contained within the database and in the database itself, and may be owned by different parties.³³⁹

Copyright will only protect a work that possesses the requisite level of originality under law. In *Desktop Marketing v Telstra*,³⁴⁰ the court considered the issue of whether a compilation is sufficiently original to attract copyright protection. The question for the court was whether Telstra held copyright in their White Pages and Yellow Pages directories, which are essentially a compilation of names, addresses and phone numbers listed alphabetically. In a landmark judgment, the court held that Telstra did own copyright in their compilations, thereby establishing that the originality threshold for copyright protection is low. The court held that copyright can be claimed in a compilation that:

1. Has been produced as a result of the exercise of skill, judgment or knowledge in the selection, presentation or arrangement of the materials; or
2. Has required the investment of a substantial amount of labour or expense to generate or collect the material included in the compilation (the so-called ‘sweat of the brow’ approach).³⁴¹

Telstra, in undertaking substantial labour and incurring substantial expense, had met the originality threshold in compiling the Yellow Pages and White Pages directories, notwithstanding that there may

³³⁷ A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 263.

³³⁸ *Copyright Act 1968* (Cth) s 10(1).

³³⁹ A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 137.

³⁴⁰ *Desktop Marketing Systems Pty Ltd v Telstra Corporation Ltd* [2002] FCAFC 112. See also *Nine Network Australia Pty Ltd v Ice TV Pty Ltd* [2008] FCAFC 71.

³⁴¹ *Desktop Marketing Systems Pty Ltd v Telstra Corporation Ltd* [2002] FCAFC 112, [409].

have been minimal intellectual input or creativity involved in the selection and arrangement of the material.

Significantly, the court in this decision prescribed a lower threshold for originality under Australian copyright law than that required in the United States, where there must be a degree of creativity applied in the selection, coordination or arrangement of the compilation.³⁴²

The owner of copyright in a database, dataset or where applicable, a discreet item of data will be able to control how that database, dataset or data is used, copied and shared. It would be wise for a research project that intends to allow its data to be openly shared and reused to formulate plans and policies that properly define, allocate and manage copyright interests in the data and database.

PATENTS

Patents protect products and processes that are novel, useful and involve an inventive or innovative step.³⁴³ They confer on the patentee the exclusive right to exploit the patented product or process for a period of time (usually 20 years from the time of filing the patent application).³⁴⁴ Data or information can be practically applied in such a way that it forms part of or gives rise to an invention capable of being patented. This situation has most commonly arisen in the context of patenting genomic data.³⁴⁵

Researchers collecting data may be concerned with patents for one of two reasons. Firstly, some researchers may be interested in obtaining a patent over a product or process that incorporates data which they have collected. For these researchers, disclosure of data could prevent a patent being obtained because releasing information into the public domain could preclude the 'novel' or 'inventive' aspect of a product or process that is required by law to secure a patent.³⁴⁶ In these circumstances, prior to obtaining a patent, data should only be disclosed under confidentiality agreements to ensure that the data is kept out of the public domain.

Secondly, some researchers may want to ensure that their data is kept free of legal restrictions including patents, in order to allow sharing and reuse by themselves and others. For these researchers, simply releasing data into the public domain may be enough to create prior art and thus prevent successful patent applications by others.³⁴⁷ However, even where data is released publicly it may be possible for another party to make improvements to the disclosed data and then make these improvements proprietary. Where data is used to develop a patentable invention, the subsequent patent rights may be broad enough to cover use of the actual data forming part of the invention.³⁴⁸ Fortunately, there are contractual and licensing options that can be employed to keep data free of restrictive patent claims. One option is to release data via an online database where users accessing the database are required to first enter into a click-wrap agreement that governs use of the data. The agreement can prohibit patent applications based on certain data, or may allow patent applications

342 See *Feist Publications Inc v Rural Telephone Service Co Inc*, 499 US 340, 349 (1991).

343 Patents Act 1990 (Cth) s 18.

344 Patents Act 1990 (Cth) ss 13 and 67.

345 For more information, see A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 116-23.

346 See Patents Act 1990 (Cth) s 7.

347 This was the approach underlying the Bermuda Principles, which were developed in 1996 by a consortium of researchers involved in the Human Genome Project. For more information, see A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 118-20.

348 See A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 119-20; Donna M Gitter, 'Resolving the Open Source Paradox in Biotechnology: A Proposal for a Revised Open Source Policy for Publicly Funded Genomic Databases' (2007) 43(4) *Houston Law Review* 4 <<http://ssrn.com/abstract=901994>>; Rebecca Eisenberg and Arti Rai, 'Harnessing and Sharing the Benefits of State-Sponsored Research: IP Rights and Data Sharing in California's Stem Cell Initiative' (2006) 21 *Berkeley Technology Law Journal* 1187, 1207; Claire T Driscoll, 'NIH data and resource sharing, data release and intellectual property policies for genomics community resource projects' (2005) 15(1) *Expert Opinion on Therapeutic Patents* 4.

but provide that the patent must not be restrictive and must allow further use of the patented data.³⁴⁹ Another option is to actually obtain a patent over a product or process based on or encompassing the research data, but then to licence the use of the protected data under liberal terms.³⁵⁰

PRIVACY

Some research, particularly research in medical fields, will give rise to privacy concerns about the handling and use of personally identifying and health information. In response to privacy concerns, the *Privacy Act 1988* (Cth) requires Commonwealth public sector entities to act in accordance with Information Privacy Principles and private sector entities to act in accordance with National Privacy Principles. The Information Privacy Principles prevent the collection of personal information by a government agency except where the collection is for a lawful purpose directly related to a function or activity of the agency.³⁵¹ The National Privacy Principles provide that personal information cannot be used except for the lawful purpose for which it was collected.³⁵² 'Personal information' is defined in the *Privacy Act* as 'information or an opinion...about an individual whose identity is apparent, or can reasonably be ascertained, from the information or opinion.'³⁵³

The National Privacy Principles differentiate between 'personal information' and 'sensitive information'. Sensitive information is accorded a higher level of protection and is defined to include health or genetic information about an individual.³⁵⁴ An organisation must generally not collect sensitive information about an individual unless the individual has consented.³⁵⁵ Obtaining consent to collect sensitive information for research purposes will usually involve explaining to the participant the purpose, methods, possible risks and potential outcomes of the research, including the likelihood that research results will be published.

There are limited exceptions to the requirements imposed in the Information Privacy Principles and the National Privacy Principles relating to the collection and disclosure of personal and sensitive information. For example, consent to disclose personal information will not be required where the participant was reasonably likely to have been aware or would reasonably expect that the information would be disclosed, or where it is impractical to obtain consent.³⁵⁶

The definition of 'personal information' refers to information that can be used to identify an individual. Where information has been de-identified such that it cannot be re-identified, it can usually be used and disclosed in research and data-linkage without fear of infringing the *Privacy Act*. Studies show that individuals generally support the idea of researchers being able to access health information from databases, provided that the information is identified by a unique number rather than a name.³⁵⁷ The National Health and Medical Research Council (NHMRC) has recommended the transitory use of patient identifiers for the purposes of data-linkage, even without patient consent, provided that the personal information enabling linkage is not retained after the linkage, the

349 This was the approach adopted by the International Haplotype Project (commonly known as the HapMap Project), which ran from 2002 to 2005. For more information, see A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 120-21.

350 This was the approach adopted by the CAMBIA project. See CAMBIA, 'About BiOS (Biological Open Source) Licenses and MTAs' <<http://www.bios.net/daisy/bios/licenses/398.html>> at 11 April 2008. See also, Richard Jefferson, 'Science as Social Enterprise: The CAMBIA BiOS Initiative' (2006) 1(4) *Innovations: Technology, Governance, Globalization* 13; and A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 121-3.

351 *Privacy Act 1988* (Cth) s 14: Information Privacy Principle 1.

352 *Privacy Act 1988* (Cth) Schedule 3.

353 *Privacy Act 1988* (Cth) s 6.

354 *Privacy Act 1988* (Cth) s 6; Schedule 3: National Privacy Principle 10.

355 *Privacy Act 1988* (Cth) Schedule 3: National Privacy Principle 10.

356 See *Privacy Act 1988* (Cth) s 14: Information Privacy Principle 11.1; Schedule 3: National Privacy Principles 2.1 and 10.3; Australian Law Reform Commission, *Review of Privacy* (Issues Paper 31, 2006) [8.124].

357 Australian Law Reform Commission, *Review of Privacy* (Issues Paper 31, 2006) [8.237].

identifying information is used with sufficient security and the research for which the data is being linked has public benefit.³⁵⁸

All Australian States and Territories except Queensland and South Australia have enacted privacy legislation or introduced privacy bills relating to health information and/or the collection and use of personal information in the State public sector.³⁵⁹ In South Australia, the Privacy Committee is responsible for administrative protocol PC012 – Information Privacy Principles Instruction, which applies to public sector handling of personal information. In Queensland, there are two administrative protocols applying to the State's public sector. Information Standard 42: Information Privacy applies to the collection of personal information in the public sector generally, while Information Standard 42A: Information Privacy for the Queensland Department of Health applies to the collection of health information. The differences in privacy regulation at Commonwealth and State levels has caused some confusion for medical researchers, prompting the NHMRC, the Australian Government Productivity Commission and the Australian Law Reform Commission (ALRC) to recommend a nationally consistent approach to privacy regulation of health information.³⁶⁰

CONFIDENTIAL INFORMATION

Data that has not been released into the public domain may be protected by the law of confidentiality. A researcher who has expended considerable time and energy in generating or collecting data may have an interest in protecting that the data from others who have not contributed to its production. In such a situation, the action for breach of confidence can be used to control access to the data.

The law of confidentiality is based on the equitable principle that a person who receives information in confidence shall not take unfair advantage of that information.³⁶¹ A successful breach of confidence action must establish three elements:

1. The information is confidential in nature;
2. The information was imparted in circumstances importing an obligation of confidence; and
3. An unauthorised use of the information to the detriment of the person claiming the right to maintain confidentiality.³⁶²

Data will only be protected as confidential if it is not in the public domain. A breach of confidence action can still be established where more than one person knows about or has access to the data, provided that not so many people know about the data that it can no longer be regarded as secret.

358 National Health and Medical Research Council (NHMRC), National Statement on Ethical Conduct in Research Involving Humans (1999) 53 <http://www.nhmrc.gov.au/publications/synopses/_files/e35.pdf>. Note: the 2007 revised National Statement on Ethical Conduct in Research Involving Humans was tabled in Parliament on 28 March 2007.

359 Privacy and Personal Information Act 1998 (NSW), Health Records and Information Privacy Act 2002 (NSW), Information Privacy Act 2000 (Vic), Health Records Act 2001 (Vic), Australian Capital Territory Government Service (Consequential Provisions) Act 1994 (Cth), Health Records (Privacy and Access) Act 1997 (ACT), Information Act 2002 (NT), Personal Information Protection Act 2004 (Tas), Health Complaints Act 1995 (Tas). For Western Australia, see State Records Act 2000 (WA) s 49 and Freedom of Information Act 1992 (WA) s 3. In March 2007, the Information Privacy Bill 2007 (WA) was introduced into the Legislative Assembly. It passed the Legislative Assembly on 27 November 2007 and reached the second reading speech stage in the Legislative Council on 4 December 2007 (see <<http://www.parliament.wa.gov.au/web/newwebparl.nsf/iframewebpages/Bills+-+Current>> at 20 May 2008).

360 Australian Government Productivity Commission, Public Support for Science and Innovation, Research Report (2007) 189, 217; Australian Law Reform Commission, Review of Australian Privacy Law: An Overview of Discussion Paper 72 (2007) 5-6.

361 *Seager v Copydex Ltd* [1967] 2 All ER 415, 417.

362 *Coco v A N Clark (Engineers) Ltd* [1969] RPC 41, 47.

Usually, confidentiality will be protected through the use of confidentiality agreements, which provide for the disclosure of information on the condition that the contracting party does not further disclose the information and does not use the information except for the purposes set out in the agreement.

Confidentiality will be lost if enough people know about the data such that it passes into the public domain, or if the data is independently discovered by someone else.³⁶³ Where data loses its quality of secrecy, it is still possible for a researcher to control access to and use of the data through contract.

CONTRACT

In practice, the most important legal mechanism used to allocate rights to data is the contractual agreement. There are three main types of agreement relevant to regulating data access and use – the confidentiality agreement, the copyright licence and the access agreement.

Confidentiality agreements, also called non-disclosure agreements, serve to protect secret information by disclosing the information in a controlled setting so that it remains confidential and is not released into the public domain. Confidentiality agreements will generally: identify the owner of rights in relation to the confidential information; identify the information that is to be treated as confidential; impose obligations on the person to whom the information is disclosed to maintain the secrecy of the information; define the scope of the permitted use of the information; and provide for the consequences of a failure to comply with the confidentiality obligations.³⁶⁴

Copyright licences grant permission to a person to deal with a database or a dataset in a way that would otherwise infringe copyright. For example, a copyright owner may permit - through a licence - a researcher to reproduce copyright material and make the material available on a website where it can be accessed and downloaded by other researchers. A contractual copyright licence may also contain terms that are not strictly related to copyright. For example, the licence may require the researcher to undertake not to hold the copyright owner liable for consequences resulting from any inaccuracies that may be contained in the data supplied.³⁶⁵ Contractual licences will usually indicate the copyright material to which the licence refers; the permitted acts that the licensee is authorised to do; any restrictions upon the party acting under the licence; the consideration provided for the licence; and whether or not the licence is exclusive (or non-exclusive) and whether it can be revoked or is irrevocable.³⁶⁶

Access agreements will operate where a researcher or research organisation has control over the database in which their data is stored. The researcher or research organisation may require persons interested in obtaining access to the data to first enter into an access agreement. Access agreements may: identify the data to be accessed; identify the person/s or class of persons who are permitted to access the data; state that access rights cannot be transferred to third parties; limit the purposes for which the data may be used; contain a disclaimer that the researcher is not responsible for any inaccuracies in the data; and provide for the consequences of a failure to comply with the agreement.³⁶⁷ For example, an access agreement may provide that the data can be accessed and used for non-commercial purposes only, or may provide that if a user engages in commercial uses of the data, they must account back to the researcher for a proportion of the profits. Access agreements can be used to control access to and use of data that was formerly protected through confidentiality agreements but which has lost its quality of confidence.

363 Attorney General (UK) v Heinemann Publishers Australia Pty Ltd (1988) 10 IPR 153.

364 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 175.

365 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 173.

366 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 177.

367 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 176-7.

DATA SHARING INFRASTRUCTURE

It will not be sufficient for researchers and database managers to simply be aware of the laws that surround the data they collect. If data is to be effectively made available within the research community, it is necessary that it is properly managed. Research projects would be wise to adopt protocols for dealing with the legal issues that may arise in relation to the data they collect. Failure to establish legal protocols for data management may jeopardise the research community's ability to access, share and use valuable research outputs.³⁶⁸ Data sharing infrastructure, such as data management policies, principles, plans and toolkits, can assist researchers and database managers to effectively manage their legal rights, interests and obligations in relation to the data collected, generated and compiled by the research project.

DATA MANAGEMENT POLICIES AND PRINCIPLES

A forward-thinking research project will have in place a data management policy containing high-level statements about how data generated or compiled by the research project is to be made available for access and use. The data management policy may also contain principles expanding on the high-level statements and indicating how they are to be applied.³⁶⁹

A data management policy will take into consideration the research discipline of the project; the funding arrangements for the research project; the kind of data generated or collected by the project; how and when data is to be deposited into a database; how, when and on what basis data is to be made available for access by other researchers; and any legal obligations imposed on the research project or individual researchers.³⁷⁰

A research project must give careful consideration to formulating a policy which ensures that researchers' objectives, needs and responsibilities in each research situation are properly addressed.³⁷¹ For example, where a research project is publicly funded, it may be appropriate for a policy to strongly support immediate open access to research data. However, immediate open access may not be appropriate for data generated by private sector research projects.

The Australian Partnership for Sustainable Repositories (APSR) has highlighted the importance of all data management policies including clear definitions of concepts and terms used within the policy.³⁷² Additionally, research projects should take care to distinguish in their policies data that is to be made accessible from data that is not. This is particularly important where a research project is collecting data subject to privacy limitations or data that is to be commercially exploited.

Data management policies and principles will also explain the conditions under which data is to be made available for access and use. For example, access may be limited to certain categories of researchers or researchers may only be permitted to use the data for specified purposes. In order to properly ascertain and set out the conditions of access and use, each research project should develop a clear and comprehensive listing of all legal restrictions applying to the management, dissemination and reuse of the different kinds of data that may be generated by the project.³⁷³

368 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 263.

369 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 240.

370 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 241.

371 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 241.

372 Anna Shadbolt et al, *Sustainable Paths for Data-intensive Research Communities at the University of Melbourne: A Report for the Australian Partnership for Sustainable Repositories* (August 2006) 38-9 <http://www.apsr.edu.au/aeres/sustainable_paths.pdf>.

373 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 244.

DATA MANAGEMENT PLANS

Similar to a data management policy, a data management plan (DMP) will address how data is collected, stored, managed and disseminated. It will also be concerned with data ownership and the legal controls surrounding data. However, a DMP will focus on practical measures rather than making broad policy statements. It will also consider expenditures and technical measures to ensure sustainability of data.³⁷⁴

A DMP should be in place from the conception and commencement of a research project. A comprehensive DMP will recognise that there are many different parties involved in a research project and will have relevance to all of the different parties. These parties include collectors and compilers of data, data analysts, database managers, parties that have funded the research project and consumers or users of the data and database.³⁷⁵

It is important that a DMP addresses unusual situations that may arise in the collation of data. For example, where data that is generated by the research project is to be integrated with existing data from other sources, the DMP will need to explain how this will be done and how data from each source will be identified once combined. It must also ensure that legal rights and obligations are respected.

Two central issues for each research project to consider in its DMP are:

1. Who owns the data generated or collected by the research project; and
2. Who is responsible for managing the data?

Data may be owned by more than one person. An owner may be the researcher who has collected or generated the data; the researcher's employer, under the terms of the researcher's employment contract; the funder of the research, under the terms of the funding agreement; or the database owner or provider. Each party's ownership rights will need to be defined in the DMP. Additionally, the DMP should set out who is responsible for managing the data. Management responsibilities may include recording, organising and archiving the data and managing access to the data. A comprehensive DMP will address the management roles of each party and will set out the formal levels of responsibility required for database management and maintenance.³⁷⁶

As explained above, data collection, access and reuse will be affected by legal controls. It is imperative that a DMP considers the legal and regulatory controls applying to the data that is collected by the research project. Such legal controls may include confidentiality restrictions for secret information, copyright assignments and licences, deposit agreements for inclusion of data in a database and agreements governing access to that database. All contractual obligations should be considered and addressed. In particular, a DMP should describe the conditions under which the research project is funded and any obligations – contractual or otherwise – that the researchers have to the funding body. Finally, a DMP should consider whether legislation applies to the collection or use of data, such as the application of privacy legislation for projects dealing with personal information.³⁷⁷

Data security and sustainability are two important considerations for any DMP. The level of security that will operate in relation to the data collected will vary depending on the type of data concerned.

374 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 247-56.

375 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 247-8.

376 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 250, 254.

377 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 251-2.

For example, more stringent security may be applied to data that is confidential or which may form the basis of a patent application. For these types of data, access may be limited to select individuals (access may be password protected) and reuse rights may be minimal. Contractual agreements may regulate what disclosures can and cannot be made in relation to the data. For less sensitive data, the applicable security measures are likely to be less strict. A DMP will need to set out the different security measures relevant to the different levels of data and how these security measures are to be implemented.³⁷⁸

Careful consideration must be given to the potential future relevance of any data collected or generated by the research project. Where it is envisaged that data could be useful for future research, sustainability of data will be an important issue to address. A DMP should describe whether long-term preservation of the data is necessary and if so, how long the data will be preserved and who will be responsible for ensuring its preservation. A related issue will be how to ensure the ongoing, long-term funding of the database even after the research project that gave rise to the database is finished.³⁷⁹

DATA MANAGEMENT TOOLKITS

A data management toolkit (DMT) is a document aimed at researchers within a research project, which provides practical guidelines about implementing the DMP. A DMT can assist individual researchers in ascertaining their role and level of responsibility within a research project and with understanding what is to be done with the data collected or generated by the project. A DMT can inform researchers about who will be able access the data collected by the researchers and how they may reuse that data. It can also assist researchers in determining their obligations, both legal and otherwise, in relation to the data that they generate or collect.

A DMT can be tailored to different levels of research and researchers. It may be appropriate to have a different DMT applying to researchers than that applying to database managers, or a different DMT applying to a small research team within a single institution than that applying to a larger research team that is part of a collaborative project spread across many institutions.

A DMT provides practical guidance to assist researchers in managing their data in compliance with the project's data management policies and procedures, DMP and the relevant legal framework. Therefore, a DMT should take the form most accessible to a project's researchers, whether this be in the form of a textual document, a series of questions, diagrams or multimedia tools. Yet regardless of form, all DMTs should enable researchers to understand the ownership and management issues surrounding data collection and compilation; the legal and technical restraints applying to collection, storage, handling and use of data; and the access, sharing, use and reuse framework surrounding the project's data.³⁸⁰

LICENSING MODELS

As far as data and databases attract copyright, licences can be used to allow access to and reuse of the data by other researchers. The emergence of open content licensing models has made it much easier for copyright owners to licence their material to a wider range of people, especially where it is distributed over the internet.³⁸¹ Open content licensing involves making copyright material available

378 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 252-4.

379 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 255.

380 See A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 256-7.

381 A Fitzgerald and K Pappalardo, *Building the Infrastructure* (2007) 146.

on liberal terms, to ensure that it is readily accessible and available for reuse.³⁸² The last few years have seen an increasing appreciation of open content licences to grant access to copyright-protected data collections in open collaborative research projects.³⁸³

The leading model of open content licensing is the suite of Creative Commons licences developed by the Creative Commons Project.³⁸⁴ The Creative Commons (CC) Licences make copyright works freely available for use, on certain conditions as selected by the licensor. Where one or more elements of a database attracts copyright, a CC licence can be used to licence that copyright to users. For example, the CC licensing model is utilised by the Universal Protein Resource (UniProt), a comprehensive resource for protein sequence and annotation data and a collaboration between the European Bioinformatics Institute (EBI), the Swiss Institute of Bioinformatics (SIB) and the Protein Information Resource (EBI).³⁸⁵ UniProt has chosen to apply the Creative Commons Attribution-No Derivatives Licence to all copyrightable parts of its databases.³⁸⁶

Science Commons is a project related to Creative Commons that extends open access principles to scientific data and publications.³⁸⁷ Formerly, the Science Commons 'Databases and Creative Commons FAQ' stated that a CC licence could be applied to copyrightable elements of a database, but advised database providers to:

- Understand and make clear on the database website which elements of the database are licensed under the CC licence, based on the existence of copyright in those elements;
- Understand and make clear on the database website which parts of the database are not subject to copyright (ie raw data and information) and which are therefore free to be used and reused independently of the CC licence;
- Ensure that they have the necessary authority to apply a CC licence to the database (ie that they are the copyright owner or have permission from the copyright owner);
- Where applicable, inform users that the CC licence only applies to the database elements and not the underlying software; and
- Be aware that CC licences do not licence all types of legal rights, but only licence copyright, and so legal restrictions relating to patents, privacy, confidentiality, contract and other relevant legal frameworks will not be affected by the adoption of a CC licence.³⁸⁸

Science Commons has since moved away from endorsing the application of CC licences to databases. The recommendation has been withdrawn because of difficulties identified by Science Commons with:

1. Identifying the copyrightable and non-copyrightable elements of a database, such that

382 A Fitzgerald and K Pappalardo, Building the Infrastructure (2007) 146.

383 A Fitzgerald and K Pappalardo, Building the Infrastructure, 148. See for example, Editorial, 'Let data speak to data' (2005) 438 Nature 531 <<http://www.nature.com/nature/journal/v438/n7068/full/438531a.html>>; Don Tapscott and Anthony Williams, 'The New Science of Sharing' (March 2007) BusinessWeek.com <http://www.businessweek.com/innovate/content/mar2007/id20070302_219704.htm?chan=technology_technology+index+page_more+of+today's+top+stories>; Charlotte Waelde and Mags McGinley, 'Designing a licensing strategy for sharing and re-use of geospatial data in the academic sector' (2007) GRADE <<http://edina.ac.uk/projects/grade>>.

384 See <<http://www.creativecommons.org>> or <<http://www.creativecommons.org.au>>.

385 'About UniProt' <<http://beta.uniprot.org/help/about>> at 22 April 2008.

386 License & disclaimer <<http://beta.uniprot.org/help/license>> at 22 April 2008.

387 See <<http://sciencecommons.org>>.

388 See <<http://sciencecommons.org/resources/faq/databases/>> at 22 April 2008.

obligations based on copyright (eg the option under some CC licences to require that use of the copyright material is non-commercial) are imposed in situations where copyright does not apply and the obligation is inappropriate; and

2. Proper attribution (a requirement under all CC licences), where hundreds or even thousands of scientists have potentially contributed to or deposited data in the database.³⁸⁹

Science Commons has instead developed a ‘Protocol for Implementing Open Access Data’, which sets out the principles for open access data and provides a protocol for implementing those principles. Additionally, Science Commons distributes an Open Access Data Mark and metadata for use on data and databases that conform to the protocol. The protocol is not a copyright licensing model. Instead, the protocol requires a waiver of legal rights and all legal grounds for database protection in order to dedicate the data to the public domain.³⁹⁰ Science Commons acknowledges that the protocol will not be appropriate for all types of data, but believes that the protocol offers a system that is both legally accurate and easier for scientists to understand than many copyright licensing models.³⁹¹

The problems identified by Science Commons are indeed apparent in many situations involving licensing of database elements and are worthy of careful consideration. However, the legal position regarding copyright protection of data and databases is much more straightforward in Australia than in either the United States or Europe. It is considerably easier to distinguish between the copyright and non-copyright elements of databases in Australia than in the United States, where the creativity of a compilation must be assessed before copyright applies. Further, there are fewer legal considerations in Australian than in Europe, where a sui generis database right operates to protect databases irrespective of whether the database or its contents attract copyright protection.

The concerns raised by Science Commons highlight the importance of each and every research project adopting a DMP that properly considers and manages issues of data ownership and legal rights including copyright. It is entirely possible to successfully apply a copyright licensing model to a database and its copyrightable contents. However, in order to ensure the successful operation of the licence, the research project’s DMP must clearly identify which legal rights apply to which database elements and which database elements are to be licensed to the public and on what terms. The DMP should also state how the data and database are to be attributed and make this information readily apparent on the database website. For example, UniProt provides a webpage that informs users how to cite resources and publications obtained from the UniProt website or databases under a CC licence.³⁹²

CONCLUSION

For any research project, several important legal and management decisions will need to be made about the data collected or generated in the course of the research. How will ownership interests in data be determined and allocated? Will data be made accessible to the public, and if so, on what

389 Science Commons, Protocol for Implementing Open Access Data <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008. See also Science Commons, Database Protocol FAQ <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008.

390 Science Commons, Protocol for Implementing Open Access Data <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008. See also Science Commons, Database Protocol FAQ <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008.

391 Science Commons, Protocol for Implementing Open Access Data <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008. See also Science Commons, Database Protocol FAQ <<http://sciencecommons.org/projects/publishing/open-access-data-protocol/>> at 22 April 2008.

392 Publications – How to cite us <<http://beta.uniprot.org/help/publications>> at 22 April 2008.

basis? Will sharing and reuse of data be permitted? What legal restraints apply to the data? All these questions must be carefully considered, answered and agreed upon by members of the research project, including researchers, database managers, hosting institutions and funding bodies.

Different bodies of law – copyright, patent, privacy, confidentiality and contract law – will be relevant to the collection, storage and dissemination of data. Proper management of data requires an understanding of how these legal regimes impact on the data's generation, handling and dissemination. By adopting mechanisms such as data management policies, plans and toolkits, researchers and research organisations can effectively manage the data they collect or generate, based on a practical understanding of how the various legal regimes apply to it. Implementation of such measures will ensure that research data can be made available online to other researchers in a manner that is openly accessible, timely and in compliance with legal requirements.

THE SCIENCE COMMONS, DATA SHARING AND COLLABORATION

John Wilbanks³⁹³

INTRODUCTION

The purpose of this chapter is to examine what work Science Commons has undertaken in relation to data integration and why data integration is necessary for collaborative e-Research.

SCIENCE COMMONS

Science commons has been charged by its Board of Directors to make the web work for science in the same way as the web works for culture and for commerce. It is easy to use Google to obtain information to do with culture and commerce, whether looking for an old friend or just trying to buy shoes. This must be contrasted with how difficult Google is to use for researchers who have to find answers to questions that involve raw data or complex scientific concepts.

What does it take to make the web work for science the way that it does for culture?

Science Commons has adopted three different methods to answer this question. The first method is to provide open access to digital content, whether it is scholarly literature, data or databases. The second method is to provide access to research tools, whether those are actual physical tools, such as test mice or cell lines or plasmas, or major research tools such as computer software models. The final method is to construct an open source knowledge management platform. This method includes improving the ability of the web to work as a knowledge management platform and the creation and distribution of an open source platform for knowledge management in the life sciences arena with collaboration from the pharmaceutical industry.

The perspective that Science Common brings to streamlining the agreement process in e-Research collaboration involves data integration. This is not simply about putting petabytes of raw data onto the web, but putting data on the web so that it can be integrated and useable. It is similar to the concept of a geographical map - the more data you have, the better the map. Ancient maps can be used to produce very high resolution accurate maps, if data is available and there is no restriction on its use. For example, the NASA Visible Earth Project³⁹⁴ produces high resolution maps which are public domain piece of data. These maps can be utilised, put on a website and distributed without having to first ask permission to do so.

DATA SHARING AND THE LIFE SCIENCES

Data sharing does not occur on a large scale in the life sciences. Six years ago, a survey from the *Journal of the American Medical Association* looked at the sharing of data and research materials in the scientific community. The survey found that about 50% of the time, requests that are made for data and material are denied. That degree of denials increases when it involved higher value data and materials. The survey concluded that the free and open sharing of information, data and materials regarding published research is vital to the replication of published results. However, in daily practice,

393 See <http://sciencecommons.org/>.

394 See <http://visibleearth.nasa.gov/>.

the ideal of the free and open sharing of information, data and materials is often breached. Further studies which followed this survey have found that this non-sharing is not only confirmed, but is getting worse.

There have been efforts to reverse this trend. For example, the Bill and Melinda Gates Foundation³⁹⁵ will not fund research in AIDS, malaria and a number of other diseases unless scientists and researchers share and pool their research data. This approach has been called ‘a radical concept’;³⁹⁶ that a funder of research wants the free and open sharing of the information they fund in order to maximize the chances of discovering a cure for a disease.

The issue of data sharing is not just a legal problem. It is a cultural problem in the sciences; it is a technical problem in the way that data is identified and made accessible; it is a contract problem; and it is an institutional problem.

DATA INTEGRATION

Integrating data makes data more valuable. Failing to integrate data has the effect of ‘burying’ the researcher. It can actually be harmful to a researcher to have lots of data instead of assisting them. There are about 130 databases relating to neuroscience that have been indexed by the Society for Neuroscience.³⁹⁷ There are over 990 databases relating to molecular biology. For example, a search for publically available information on a common cancer protein in the National Centre for Biotechnology Information³⁹⁸ website produced results for 45504 papers on that protein. These are long and dense papers and about 17,000 of these are available in full text. In addition, there were 19,600 plus gene sequences, more than 16,400 protein sequences and more than 350,000 gene expression profiles associated with this protein.

This is a lot of information. At just a paper a day, it adds up to about 115 years of reading and analysis. Pharmaceutical companies spend an enormous amount of money on internal knowledge management systems to prevent their researchers from being swamped with information. Scientists undertaking research in the commercial or academic contexts are generating their own data that requires its own management system, in addition to the influx of publically available data.

DATA COMPREHENSION

A researcher I once spoke to told me that when analysing the massive amounts of data that is available, the first thing he did was to throw away data in order to come up with something that was attractive for him to research. This approach results from the problem of having too much data that is not really integrated. Science Commons argues that the web needs to be updated so that it can handle data integration, instead of just documenting data, which is what it does now.

Some people believe that when a human talks to a dog, the dog only comprehends its name and anything else that is said to it is unintelligible. This is similar to what a computer understands when it looks at a web documents. The only thing that a computer can understand in a web document is ‘link’. Before the web, I might have had a document on my computer and a researcher might have had a document on his computer and whilst we knew that the documents were related, the computers did not. The web can tell us that a certain web page is linked to another web page, but that’s about it, everything else about a document or a web page is not understood by the web.

395 See <http://www.gatesfoundation.org/Pages/home.aspx>.

396 See Marilyn Chase, Gates won’t fund AIDS researchers unless they pool data, Wall Street Journal, 21 July 2006 at <http://yaleglobal.yale.edu/display.article?id=7860>.

397 See <http://www.sfn.org/>.

398 See <http://www.ncbi.nlm.nih.gov/>.

DATA INTEGRATION AND ONTOLOGY

The web needs to be upgraded so that it can understand the context and the direction of this information. Instead of linking a web page to another web page, computers can be taught about classes, attributes and relationships about a set of concepts that exist within a range of different data. It can be a lengthy process because each relationship has to be outlined and has to be made exclusive and clear. This process is called ontology and is one of those things that make data really useful.

By way of example, let us consider receptors in the compartments of cells. This is a very important piece of information in the arena of life sciences. If I have data about a receptor, I will want to go to a data set and find other things that are in the same cell compartment. These other things can be given unique names like URLs. We can then begin to take these things and collapse them by doing data integration using web links, making data useful and tractable. This is a not simple process; however the U.S. government has funded the construction of these types of data relationships and ontology with similar work being carried out in Europe and Australia. Ontology allows a researcher to examine the concept of receptors in the compartments of cells in different databases, even though those databases might have different names for the receptors.

This has been done by Science Commons in collaboration with the World Wide Web Consortium³⁹⁹ by utilising public databases without restriction and collapsing them using web links into a single federated knowledge base. Once databases are integrated, scientists can ask tractable questions. Instead of googling ‘find me a drug target for Alzheimer’s disease’ and returning 189,000 papers for you to read, this method returns a list of about thirty genes, which is what scientists want. The entire enquiry can be rendered as a long web link, which means that the next person who wants this information simply clicks on the URL. This is where an open system, combined with the web and users, begins to bring structure to the complication of having 1,000 databases to examine. Scholars can begin to remix the enquiry, if one researcher writes the enquiry and makes it open, then the next researcher changes it slightly and we can start building a body of enquiries as links. Believe it or not, there was no way for brain scientists in the U.S. to compare two pictures of a brain and share annotations until images of brain slices were put into Google Maps. That was impossible until Science Commons began to transform the information.

Of course, it is illegal in the absence of open licensing to integrate databases. Data restrictions make it very hard for science to be user driven and it means that science remains institutionally driven. If one considers the history of the web, all of the improvements in value have come from web users who have solved their own problems and shared those solutions on the web, whether through web browsers or e-mail. The innovation that we would like to see is obstructed if science is kept away from users and the users’ ability to pose questions to institutions is restricted.

DATA UTILITY

How we achieve data integration and open data also impacts upon the utility of the data. In the 1990s the National Centre for Biotechnology Information and the Human Genome Project made clear statements that the human genome was going to be in the public domain. However, private companies sought to acquire all of the public domain information about the genome for themselves, in addition to their own private information. In the end, the private companies lost, to the extent that even the formerly private information about the genome is now in the public domain. The genome is an example of the distribution annotation system. Because the genome data is open, everyone can collaborate on annotating it, so that means that the genome database is like a phone book with no structure to it, it is just a bunch of letters. Researchers have to work out which parts of the information are actually useful so there are multiple software programs that automatically aggregate

³⁹⁹ See <http://www.w3.org/>.

all those annotations to provide structure to that information. Genome data is collated in the U.S., Europe and Japan and every night these databases are synchronized and integrated. It is an incredibly complicated and technical problem to do that. If negotiations were added to that integration process, it would never happen, so the public domain was the only solution that was going to work.

Another development in relation to utility was the HapMap Project.⁴⁰⁰ If the Human Genome Project documents the things that we are all having in common, HapMap documents the things that makes us different. In the beginning of this project, the HapMap data release policy attempted to forestall any attempts to patent data that would limit or obstruct the database. HapMap had a click-through licence to ensure that the data remained open and free. However, HapMap found firstly that the licences did not stop patenting of this information, only disclosure of the information stopped patterning, and secondly the open licence prevented data integration. Upon discovering this, HapMap eliminated the click-wrap licensing and registration process, because the most important freedom for them to guarantee was the freedom to integrate the data.

OPEN LICENSING AND DATA INTEGRATION

The problem is that the success of the open licensing movement is that the ideas of sampling, attribution, share-alike, no-derivatives and non-commercial are incredibly powerful. There are over 100 million objects on the web under the Creative Commons copyright licences. However, there has not been a lot of thought that has gone into what these ideas mean in a world of integrated and federated data, where a restricted license can overpower an open access licence in the context of databases.

Not all data is the same. The genome is data but so are the research results of someone who designs an experiment to probe the genome. Should both of these be termed as ‘data’? One could argue that the designer of the data has something close to an author’s right because they figured out how to design the experiment. It is very hard to argue that the genome is common to all of us. Another issue concerns ‘metadata’. Is metadata, being the schemas and the ontologies that organise data and make it useful, itself “data”?

SCIENCE COMMONS PROTOCOL FOR IMPLEMENTING OPEN ACCESS DATA

A Google query for 40,000 databases that are linked via the web is itself a data product of all the 40,000 databases that it touches. Imagine if you had to think about the licensing impact of every Google query every time you saw it, this is what happens when you think about licensing databases as a first policy.

Accordingly, Science Commons developed the Protocol for Implementing Open Access Data.⁴⁰¹ The Protocol recommends firstly that data be converged into the public domain as a default setting by waiving all copyright in relation to databases, because it is impossible to ask scientists to determine where copyright begins and ends in a database. Scientists and scholars have no idea and lawyers tend to get into complicated arguments over that question. Secondly, there are still related statutory and IP rights around databases, regarding unfair competition and the European Union’s Directive on the Legal Protection of Databases,⁴⁰² and the Protocol requires that these rights will also need to be waived. These two requirements are unpopular with owners of data and databases who want to protect their data.

⁴⁰⁰ See <http://www.hapmap.org/>.

⁴⁰¹ See <http://sciencecommons.org/projects/publishing/open-access-data-protocol/>.

⁴⁰² See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0009:EN:HTML>.

Contractual controls cannot be imposed on data or databases. This requirement is very unpopular with people who want open access to data. Many communities want to force other people to be open through share-alike licences on data, however that represents a contractual control that obstructs data integration.

Realistically, it is improbable that lots of databases will fall under this Protocol unless they are government funded in countries that have a natural public domain for data. The strategy is to ensure inter-operation between public and non-public databases by making sure the schemas that exist in non-public databases are themselves in the public domain. This would allow users to be pointed from the public domain towards data and databases that are not public domain. It also means that at the very least, the public domain can act as an index of all available public and private information that can be copied widely. This is analogous to the open nature of the Dewey Decimal System or other library index systems. The point of making them open is so that all users can have common reference points.

The reason that Science Commons called this a protocol and not a licence is because we do not expect the genome to be re-licensed under our tools. Science Commons did not want to promote a single methodology to achieve the goal of converging data into the public domain as a default setting, because data is treated very differently in other countries. For example, there is no public domain of this sort in Brazil.

Science Commons cannot impose a single licence solution, but would prefer to implement a trade mark and certification strategy. This strategy would allow people to identify their data with a trade mark. The trade mark states that they have made their data open under the Protocol and that metadata has been assigned to it to make it discoverable and automatically integrated.

The public domain allows us to transform the issue of creating too much data from a problem into a positive benefit. No one company has the ability to make sense of all this information and has to re-format the public domain internally over and over again. If we have the necessary rights and the technology, we can format the public domain so that we can harness the power of the users to structure and segment the data.

IMPLEMENTATION – NATIONAL CANCER INSTITUTE

Science Commons is working with the U.S. National Cancer Institute⁴⁰³ on the Cancer Bioinformatics Grid which is intended to link together all of the sixty-five cancer centres in the U.S. which are funded by the Institute. These centres are doing incredibly important and high level research into the different elements of cancer, but until recently they had no way to inter-communicate even though they are all looking at the same core issues and diseases. In the last five years, the Federal Government invested a large amount of money to build a ‘grid system’, consisting of fibre and software connections, data storage and processer sharing etc, to connect these centres. The goal was to create sets of principles on federated data, open development, open access and open source; to connect scientists and practitioners so they can collaborate; to develop standard rules and a common language to enable the sharing of information; to build or adapt tools for collecting, analysing integrating and dissimilating information associated with cancer research and cures.

The Grid built a framework called the ‘Green Lane’, the ‘Yellow Lane’, the ‘Orange Lane’ and the ‘Red Lane’ in relation to data sharing and access. If data fell under the Green Lane, being data that had no IP value, no certificated data, no institutional review board (IRB) restrictions (which is the organisation at a university that evaluates human clinic trials) and no sponsor restrictions, then that

⁴⁰³ See <http://www.cancer.gov/>.

data needed to be made available under generalised terms of use and not under contract. If data fell under the Yellow Lane being data that had moderate IP value, moderate sensitivity value and limited institutional or IRB policy restrictions,⁴⁰⁴ then that data needed to be made available under standardised click-through terms and conditions with authentication. If data fell under the Orange Lane being data that had high IP value (such as a possible patent), high sensitivity data,⁴⁰⁵ then that data needed to be made available under standardised click-through terms and conditions or individually negotiated bilateral or multilateral agreements. Any data that falls in the Red Lane cannot be shared at all.

However, the data that the grid has collated to date is in the Orange Lane and has had to be negotiated and contracted, even if it had no IP value or restrictions. In reality, a contract by itself will not be sufficient to provide an incentive to use the grid system; other considerations must be taken into account including the eco system in which data travels; provider labs and recipient labs who execute the contract between themselves; depositing into the grid; locating datasets through appropriate mechanisms; providing original sources of data with appropriate credit; and providing a sense of fulfilment to grid depositors and users.

Science Commons is implementing the CCZero licence⁴⁰⁶ for the data in the Green Lane, which will enable data and metadata that does not have IP or significant consent restrictions to be in the public domain. For data in the Yellow Lane, we suggest using a standardised click-through terms and conditions contract with authentication. This will be similar to a Creative Commons licence but will only exist as one version.

In relation to data in the Orange Lane, Science Commons proposes that a Creative Commons modular contract system be developed, similar to either the Lambert Agreements⁴⁰⁷ or the UIDP TurboNegotiator.⁴⁰⁸ However, there is a back log of 7,000 different contracts over this data that cannot be rationalized. Accordingly, grid users will be allowed to tag these contracts every time they use them, through the language that Science Commons has created to describe these contracts.

This will allow the users to bring structure to these contracts by adding annotations to these contracts which will describe which contracts have similar terms, which contracts have reach through rights, which contracts have IP restrictions and which contracts have very few or no restrictions. Someone can now access data by typing in 'find me kidney cancer data sets that have terms of use that I can work with'. This tagging and structuring will allow us to see what terms and conditions users like and then Science Commons can design a modular contract system that meets the demands of grid users.

This is easy to do because of the metadata which Science Commons has designed for copyright licences and transfer agreements. This metadata lets users find data not just based on scientific or cultural relevance but also based on the legal terms of use. Science Commons will analyse about one hundred copyright licences and transfer agreements to identify common desired themes for a single form signed contract and to construct a taxonomy for the Orange Lane.

404 For example, data about cancer patients might have restrictions over it if the data could enable you identify the patients – this creates a restriction that prevents the public domain from working.

405 Which easily identifies trial patients or which contains significant consent restrictions from the trial patients or restrictions from the research sponsor.

406 Which allows a person who holds the necessary rights in a work to waive all copyrights and related or neighbouring interests that you have over a work such as moral rights, publicity or privacy rights, rights protecting against unfair competition and any rights protecting the extraction, dissemination and reuse of data. See <http://labs.creativecommons.org/license/zero>.

407 See <http://www.innovation.gov.uk/lambertagreements/index.asp?v11=1&v12=3&v13=0&v14=0>.

408 See <http://www.uidp.org/>.

Science Commons will construct and utilise this Yellow Lane contract in the Creative Commons methodology and will be adding these legal parameters into the formal context of the grid. It is hoped that this idea will be utilised by organisations doing non-human and non-clinical data searches because it will be made available on a non-profit and free basis. Our attitude is ‘Take our code, take our contracts, take our icons and make it work locally because that is the only way that you can localise the Protocol’.

CONCLUSION

Normally, the default approach towards data is not to share data, unless arrangements to share have been made. Science Commons is proposing that this position be reversed. The default approach should be to share data in the public domain, that data is automatically open, unless arrangements not to share have been made. In order to make this acceptable, we must have a mechanism which makes it easy to opt out of the public domain default. Making that change has the potential to radically reshape the amount of data that is available for reuse and remix not only by academics and researchers but also by the corporate world.

Infrastructure is not free. Corporations that invest in infrastructure tend to go out of business because it is a massive non-recoverable expense. It is hard to sell highways to people but you can sell them the things that ride across highways.

Science Commons is not a very stable foundation for innovation; all we are trying to do is to blaze a trail. Anyone can give anyone else a free puppy, but its going to cost a thousand dollars a year to keep it alive. The sooner that government and academia work together to develop this infrastructure, the sooner it becomes a long term continuing investment. Libraries and the universities are the natural place to host these infrastructures because they are likely to be here in a hundred years, whilst non-profit organisations and most companies will not.

THE LAMBERT MODEL AGREEMENTS, EUROPEAN INITIATIVES AND FUTURE APPROACHES

Christine Reid⁴⁰⁹

ORIGINS OF THE LAMBERT TOOLKIT⁴¹⁰

What have become known as the Lambert Model Agreements are the result of UK Lambert Review on Business-University Collaboration,⁴¹¹ published in December 2003. That review was chaired by Richard Lambert, formerly an editor of the Financial Times and an ex-member of the Monetary Policy Committee at the Bank of England and now Director General of the Confederation of British Industry (the CBI).

The Lambert Review found that one of the greatest barriers to effective university and business collaboration was the time and effort it took universities and industry to negotiate appropriate agreements. Consequently one of its recommendations was that key stakeholders, representing universities and business, should work together to produce a small set of model collaborative research agreements for voluntary use by industry and universities. It recommended that these agreements should set out a range of approaches to the ownership and exploitation of intellectual property rights, for example, ownership of intellectual property rights by the university with exclusive or non-exclusive licensing to business.

With that end in view, the then UK Department of Trade and Industry set up a working group of 40-50 people. At the first meeting of that group, as might have been anticipated, positions were polarised, with both universities and industry arguing that they each should own all the intellectual property rights in the results of the collaboration. That attitude was not unusual and was a contributory factor to the time and costs that it took to put collaboration agreements in place, with many projects ending before the legal niceties had been agreed. Many people at that first meeting believed that it simply was not possible to produce a useful set of model agreements.

A small inner working group of about a dozen representatives, half from industry and half from U.K. universities, was formed to see what could be produced by way of model agreements. Malcolm Skingle, Director of External Science and Technology at GlaxoSmithKline chaired (and still chairs) that inner group. The sole criterion for membership of the inner group was that each member should have extensive, real and practical experience of the issues that arise time and time again when a university and a business partner negotiate the terms of research collaboration.

The inner working group set about negotiating the terms of a research collaboration agreement from different perspectives. Over several months, the group conducted the type of negotiations that every university and industrial collaborator undertake when they are trying to document the terms of a research collaboration. These are negotiations which are conducted in the hope that in the future,

⁴⁰⁹ Christine read Classics at St. Hilda's College, Oxford before joining Morrell, Peel and Gamlen, an Oxford firm of lawyers that acted for Oxford University for over 200 years. Whilst at that firm Christine started to specialise in technology law and was one of the first lawyers in the UK to develop an ICT, and later, an e-commerce practice. She has over 20 years' experience advising on technology-related matters.

⁴¹⁰ See www.innovation.gov.uk/lambertagreements.

⁴¹¹ See http://www.hm-treasury.gov.uk/media/9/0/lambert_review_final_450.pdf.

other parties could avoid having to negotiate these issues from scratch every time they wanted to collaborate, and in the hope that reasonable expectations could be set about what an acceptable compromise might look like. The inner group regularly presented its work to an outer group whose numbers rose to over 100 and who acted as a sounding board, providing useful comments and feedback to the inner working group.

It was immediately apparent that the fundamental issue between collaborators always was: who had the rights to use the intellectual property rights in the results of the collaboration? All too often both university and industrial collaborators would argue why it, and it alone, should not only own those intellectual property rights, but should also have exclusive rights to exploit the results. This ‘all or nothing’ argument was seemed to be the reason why negotiations took so long and why they were so expensive in terms of legal fees and internal resources.

The meetings of the inner group who negotiated the terms of the Model Agreements were sometimes lively and people did start from polarised positions, however one result of the negotiations was that each party came to understand the other’s position. For instance, industry came to understand why the method used by universities of costing projects (full economic costing) and the universities’ charitable status meant that they could not just ‘give away’ the intellectual property rights or be seen as a cheap means of open innovation. Equally, the universities came to understand that in order to claim tax credits, industry needed to own at least some of the intellectual property rights. By the end of the negotiations, one party could even be seen arguing on behalf of the other party.

The method adopted by the inner working group, that of having its’ members actually negotiate a deal, meant that the Model Agreements came to embody a compromise that makes them a more useful tool than some other precedents. Instead of agreements that favour only one particular group (be it industry or academia), the Model Agreements represent a real compromise, where both or all parties come away from the negotiating table with a ‘win-win’ solution and believing that they have achieved what they needed to achieve.

AIM OF THE LAMBERT TOOLKIT

The aim of the Lambert Toolkit is to maximise innovation by assisting technology transfer. The Model Agreements were not developed with the aim of maximising the commercial return to the universities, but with the aim of encouraging university and industry collaboration and knowledge sharing. They do not represent an ideal position for any party. Depending on the circumstances, they are designed to represent a workable and reasonable compromise for both or all parties.

Fundamental to this compromise was the concession suggested by the universities, that the minimum that an industrial partner could expect from any research collaboration should be a non-exclusive right to use the intellectual property rights in the results for any purpose⁴¹² in a specified field and a specified territory.⁴¹³ In return, the industrial partner’s financial contribution to the research project would not be less than full economic cost. This ‘deal’ is the cornerstone of the five original Lambert Model Agreements and is something that helps to set expectations of what might be reasonable in negotiations.

Universities have not always embraced this compromise. One criticism that was voiced shortly after publication of the first five model research collaboration agreements was that the inner group did not produce a ‘Lambert Model Agreement 0’. This is an agreement under which the university received the industrial collaborator’s contribution and ‘gave’ nothing in return. The reason for the absence of

412 Not just research and development.

413 That field and territory might be as wide or as narrow as the parties agreed.

this type of Model Agreement is simple, it would be contrary to the spirit of the Lambert Agreements and contrary to one of their primary aims, that of assisting the transfer of technology or knowledge sharing from universities to industry.

THE LAMBERT TOOLKIT - THE MODEL AGREEMENTS

The university owning the intellectual property rights in the results and granting a non-exclusive licence to exploit those rights is the basis of Model Research Collaboration Agreement 1. Model Research Collaboration Agreements 2 and 3 give the industrial partner an opportunity to negotiate further rights such as an exclusive licence or an assignment of the intellectual property rights in some of the results. Model Research Collaboration Agreements 4 and 5 allow the industrial partner to own the intellectual property rights in the results. Under Model Research Collaboration Agreement 4, the university has the right to use the results for academic purposes and the researchers can, subject to certain safeguards, publish the results in accordance with normal academic practice. Under Model Research Collaboration Agreement 5, the industrial partner does not grant a licence back to the university to use the results for academic purposes, and no allowance is made for academic publication. Model Research Collaboration Agreement 5 represents what is usually called contract research, rather than a research collaboration agreement.

Although the university and the industrial partner are free to negotiate whatever financial and other arrangements they wish, the underlying assumption is that the greater the contribution of the industrial partner to the project, the greater the rights the industrial partner will have in relation to the results. An industrial partner who takes an assignment of the intellectual property in some of the results is expected to make a larger contribution than the industrial partner who settles for the non-exclusive rights under Model Research Collaboration Agreement 1. The industrial partner who owns all the intellectual property rights in the results under Model Research Collaboration Agreement 5 will normally have paid a full commercial price to the university, or have made a substantial contribution in some other way.

THE LAMBERT TOOLKIT – THE OUTLINE

Model Agreements by themselves will not help reduce the time and expense of negotiating research collaborations. One of the key factors in negotiations is the level of understanding and confidence of the people who are involved in them. The negotiator's failure to understand his own company's or institution's position, the legal and tax issues and the other party's position all make negotiation more difficult. In meetings of the inner group, it became clear that understanding was vital if issues were to be resolved and that there could be little or no understanding without real communication. Accordingly, the Lambert Toolkit contains more than the Model Agreements that the inner working group was tasked with producing.

The inner working group recognised that collaborators sometimes found it difficult to identify where they were in agreement with one another, what issues needed to be discussed and resolved and, indeed, that they tended to shy away from the more difficult issues. Moreover, there were often communication difficulties within organisations (for instance between the Technology Transfer Offices and the researchers) as well as between the industrial partners and the universities. To help resolve some of these difficulties, the Lambert Toolkit contains an Outline. This is designed to be used early in the process, before anyone attempts to put a draft document together, in order to help the parties to reach real agreement in principle⁴¹⁴ on the fundamental points of the collaboration. If people use the Outline to identify what they want from an agreement and what the other party wants

414 Or non-binding 'heads of terms'.

from that agreement, they should avoid getting bogged down in the wording of the agreement before there is any meeting of minds or consensus.

THE LAMBERT TOOLKIT – THE GUIDANCE NOTES

Throughout the meetings of the inner group, notes were taken of the arguments adopted by industry and the universities. These notes were used to form the basis of the Guidance Notes that form part of the Toolkit. They reflect the issues that arose while the inner working group was negotiating the agreements and are therefore the sort of issues of which collaborators should be aware. They help to explain the thinking behind the Model Agreements and contain brief explanations of some of the topics that the agreements cover (such as confidentiality, academic publication and freedom of information). They also provide guidance on how to use the Model Agreements, for instance, by emphasising the need for a full project description detailing each party's contribution to the collaboration. The Guidance Notes have proved particularly helpful to small and medium sized enterprises which do not have in-house expertise and to less experienced technology transfer officers.

THE LAMBERT TOOLKIT – THE DECISION GUIDE

To help collaborators decide which of the five original Model Agreements to use, the Lambert Toolkit contains a Decision Guide that takes users through some of the most important criteria. In essence, the guide helps collaborators to judge the respective contributions made by the parties to the project and to decide which Model Agreement is likely to be the most suitable given their relative contributions. The Decision Guide is not exhaustive and there may be other factors that the inner working group did not address, but which are important to a specific project. However, the Decision Guide does help collaborators develop a feel for where they are in the spectrum of Lambert Model Agreements.

The Toolkit also contains 'Useful Resources' which are links to a dozen or so other forms of agreements that collaborators may find useful, such as a form of Non-Disclosure Agreement, a Patent Licence, an Assignment of Intellectual Property, a Materials Transfer Agreement and the Russell Group Studentship Agreement. These 'extras' have been considered, but have not been endorsed by the inner working group.

THE MODEL CONSORTIUM AGREEMENTS

The inner working group took the view that it would start with relatively simple two-party research collaboration agreements, but many people asked whether it could look at multi-party or consortium agreements. Moreover, the inner group took the view that the value of the Lambert Toolkit would diminish if it were not kept up-to-date, with both the model agreements and the other materials being updated to reflect changes in the law and in practice. Accordingly, work has continued with the support of the UK Intellectual Property Office and four Model Consortium Agreements (A - D), revised Guidance Notes, a second Outline ('heads of terms') for the Model Consortium Agreements and some updating of the original five Model Agreements were published in November 2008 on a re-launched Lambert ToolKit website.

The possible scenarios for multi-party Consortium Agreements are almost endless. However, if the inner working group had produced more than a handful of Consortium Agreements, it would have been impossible for people to be familiar with them all and they would have been unworkable. It was decided to concentrate on four scenarios to give a broad spectrum of examples of what a Consortium Agreement might contain and where possible, the Consortium Agreements follow the structure and wording of the five Model Research Collaboration Agreements. The main areas of difference are the

management of the project, compliance with grant funding conditions and the expulsion of members of the consortium.

Model Consortium Agreement A creates a level playing field under which all the parties have the right (but not the obligation) to exploit the results of the project. At the other end of the spectrum, Model Consortium Agreement D gives no party the right to exploit any intellectual property rights that belong to another consortium member. If any party wishes to exploit another party's intellectual property rights, it will need to approach that other party for a licence that allows it to exploit them or it will have to negotiate to take an assignment of those rights.

Because the aim of the Toolkit is to encourage innovation, Model Consortium Agreements B and C contain an agreed exploitation plan that states that if a party tasked with exploiting the results of the project does not do so, the right to exploit the other parties' results come to an end. These two Model Consortium Agreements are designed to work with the UK Technology Strategy Board's funding conditions for R&D collaborations. Members of the inner working group liaised with the Technology Strategy Board to ensure that it was satisfied with those agreements and prepared to direct grant recipients to them. The Model Consortium Agreements can easily be adapted for use with other grant conditions or for use without grant funding.

CRITICISM OF THE LAMBERT TOOLKIT

The inner working group has welcomed comments and from time to time it has received and responded to substantial but constructive criticism. Universities U.K. issued a lengthy paper of concerns about the Lambert Consortium Agreements, but have acknowledged that they now understand the positions that are taken in those agreements.

Lawyers have not always been as supportive. Criticisms from them include that the agreements do not cover all potential scenarios, that perhaps the Lambert working group should not try to cover any scenarios if all cannot be covered, or that they prefer to use their own standard agreements. The problem is that if everyone wants to use their own standard agreements, the compromise that the Lambert Model Agreements represents is lost and collaborators will again start from their own polarised position.

However, that is not an argument for using a Lambert Model Agreement in every case. The inner working group does not have a crystal ball and there may well not be a Model Agreement that fits every set of circumstances. However, the easier and quicker solution may be to tailor a Lambert Agreement to fit the circumstances, rather than to start from a clean sheet of paper or a one-sided draft tabled by one of the parties and having to argue every point before any compromise can be reached.

Use of the Lambert Model Agreements is not compulsory. They will not be appropriate in all circumstances and they cannot solve every issue, however we have evidence that where they are used, that they ease the process and substantially reduce the time and resources it takes to enter into a research collaboration agreement. In some cases their usefulness occurs where parties are finding it difficult to suggest a reasonable compromise on a particular issue. The middle way may be to follow a Lambert Agreement on that issue. If the Lambert Model Agreements help some of the time, or if the other materials in the toolkit make negotiations easier, then the Lambert Toolkit is doing what it set out to do.

FUNDERS' FORUM REPORT⁴¹⁵

August 2007 saw the publication of *Streamlining University/Business Collaborative Research Negotiations*,⁴¹⁶ an Independent Report to the 'Funders' Forum' of the UK Department for Innovation Universities and Skills.

The report found that there was only a limited use of the Lambert Model Agreements. Some people found that the Model Agreements did not quite meet their needs, however others have found the Lambert principles to be a useful starting point for their negotiations and the Decision Guide to be particularly useful.

The report states that collaborative research is often carried out on a multi-party basis and that the negotiation of these was often significantly more complicated. It welcomed the fact that the Lambert Group was (at the time of publication of the report) working on consortium agreements. A number of people thought that their own standard agreements were not very far away from the Lambert agreements.

The report recommended that publicity for the Lambert Agreements might be beneficial, with the publication of a list of universities and companies that already use the agreements, together with case studies.

Other parts of the report are instructive about the other barriers to successful knowledge sharing. It recommended that:

1. The U.K. Government should make it clear that the primary objective of their support for university/business collaboration is to 'improve the knowledge base and increase the economic impact of research, rather than generating extra funding for universities';
2. The U.K. Research Councils should produce and publicise guidance on the handling of intellectual property in the collaborative research that they sponsor;
3. Other public funders of research should give clear guidance on the purpose of their contribution and their expectations in relation to intellectual property;
4. Government and public funders should remind universities that 'Full Economic Costing' does not require them to charge 100% FEC on individual contracts with business, so long as overall sustainability of research is appropriately factored in;
5. University senior management should set out their aims for collaborative research relationships, so that there are clear messages to academic staff and those staff who negotiate;
6. University senior management should encourage a balanced approach to intellectual property negotiations, recognising the benefits of the business relationship and the relative improbability that any individual piece of intellectual property will ultimately turn out to be a 'blockbuster';
7. University senior management should check that their own internal targets and metrics do not inadvertently drive the wrong type of behaviour in negotiations on collaborative research;

⁴¹⁵ See www.dius.gov.uk/publications/steamlining.html.

⁴¹⁶ See <http://www.dius.gov.uk/publications/steamlining-august07.pdf>.

8. University senior management should ensure there is clarity over the balance between facilitator and gatekeeper roles for Research Contract Offices and identifying where the decision making power lies;
9. Universities and businesses should review the approach that they take on negotiations and consider whether this approach could be improved in line with good practice. Senior management should see contracts, give clear direction on desired outcomes and appropriate escalation procedures and ensure that decisions are taken at the right level, so that strategic considerations can be taken into account;
10. Businesses should ensure that commercial officers are attuned to the sensitivities of university research and the benefits of long-term research relationships; and
11. Knowledge transfer bodies such as AURIL, UNICO/PRAXIS and particularly the Institute of Knowledge Transfer should consider what further role they could play in developing and promoting good practice to improve the quality of negotiations.

It is possible to read into the recommendations the barriers that the writers of the report discovered and are trying to remedy. Other reports, and the recommendations stemming from them, echo or anticipate the same sort of concerns.

JISC STUDY⁴¹⁷

At the same time as the report was being prepared for the Funders' Forum, the U.K. Joint Information Systems Committee commissioned a Business and Community Engagement Study 'To Investigate and Produce Guidelines for the use of Publicly-funded Infrastructure, Services, and Intellectual Property'.

The focus of that study was completely different from that of the Funders' Forum report. It was to explore the legal issues involved in the use of information and communications technology in Business and Community Engagement Activities (BCE) in the U.K.'s higher education and further education sectors.⁴¹⁸

The interesting thing about that study is the finding that, apart from State Aids,⁴¹⁹ the major barriers to effective BCE activity were not legal in nature. The problem identified was that BCE was still not considered a priority by many institutions and by many of their staff.

The legal issues that did exist, involving intellectual property rights, data protection and privacy and contractual restrictions on the use of software, databases and ICT infrastructure, could be overcome with foresight and forward planning and, sometimes, additional financial resources.

Organisational failure to determine policy, to educate staff and to anticipate and deal with issues militated against foresight and forward planning. If these failures could be resolved many issues that are perceived as 'legal' could also be resolved.

⁴¹⁷ See www.jisc.ac.uk/publications/publications/bcefundinfra.aspx.

⁴¹⁸ BCE includes knowledge transfer, work-based learning, community links, outreach, Continuing Professional Development (CPD), employer engagement, wider participation, and lifelong learning.

⁴¹⁹ Any aid granted by a Member State of the European Union or through state resources in any form that distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods is, in so far as it affects trade between Member States, incompatible with the Common Market and therefore unlawful (subject to certain limited exceptions).

The sort of problems that the study identified through interviews and surveying academics and technology transfer practitioners included:

1. Universities commonly acquired software and data licences that were restricted to academic use and could not be used for commercial activities or by those organisations collaborating with the university;
2. University researchers often acquired software code on an open source basis, only to find that it could not later be licensed for a fee or that it could only be licensed on terms that did not protect the university;
3. Institutions acquired personal data, but had not taken steps to ensure that they could share it with collaborators;
4. University 'Acceptable Use' policies often prohibited the use of university facilities for BCE activities;
5. Knowledge transfer departments were often isolated, both physically and organisationally, from the rest of the institution;
6. Institutional internal support was not geared towards supporting business needs;
7. The size and complexity of institutions made it difficult to get the maximum from ICT-related opportunities for business development;
8. There was a lack of correlation between decision-making, authority, accountability and action within institutions;
9. Academics were uncomfortable with having to defer to 'business/exploitation' departments;
10. BCE activities were regarded as very low priority with institutions and were not seen as being of strategic importance;
11. Key stakeholders needed to support BCE activities with institutions;
12. Participation by academics in BCE activities was not seen as important for career progression within institutions; and
13. Academics were happy to work with larger businesses, but felt that small and medium sized enterprises had very little or nothing to offer them.

THE EUROPEAN COMMISSION RECOMMENDATION⁴²⁰

On 10 April 2008 the European Commission published its recommendation to Member States on the management of intellectual property in knowledge transfer activities and the Code of Practice for universities and other public research organisations (PROs). This was the result of an Expert Working Group on Knowledge Transfer in the European Research Area.

The purpose of the Recommendation is to provide Member States with policy guidelines for the development or updating of national guidelines and to provide PROs with a 'Code of Practice' to help them improve their management of intellectual property and knowledge transfer.

⁴²⁰ See http://ec.europa.eu/invest-in-research/pdf/ip_recommendation_en.pdf.

The European Commission believes that the active engagement of public research organisations in intellectual property management and knowledge transfer is essential for generating socio-economic benefits, for attracting students and scientists and for further research funding. Although Member States may have taken initiatives to facilitate knowledge transfer at national level, there are discrepancies between national regulatory frameworks, policies and practices. Varying standards in the management of intellectual property within public research organisations hinder trans-national knowledge transfer across Europe and the realisation of the European Research Area.

Some of the recommendations will sound familiar in the light of the Funders' Forum Report and the JISC Study. They include:

1. Ensuring that PROs define knowledge transfer as a strategic mission;
2. Encouraging PROs to establish and publicise policies and procedures for the management of intellectual property in line with the Code of Practice;
3. Supporting the development of knowledge transfer capacity and skills in PROs and taking measures to raise the awareness and skills of students regarding intellectual property, knowledge transfer and entrepreneurship;
4. Promoting the broad dissemination of knowledge created with public funds, by taking steps to encourage open access to research results while enabling, where appropriate, the intellectual property to be protected;
6. Using the principles outlined in this Recommendation as a basis for introducing or adapting national guidelines and legislation or for other measures to promote knowledge transfer or when creating new related policies or funding schemes, while observing State aid rules;
7. Ensuring the widest possible implementation of the Code of Practice, directly and through the rules laid down by research funding bodies; and
8. Examining and making use of the best practices set out in Annex II, taking into account the national context.

The Code of Practice is deliberately worded very broadly in order to make sense to a large number of Member States, which sometimes have very different intellectual property laws and practices. The Code recommends:

- a) Developing an intellectual property policy as part of the long-term strategy and mission of the PRO and to publicise it internally and externally, while establishing a single responsible contact point;
- b) The policy should have clear rules for staff and students regarding the disclosure of new ideas with potential commercial interest, the ownership of research results, record keeping, the management of conflicts of interest and engagements with third parties;
- c) Promoting the identification, exploitation and, where appropriate, the protection of intellectual property in line with the strategy and mission of the PRO with a view to maximising socio-economic benefits;
- d) Providing appropriate incentives to ensure that all relevant staff play an active role in the implementation of the intellectual property policy. (Incentives should not only be of a

- financial nature but should also promote career progression, by considering intellectual property and knowledge transfer aspects in appraisal procedures, in addition to academic criteria);
- e) Considering the creation of coherent portfolios of intellectual property by the PRO (for example, in specific technological areas) and, where appropriate, the setting-up of patent/intellectual property pools including the intellectual property of other PROs and research organisations;
 - f) Raising awareness and increasing basic skills regarding intellectual property and knowledge transfer through training actions for students and research staff. Ensuring that the staff responsible for the management of intellectual property and knowledge transfer have the required skills and receive adequate training;
 - g) Developing and publicising a publication/dissemination policy which promotes the broad dissemination of research and development results (for example, through open access publication), while accepting possible delays where the protection of intellectual property is envisaged (although this should be kept to a minimum);
 - h) While a proactive intellectual property and knowledge transfer policy may generate additional revenues for the public research organisation, this should not be considered the prime objective;
 - i) Ensuring that the PRO has access to or possesses professional knowledge transfer services including legal, financial, commercial, intellectual property protection, enforcement advisors and staff with technical backgrounds;
 - j) Developing and publicising a licensing policy, in order to harmonise practices within the PRO and to ensure fairness in all deals. In particular, transfers of ownership of intellectual property owned by the public research organisation and the granting of exclusive licences should be carefully assessed, especially with respect to non-European third parties. Licences for exploitation purposes should involve adequate compensation, whether financial or otherwise;
 - k) Developing and publicising a policy for the creation of spin-offs, allowing and encouraging the PRO's staff to engage in the creation of spinoffs where appropriate and clarifying long-term relations between spin-offs and the PRO;
 - l) Establishing clear principles regarding the sharing of financial returns from knowledge transfer revenues between the PRO, the department and the inventors;
 - m) Monitoring intellectual property protection, knowledge transfer activities and related achievements and publicising these on a regular basis. The research results of the PRO, any related expertise and intellectual property rights should be made more visible to the private sector in order to promote their exploitation;
 - n) With regard to R&D results having several possible application fields, exclusive licences that are granted without any limitation to a specific field of use should be avoided. Moreover, as a rule, the PRO should reserve adequate rights to facilitate dissemination and further research;
 - o) The rules governing collaborative and contract research activities should be compatible with the mission of each party. They should take into account the level of private funding and be in accordance with the objectives of the research activities, in particular to maximise the commercial and socio-economic impact of the research, to support the PRO's objective to

attract private research funding, to maintain an intellectual property position that allows further academic and collaborative research and to avoid impeding the dissemination of the research and development results;

- p) Intellectual property-related issues should be clarified at management level and as early as possible in the research project, ideally before it starts. Issues relating to intellectual property include the allocation of the ownership of intellectual property which is generated in the framework of the project ('foreground'), identification of the intellectual property which is possessed by the parties before starting the project ('background') and that intellectual property which is necessary for project execution or exploitation purposes, access rights to foreground and background for these purposes and the sharing of revenues;
- q) In a collaborative research project, ownership of the foreground should stay with the party that has generated it, but can be allocated to the different parties on the basis of a contractual agreement concluded in advance that adequately reflects the parties' respective interests, tasks and financial or other contributions to the project. In the case of contract research, the foreground generated by the PRO is owned by the private-sector party. The ownership of background should not be affected by the project;
- r) Access rights should be clarified by the parties as early as possible in the research project, ideally before it starts. Where necessary for the purpose of conducting the research project, or for the exploitation of foreground of a party, access rights to other parties' foreground and background should be available under conditions which should adequately reflect the parties' respective interests, tasks, and financial and other contributions to the project.

The Commission identified certain good practices that should be adopted, including:

1. Knowledge transfer between universities and industry is made a permanent political and operational priority for all public research funding bodies within a Member State, at both national and regional levels;
2. Knowledge Transfer clearly falls within the responsibility of a Ministry, which is charged with coordinating knowledge transfer promotion initiatives with other Ministries;
3. Each Ministry and regional government body that carries out knowledge transfer activities designates an official responsible for monitoring their impact. They meet regularly in order to exchange information and discuss ways to improve knowledge transfer;
4. The proper management of intellectual property resulting from public funding is promoted, requiring that it be carried out according to established principles taking into account the legitimate interests of industry (for example, temporary confidentiality constraints);
5. Research policy promotes reliance on the private sector to help identify technological needs, to foster private investment in research and to encourage the exploitation of publicly-funded research results;
6. Sufficient resources and incentives are available to public research organisations and their staff to engage in knowledge transfer activities;
7. Measures are taken to ensure the availability and facilitate the recruitment of trained staff (such as technology transfer officers) by public research organisations;

8. A set of model contracts are made available, as well as a decision-making tool helping the most appropriate model contract to be selected (depending on a number of parameters);
9. Before establishing new mechanisms to promote knowledge transfer (such as mobility or funding schemes), relevant stakeholder groups, including SMEs and large industry as well as public research organisations, are consulted;
10. The pooling of resources between public research organisations at local or regional level is promoted, where these do not have the critical mass of research spending to justify having their own knowledge transfer office or intellectual property manager;
11. Programmes supporting research spin-offs are launched, incorporating entrepreneurship training and featuring strong interaction of PROs with local incubators, financiers, business support agencies;
12. Government funding is made available to support knowledge transfer and business engagement at public research organisations, such as through the hiring of experts;
13. In order to promote transnational knowledge transfer and facilitate cooperation with parties from other countries, the owner of intellectual property from publicly-funded research is defined by clear rules and this information, together with any funding conditions which may affect the transfer of knowledge, is made easily available;
14. Institutional ownership, as opposed to the ‘professor's privilege’ regime, is considered the default legal regime for intellectual property ownership at public research organisations in most EU Member States;
15. Open access is implemented by public research funding bodies with regard to peer reviewed scientific publications resulting from publicly-funded research;
16. Open access to research data is promoted, in line with the OECD *Principles and Guidelines for Access to Research Data from Public Funding*,⁴²¹ taking into account restrictions linked to commercial exploitation;
17. Archival facilities for research results (such as internet-based repositories) are developed with public funding in connection with open access policies;
18. Mechanisms are put in place to monitor and review progress made by PROs in knowledge Transfer activities (for example, through annual reports).

CONCLUSION

This chapter has provided an overview of the function and intentions of the Lambert Toolkit and an outline of UK and European recommendations for streamlining collaboration and collaborative agreements.

421 See <http://www.oecd.org/dataoecd/9/61/38500813.pdf>.

UNIVERSITY-INDUSTRY PARTNERSHIPS: CONTRACTING, COMMUNICATION, EDUCATION AND LEADERSHIP

Dr. James J. Casey⁴²²

INTRODUCTION

Worldwide educational, technological, economic and social changes are encouraging the transformation of contractual frameworks for e-Research. This transformation must marry quality and timeliness. Various efforts in Australia, Europe, and the United States reflect this increasing technical and academic attention. Leadership for encouraging these collaborations needs to be enhanced in an increasingly change-oriented age.

This chapter discusses issues of communication, education and leadership, in addition to university contracting with companies and other entities in an e-Research world. Hopefully, this contribution will encourage more frequent, timely and productive e-Research collaborations worldwide.

The author is most familiar with the University-Industry Demonstration Partnership⁴²³ (UIDP) in the United States. Through its TurboNegotiator (TN) project, the UIDP is making a strong contribution to the changing contractual landscape.

This chapter, however, goes beyond the UIDP project to consider the importance of strong internal communication, education and leadership in supporting new contractual frameworks and collaborations. A comprehensive approach to enhancing university-industry collaborations is the preferred course of action for parties interested in such matters.

For those professionals who negotiate contracts for a living, Appendix A to this chapter contains tips for negotiating contracts. These are technical ideas that fit well within the broader environment of why university-industry collaboration is necessary.

422 Dr. Casey has written extensively on university-industry collaboration. See "The Linkage Between the Laws of Communication and University Research Administration," in *Laws of Communication: The Intersection Where Leadership Meets Employee Performance*, by Dr. Richard Schuttler (Wiley Publishing Company, 2009); "The University-Industry Demonstration Partnership: An Incremental Improvement to University-Industry Collaboration," in *Legal Framework for e-Research: Realising the Potential*, edited by Dr. Brian Fitzgerald (Sydney University Press, 2008); "Australian Legal Roundtable Advocates Streamlined Collaboration," *NCURA Magazine*, p. 14 (July/August 2008); "Long-Term University/Industry Collaborations," *R&D Magazine Academic Sourcebook*, pp. 26-27 (June 2007); "University-Industry Connections: A Small School Perspective," *R&D Magazine Academic Sourcebook*, p. 9, 11 (June 2006); "Developing Harmonious University-Industry Partnerships," *30 Dayton Law Review* 245-63 (2005); "Enhance University-Industry Collaboration," *Milwaukee Business Journal*, June 3, 2005, p. A53; "Making a Good Thing Even Better," *Research Management Review* 14(2) (Fall 2004), pp. 10-22. In addition, Dr. Casey was co-Editor and contributor to *Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors* (National Council of University Research Administrators and the Industrial Research Institute, April 2006). Additional articles by Dr. Casey that may be of interest include: "Research Administration in Hong Kong," *NCURA Magazine*, pp. 12, 14 (July/August 2008); "An Era of Uncertainty, An Era of Opportunity," *NCURA Newsletter*, pp. 4-5 (July/August 2007); "Giving it Away: Free Technology Transfer to the SME Sector," *Research Management Review* 15(1) (Spring 2006) (with Dr. Peter Kavanagh and Mr. Andy Maguire, Dublin Institute of Technology); "The Legal Dimensions of Research Administration," *Research Management Review* 10(1) (Winter 1998), pp. 7-17. Special thanks are extended to Professor Brian Fitzgerald and the entire staff at the Queensland University of Technology School of Law for their support and continued efforts in moving forward the facilitation of e-Research collaborations.

423 See www.uidp.org.

BACKGROUND

The past few years have seen a number of initiatives in Australia, Europe and the United States to facilitate university-industry collaboration. These initiatives are commendable to note, as it is equally commendable that the Government-University-Industry Research Roundtable (GUIRR, part of the National Academies in Washington, D.C.) and the Industrial Research Institute, Inc. (IRI) were investigating such topics starting in the mid-1980s and well into the 1990s (leading to the University-Industry Partnership Project earlier this decade). Accordingly, university-industry collaborations have received important attention for over two decades.

In addition to the UIDP (discussed below), some of the more notable international initiatives of the past decade include the following:

B-HERT Partnering Initiative (1996), an Australian initiative to improve the national performance of business and universities/higher education organizations. B-HERT released a report in 1996 entitled *Partners in Intellectual Property* that addressed the development and commercialization of intellectual property between Australian higher education and business.⁴²⁴

Lambert Review Report and Lambert Working Group Model Agreements (2003). Established in the United Kingdom, the Lambert Review proposed policies and strategies to improve innovation and established a Working Group to implement recommendations. The Working Group developed five (5) model research collaboration agreements and supporting materials that could be used by universities and businesses in collaborative research projects.⁴²⁵ Template agreements are one methodology used to enhance university-industry collaboration in the United States by GUIRR and IRI.

CREST OMC Expert Group Report and CREST Cross-Border Collaboration Toolkit (2006). CREST, the European Union's Scientific and Technical Research Committee, created an Expert Group on Intellectual Property in 2005. This Group consists of members from various European government departments, patent offices, and the European Commission. Seeking to produce guidelines that improve the coherence/effectiveness of IP ownership rights and develop methodologies to improve/facilitate cross-border collaboration, the Group published in 2006 *Cross-Border Collaboration Between Publicly Funded Research Organization and Industry and Technology Transfer Training* to address these issues.⁴²⁶ The toolkit is a practical instrument utilizing steps that universities and industry may find useful in facilitating inter-institutional collaboration.⁴²⁷

THE UNIVERSITY-INDUSTRY DEMONSTRATION PARTNERSHIP (UIDP)⁴²⁸

The UIDP began as the successor of the University-Industry Partnership Project (UIPP) in April 2006.⁴²⁹ Membership in the UIDP is dues-based, drawing on the idea that institutions that pay for membership have a vested interest in the projects' success. The membership drive for the UIDP

424 The Legal Framework for e-Research Project, Streamlining Collaboration in an e-Research World Discussion Paper, p. 33 (June 2008).

425 Ibid pp. 36-41.

426 Ibid pp. 44-45.

427 Ibid pp. 45-46.

428 Portions of the UIDP section made their first appearance in the article entitled, "The University-Industry Demonstration Partnership: An Incremental Improvement to University-Industry Collaboration," (Sydney University Press, 2008). See footnote 1 for the complete citation.

429 For additional information regarding the UIPP and UIDP, please see the appropriate sections of the GUIRR 2006 Annual Report. This report provides sections on the following: 1) Deemed Exports: Promoting Change on Critical National Issues; 2) The Here or There? Report: Bringing New Knowledge to the Debate Over Corporate R&D Globalization; 3) The University-Industry Partnership: An Action Agenda for More Effective Cooperation; 4) UIDP: A New Institution to Strengthen the U.S. Research Enterprise; 5) Major Workshops and Convocations: Advancing National Science and Technology Policy; and 6) The Federal Demonstration Partnership (FDP): A Track Record of Success in Raising Research Productivity.

started before the national summit closing out the work of the UIPP occurred in April 2006. The UIDP had its first meeting in December 2006 and meets every quarter. As of November 2008 there are 59 university and 28 industry dues paying members. In addition, some universities and companies are considered “friends” of the UIDP.

The UIDP is modelled after the Federal Demonstration Partnership (FDP⁴³⁰). The FDP is an association of federal agencies, academic research institutions with administrative, faculty and technical representation and research policy organizations that work to streamline the administration of federally sponsored research (the FDP Mission Statement⁴³¹). FDP members cooperate in identifying, testing, and implementing new, more effective ways of managing more than \$U.S.15 billion in federal research grants. The goal of improving the productivity of research without compromising its stewardship benefits the entire nation.⁴³²

The UIDP mission is to nourish and expand collaborative partnerships between universities and industry in the U.S. This mission is accomplished as follows:

*The UIDP accomplishes this mission via a coalition of universities and companies who engage in voluntary collaborative experiments or new approaches to sponsored research, licensing arrangements, and the broader strategic elements of healthy, long-term university-industry relations. Institutional experiments are chosen and jointly pursued by willing members when they have the potential to increase the level, degree, or ease of university-industry collaboration. A primary focus for the UIDP’s initial work will be on streamlining intellectual property negotiations.*⁴³³

The UIDP is framed by guiding principles that were created during the UIPP:

- 1) A successful university-industry collaboration should support the mission of each partner. Any effort in conflict with the mission of either partner will ultimately fail;
- 2) Institutional practices and national resources should focus on fostering appropriate long-term partnerships between universities and industry; and
- 3) Universities and industry should focus on the benefits to each party that will result from collaborations by streamlining negotiations to ensure timely conduct of the research and the development of the research findings.

The UIDP focuses on *collaborative* beta-testing of new approaches to sponsored research, licensing arrangements, and strategic university-industry partnerships. Working groups will be focused on designing institutional experiments. Equally important, the UIDP is a forum for the wide dissemination of the latest news and best practices for university-industry collaboration.

It was recognized during the UIPP (and now the UIDP) that contract negotiations must be conducted in a smarter manner. The knowledge of contract negotiators must be increased. To this end, contract negotiators should know more about the proposed project than just a written statement of work. Contract negotiators should have answers to the following questions:

- Why do the researchers want to work together?;
- Who framed the problem that led to the proposed project?;

430 See www.thefdp.org.

431 See www.thefdp.org/about_FDP.

432 Ibid.

433 See www.uidp.org/about_uidp

- Who made the creative contributions to the statement of work?;
- Who has Background IP that could have an impact on the proposed project?; and
- Who has key information or materials or prior research results needed for the project to happen?

In the end, proposed contract terms and conditions should be appropriate for the facts of the situation. This illustrates another important theme of the UIDP: there are no simple template-derived solutions for these partnerships. This focus on templates best characterized the efforts of the IRI and the GUIRR in the 1980s and 1990s.

TURBONEGOTIATOR (TN)

The first UIDP demonstration project is TurboNegotiator, a software-based tool to allow university and industry negotiators to rapidly navigate towards mutual agreement on intellectual property provisions.⁴³⁴ The UIDP found that research agreements and intellectual property provisions were among the most significant impediments to past, present and future collaboration between universities and companies.

This is the TN general process:

1. Define and describe the ‘Project Space’;
2. Populate the Project Space with examples of suitable agreement terms;
3. Develop a questionnaire to probe parameters for the proposed project and use the answers to map the project into the corresponding sector in Project Space;
4. Develop software that will guide the process further. This includes:
 - Asking questions based upon input provided by project participants;
 - Using responses to map project to a sector within the Project Space; and
 - Providing sample agreement terms for that sector (which may include explanations and the positives/negatives for such terminology choices). TN is a multifaceted tool.

WHAT TN IS AND WHAT TN IS NOT

TN is a tool for building an agreement that accurately reflects project parameters and what the partners want. It is a process for understanding needs and contributions and it is an educational tool from which all contract negotiators can benefit.

TN is interactive because it encourages discussion and includes input from all key stakeholders, including faculty, company representatives and contract negotiators on both sides of the ball.

⁴³⁴ This initiative came out of the UIPP. See the main UIDP web page at <http://uidp.org/>.

TN is constructive because it suggests terms that are fair and reasonable, leading to quicker commencement of projects. Used properly, it is also a management tool that leadership can use to strengthen staff knowledge and bolster the academic and industry bottom lines. Quality and speed are the ultimate desired outcomes.

TN is not a *proscriptive* tool. It does not provide the *right* answer or the *only* answer. *It is not coercive*. If either party is not happy with the outcome, the parties can always walk away from the negotiation or take a different approach or attitude. However, it may be the case that the parties have not answered the TN questions honestly or completely. Providing honest and thorough answers to the questions posed by TN is critical for TN success.

TN does not force or mandate a win-lose outcome. TN seeks to forge agreements that result in productive research, meet the missions of the parties and possibly lead to long-term relationships. In the end, TN seeks to foster mission compatibility on a project-by-project basis with the desirable outcome of spurring greater thought towards future collaboration.

SUMMARY FEATURES

These are the major summary features of TN:

1. TN has the ability to quickly craft an individualized agreement that allows the research to move forward while meeting the mission needs of each party;
2. TN accepts that contract negotiators are under-trained, hence the focus on TN as being a hands-on educational resource and tool for research administrators and corporate negotiators. It allows professionals to see how ‘The Law’, as embedded in university-industry contracting practice, can enhance or hinder collaboration and innovation;
3. TN requires parties to agree on project scope before proceeding to clause selection. This sounds like common sense, but it can be quite difficult in practice;
4. TN measures its own success by a ‘time to agreement’ module. As mentioned earlier, timeliness along with quality are the paramount goals of contract negotiation. There are some areas of contract negotiation, for example clinical trial agreements, where time is of the essence. This requires contract negotiators on all sides to reach agreement quickly so that research can go forward;

The UIDP is a significant step forward because it serves as a forum for financially-vested universities and companies and encourages them to propose, develop and execute demonstration projects.

THE LAWS OF COMMUNICATION (LOC) ⁴³⁵

The UIPP (and later the UIDP) identified communication as a major issue and a significant influence upon positive and negative university-industry partnerships. Communication is complementary to software-driven improvements, such as TN.

As important as the UIDP is to advance the knowledge and practice of university-industry collaboration, there are other dimensions that are equally important. Communication is one such area. Rather than speak about communication in a general sense, this chapter discusses a new project that looks at communication from the perspective of influence and organizational performance.

⁴³⁵ See www.lawsofcomm.com.

Conceived, performed and directed by Dr. Richard Schuttler, the 'Laws of Communication' project (LOC) assesses organizational communication traits. It describes how supervisor communication influences employee and organizational performance. These concepts can have an important influence upon university-industry collaboration, though the LOC do not as such address these types of collaborations.

The LOC project uses a stoplight metaphor to ascertain what communication zone your organization is in at any given time:

- Red (warning-immediate danger):
 - Do employees regularly need discipline?;
 - Do workers only do what is required?;
 - Are supervisors short sighted when planning?; and
 - Do supervisors micro-manage workers?

- Yellow (caution-trouble ahead):
 - Do workers flounder?;
 - Are employees internally competitive?;
 - Are managers inconsistent?; and
 - Do supervisors 'fight fires' or 'shoot from the hip'?

- Green (proceed-remain alert):
 - Are employees innovative, imaginative problem solvers?;
 - Do workers feel empowered to make needed changes?;
 - Do supervisors routinely provide meaningful feedback?; and
 - Are managers active, effective communicators?

How many of these questions look familiar? How common are these questions in universities and companies?

Speaking from the perspective of a university research administrator for the past 15 years, all of these questions have made their appearance at one time or another. The question for the specific area of university-industry collaboration is: How do these questions impact collaboration with other parties?

WHY ARE THE LAWS OF COMMUNICATION PERTAINING TO CONTRACTING AND NEGOTIATION?

Quite simply, the question can be answered by saying that *communication is equally internal as it is external*. Better internal communication can mean better external partnerships. In fact, weak internal communication often scuttles potential or actual university-industry collaborations. Academic institutions and companies should take a good hard look at their communication structures and behaviours to see which zone they are currently in and take appropriate steps to improve in this important area.

THE ROLE OF EDUCATION AND LEADERSHIP

Education is critical in the area of university-industry collaboration. In order for these collaborations to flourish, professionals on both sides must be highly educated in order to ensure the timely negotiation of quality agreements.

There are two ways to look at education in this context. The first context is the traditional marriage of textual knowledge and practical work experience. The academic disciplines of law, political science, business development, intellectual property and technology transfer are important disciplines for professional success in this area. Courses must give the student a grounded knowledge in business, research, law and politics. It is not enough to be versed in business, engineering and research. Students must understand how research collaborations occur in the real world, within the broader parameters of society and government. That is why a complete approach, academically, is the only route to take.

Practical work experience is obviously important too. Given that many types of contracts and agreements have different degrees of complexity, it is important that university and industry professionals accumulate their expertise in a steady fashion by working on progressively harder contracts and agreements. Some areas, such as U.S. Government contracting with the Federal Acquisition Regulations (FAR) and Defence Federal Acquisition Regulations (DFAR), are sufficiently complex that they are fields of contracting expertise unto themselves. Clinical trials represent another important and complex area of contracting.

The second context requires being educated not only in the technical aspects of collaborations, but also in the broader picture of why university-industry collaborations are necessary. Some could say that these perspectives are either 'focusing on the trees' or 'focusing on the forest rather than the trees'. The latter perspective is really about understanding the broader context and necessity of university-industry collaborations. This perspective is multidisciplinary in nature.

Leadership is a critically important dimension for university-industry collaborations. Whether you are a research and development manager for a company or a vice president for research at a university, you are in the position to direct, focus, and perpetuate university-industry collaboration. Leadership is the engine that drives *collaboration* and *knowledge infusion* forward.

Leadership is the fusion of the past, present, and future, directed towards proactive future steps of collaboration.

Leadership also requires the parties in university-industry collaboration to respect each other in the relationship. Each party has core values which represent their unique positions in society and those need to be understood and respected by the other. Leadership also requires maintaining equilibrium in the collaborations that are built and, at least for universities, will ensure that university-industry collaborations do not compromise objectivity in research. This 'Big Goal' is critical to public trust in universities.

Education is important. Leadership is the imperative.

CONCLUSION

University-industry partnerships are a fascinating area because they involve and impact upon a variety of issues, including contract negotiation, internal and external communication, managerial leadership, local and State economic development and national competitiveness in a world economy.

This chapter provides a mixture of technical and non-technical discussions that address these issues. Contract negotiation is a day-to-day, technical art and science that provides an integral connection to university-industry collaboration. Communication, both internal and external, is important to 'seal the deal' for such collaborations and to enhance the growth of additional collaborations on national and international scales. Education is the groundwork to increase the competency of contract negotiators and their understanding of the broader economy. Leadership is an essential ingredient to success on the local, national and international levels.

In the end, university-industry collaboration demands the involvement of all these areas if such collaborations are to be a permanent success. The challenges of universities and companies is to recognize such issues and make them work for their own success, recognizing that it takes at least 'two to tango' on a global scale.

APPENDIX A

Tips on Contract Negotiation⁴³⁶

The following tips on contract negotiation are loosely based upon the writings of Attorney Martin Latz in the United States:⁴³⁷

1. Get as much information from your counterpart as early as possible;
2. Maximize your leverage in dealing with your counterpart;
3. Seek fairness and the perception of fairness in negotiating with your counterpart;
4. Design a win-win 'offer-concession' strategy; and
5. Control the agenda and the pace of negotiation.

More specifically for university-industry collaborations, contract negotiators should also know the project parameters, including the following:

1. Who had the idea for the research project (professor, sponsor, both simultaneously)?;
2. Who contributed background technology and background IP?;
3. The type and importance of non-financial contributions from sponsor (proprietary information, non-commercial materials, results from in-house research, etc.);
4. The type and importance of non-labor contributions from the university (specialized equipment/facilities, building on prior research results, etc.);
5. The nature of research (fundamental to applied, along a continuum);
6. The scientific discipline(s) involved (biology, chemistry, biomedical engineering, civil engineering, etc.); and
7. The likelihood and/or expectation of inventions resulting from the proposed project.

The Offer-Concession (O-C) Strategy

As articulated by Attorney Latz, an offer-concession strategy is your internal process to decide how much you want to push the other party, and how much you want to concede to them. This is an area where internal communication is particularly important. Negotiation is part art, part science, and part psychology, best developed through academic knowledge and daily experience. Like win-win situations, offer-concession strategies are numerous.

While the O-C strategy should depend on the nature of your negotiation, there are basically two types:

436 See also James J. Casey, Jr., "A Few Thoughts on Negotiating University Contracts," NCURA Newsletter, p. 26 (April/May 2008).

437 See www.negotiationinstitute.com. These tips are loosely based upon "The Five Golden Rules of Negotiation for Lawyers," by Marty Latz, as published in Wisconsin Lawyer, pp. 27-29 (November 2004).

- 1) A competitive O-C (most aggressive); and
- 2) Problem solving O-C (least aggressive).

Most negotiations lie in between these two types. Other factors to consider in crafting the proper O-C strategy include:

- 1) The importance of a future relationship with the other party;
- 2) The number of issues on the table;
- 3) Assessing the 'zero-sum' versus the 'pie expanding' nature of the issues; and
- 4) Your reciprocal interests.

An O-C Example:

Suppose that a university and company want to establish a new research relationship. Intellectual property is the only major issue of concern to both. This is a quite common occurrence, but individual situations will have unique circumstances.

In this situation, a competitive O-C strategy is most likely to be used since intellectual property is the only major issue. But consider two additional factors:

- 1) Is there a potential future relationship here?; and
- 2) Does your counterpart use the same negotiating model?

Given these two additional factors, how would you decide your negotiating posture now?

The *Living Studies*⁴³⁸ publication released by the UIPP in the United States in April 2006 implicitly contains the issue of O-C strategies. Knowing when to offer, to concede and to fight is a science and an art that is central to being a successful contract negotiator. The ideas and suggestions provided by Attorney Latz are very useful to university and industry contract negotiators and managers because they provide depth and nuance to the fascinating area of contract negotiations.

438 See http://www7.nationalacademies.org/guirr/Living_Studies.pdf.

FIVE SOLUTIONS TO COLLABORATIVE DISPUTES

Dr. Jack Steele⁴³⁹

INTRODUCTION

The purpose of this chapter is to examine the need for a clear understanding of intentions, relationships, impact, outcomes, control, roles, responsibilities and economic motivations in collaborative research project relationships, drawn from my experiences as to how collaborative research operates in the Commonwealth Scientific and Research Organisation.

CSIRO REVENUE

The CSIRO receives approximately \$300 million dollars per year from various sources and of that about \$30 million comes from commercialisation activities such as book royalties, licence revenues and fees, company spin-outs etc. Approximately \$55 million dollars comes from contracted services work where the CSIRO provides consultancy work.

THE CSIRO'S COLLABORATIVE RESEARCH AND DEVELOPMENT (R&D) ACTIVITIES

Approximately \$215 million dollars is derived from co-investment collaborative R&D ventures where the CSIRO receives revenues to be involved in collaborative projects. Interestingly, this revenue never seems to cover the CSIRO's full costs of doing research in these projects. About 55% of the cost of doing this work would come from the CSIRO.

Altogether, co-investment and collaborative R&D activities represent approximately \$450 million dollars worth of R&D each year, representing a sizeable proportion of the CSIRO's organisational workload. This work is described using a variety of different terms, such as 'collaborative R&D', 'grants', 'CRC', 'partnership', 'joint venture', etc. Each year there is a corporate approval process for approximately fifty collaborative R&D transactions that are worth in excess of \$1.5 million dollars over a total life time value, whether they are external or CSIRO funds.

COLLABORATIVE DISPUTES

Each year there are about five transactions that have tremendous difficulties which require intervention at a corporate level. When this occurs, these transactions are investigated in order to understand what has happened by talking to all parties involved.

In most cases, these difficulties seem to involve a dispute about IP. However, they are often not just a dispute about IP. These disputes arise from the fact that there was never a discussion before the project commenced about the types of relationships to be established between the project parties. There has not been a dialogue between the parties where they discussed what the project relationship was intended to be about. Because this has not occurred, I have to get both sides to tell me what they intended the relationship to be.

⁴³⁹ See <http://www.csiro.au/resources/EMCMembers.html>.

This need to understand the relationship is crucial, as reflected in the GO8 submission⁴⁴⁰ and particularly the CSIRO submissions⁴⁴¹ to the Review of the National Innovation System. Whether it requires talking to the right person about what the real issues are or whether it requires thinking about the right design features for a contract, it's all about understanding relationships.

Perhaps what is required is some guidance at a national level, graphically presented for researchers, on what a relationship looks like in different classes of collaborations. This may even be as simple as a laminated mouse mat or a poster which describes for a researcher what the relationship is between them and their major collaborators and their major funders. It would describe why the parties are collaborating together on a project and what the role and responsibility of each party is.

FIVE SOLUTIONS TO COLLABORATIVE DISPUTES

Approximately three years ago I was requested by the CSIRO Chief Executive Officer to resolve this issue. We carried out internal investigations where we asked CSIRO business development and legal staff about their experiences in these collaborations. More importantly, we asked them to rate what they thought were the most critical issues that were impeding the ability of the CSIRO to enter into contracts and to understand project relationships. The responses that were provided were eventually narrowed down to five issues.

FIRST ISSUE: THE INTENTIONS OF COLLABORATIVE PARTIES

Our negotiators lacked clarity about what the CSIRO was trying to achieve in these collaborative projects. They either were uncertain about what the CSIRO institutional position was or they were only receiving guidance from the CSIRO scientists, who were mainly seeking resources and were unable to address and manage all of the other incidental issues arising in the project.

The solution we proposed was that there be a series of meetings with the other project parties to discuss what the other side wanted to achieve in the project. In order to improve the way in which collaborative projects are negotiated, changes need to be made in the paradigm of the negotiations. If you are negotiating from a research institution's point of view only on the issue of resources, then you can effectively make yourself a "victim" in the negotiation, which is what occurs in patents and CRC negotiation, and is not respectful of the other party.

Scientists tend to approach potential collaborative partners or clients and then hand over responsibility for the transaction to the business development or legal people, without having first discussed relationships and intentions with the other parties. In some cases, scientists tell other parties that the business development or legal people are slow or difficult and are prejudicing the project. Both of these are situations that CSIRO wants to avoid.

In negotiations with other parties, whether government or industry, the real issues that need to be discussed are: Why are they investing in the project? and; What are they hoping to achieve? Whilst there is a need for mechanical processes such as standard form agreements and revised principles, all

440 Group of Eight, Adding to Australia's Capacity: The Role of Research in Innovation, A Submission from the Group of Eight to the Review of the National Innovation System and Group of Eight, In the Interests of Innovation: Time for a New Approach to Negotiating Research Agreements Between the Commonwealth and Australian Universities, A Supplementary Submission from the Group of Eight to the Review of the National Innovation System. See <http://www.innovation.gov.au/innovationreview/Pages/SubmissiontotheReviewE-N.aspx>.

441 CSIRO Submission, National Innovation System Review and Supplementary Submission from the CSIRO to the National Innovation System Review, Agreements between the Australian Government and Publically Funded Research Agencies. See <http://www.innovation.gov.au/innovationreview/Pages/SubmissiontotheReviewA-D.aspx>.

of those will still fail if we don't enable parties to talk to each other about what their intentions are for a collaborative project and what the project is all about.

SECOND ISSUE: IMPACT AND OUTCOME MEETINGS

CSIRO realised that it needed the scientists intimately involved in making sure that collaborative projects were going to work. Scientists need to work as part of an integrated team and need to understand what a project's outputs are, what a project's relationships are and what the impact of the project will be. Ideally, an organisation needs to arrange two to three meetings between project parties where they have discussions about the impact and the outcomes they want, without talking about finance and resources. Once the parties are clear on impact and outcomes, then the resourcing issue can be discussed. This approach enables everyone concerned to understand the missions of each organisation and to build towards an ongoing collaborative mission.

THIRD ISSUE: IP OR CONTROL?

Even though issues of IP arise from time to time to disrupt a project, invariably the real issue is about control of roles and responsibilities in the project. During those first two or three meetings (when resources and finance are not discussed), time should be spent on discussing roles, responsibilities and the element of control in the relationships between the parties. If the parties can reach agreement on these points, then questions of indemnities and warranties should not be an issue. If someone tries to impose an inappropriate warranty or indemnity, then the parties can simply refer back to their discussions about the element of control in the relationships between the parties.

FOURTH ISSUE: ECONOMIC PRINCIPLES

The economic principles of the collaboration should be discussed between the parties before finance is obtained or when finance is obtained. Are the parties expecting commercial outcomes from the project or not? This discussion determines the parties' motivation to participate in the project and enables you to be effective but efficient in the way in which the project agreement is drafted. If parties are not expecting a commercial outcome, the project agreement does not have to be overly onerous, but it would still have to be able to manage any commercial outcomes if they occurred. For example, the CSIRO 'Wireless Lan' IP, which is highly commercial, arose out of twenty years of radio astronomy research which had no commercial expectations. A contractual mechanism is required that covers the commercial spectrum, without being distorted by that spectrum.

FIFTH ISSUE: REQUIRED TOOLS

It would be beneficial if the Review of the National Innovation System recommended a national set of IP principles, based on concepts that are common to the different types of Australian IP policy principles and which are hopefully not too discordant with their European and American equivalents. At present, there are different sets of IP policy principles that apply to Australian government agencies which seem disconnected from the principles used by the ARC,⁴⁴² NHMRC⁴⁴³ and other organisations.

The Review of the National Innovation System is an opportunity to capture the essence of these different policies and bring them into a national policy framework. These principles should be accompanied by a suite of standard form term sheets, contracts and decision-making processes,

⁴⁴² The Australian Research Council. See <http://www.arc.gov.au/>.

⁴⁴³ The National Health and Medical Research Council. See <http://www.nhmrc.gov.au/>.

almost an Australian equivalent of the Lambert Agreements.⁴⁴⁴ This mechanism could be recommended and used as part of the impact and outcome meetings between project parties.

IP OWNERSHIP IN UNIVERSITIES

Universities need to review their IP ownership policies in light of the recent case of *University of Western Australia v Gray*.⁴⁴⁵ In addition, universities need greater clarity and simplicity regarding IP ownership for work produced by students. Current arrangements for student produced IP are unnecessarily complex, as evidenced by student produced work in the CRC⁴⁴⁶ context. This needs to be simplified as soon as possible. CSIRO is currently reviewing research training and the issue of IP created by students will be part of that process.

CONCLUSION – THE CHARISMATIC LEADER

A number of collaborative projects that have been successful in the past have done so because they had what I describe as a “charismatic” leader. Similarly, a number of collaborative projects that have been unsuccessful have been so, for the same reason. Being a charismatic leader is both a dangerous and a thrilling position. Being an institution that is responsible for a charismatic leader is a delicate situation as some projects have failed because of charismatic misadventure, ending in a very ungraceful position for them and their host institutions. Whilst charismatic leadership is crucial for achieving collaborative innovation, both those individuals and their hosting institutions need clarity about each other’s expectations and obligations if conflicts of expectations are to be avoided. I am presently researching for eventual development any principles, good practices, charters or guidance, whether from Australia or overseas, that could apply to both charismatic individuals and the institutions who host them.

444 See <http://www.innovation.gov.uk/lambertagreements/index.asp>.

445 *University of Western Australia v. Gray* (No. 20) [2008] FCA 498 (17 April 2008). See http://www.austlii.edu.au/au/cases/cth/federal_ct/2008/498.html.

446 Co-Operative Research Centres. See <https://www.crc.gov.au/Information/default.aspx>.

CSIRO PERSPECTIVES AND INITIATIVES

Brett Walker⁴⁴⁷

INTRODUCTION

The purpose of this chapter is to examine frameworks for streamlining contracts for collaborative projects, based upon my experiences as Senior Legal Counsel for the CSIRO.

THE LEGAL PROCESS

Contracts and the legal process should not drive collaborative research projects. One needs to have a proper contractual framework in place, but this becomes problematic if the legal and contractual issues drive the collaboration. Having a contract in place to guarantee payment and set out the relationship between the parties is necessary. However, if the parties to a collaborative project ever need to reach into the filing cabinet to pull out a contract and read it in detail during the course of a research project, then this will be evidence of a significant problem in the collaborative relationship. It is good to have a contractual framework, but it should not be anything more than that.

In my view, lawyers should not be involved in the low value, low risk research contracts (although it should be noted that contract value and contract risk do not necessarily equate). It is not good for lawyers and it is not good for the researchers and the research managers for lawyers to be working on lower value agreements such as MTA's and confidentiality agreements. Project risks and rewards should be allocated appropriately between project participants, yet this issue often gets lost between the principles of the project and the contract.

STANDARD AGREEMENTS

Standard agreements have their place, but flexibility is required to cater for specific collaborative research arrangements. I remember receiving a standard contract from a Commonwealth funding agency which had the words "Not Negotiable" stamped across it like a cheque, which does not denote any flexibility at all and sends a very poor message.

RESEARCHERS AND UNDERSTANDING IP

There is a perception amongst researchers that IP per se is evil because it is anti-collaborative and stops the collaborative projects from occurring. It has to be re-enforced to researchers that the protection that IP rights provide is a tool. People need to be educated that IP is not an end in itself, but that IP equates to new knowledge. Researchers have choices as to how they chose to protect IP and how to use that IP protection. For example, a research team at CSIRO who completed an application form for five years worth of research had written in the words 'Not Applicable' in the box alongside the words 'Intellectual Property'. The research team seemed to be saying that, in exchange for receiving five years worth of funding, they would not be producing anything. The level of awareness of IP issues is improving in research institutions, however more education is needed.

⁴⁴⁷ Practice Team Leader, CSIRO.

FUNDING AGENCIES

What is important to note is the position that funding agencies play in the Australian context. These funding agencies include Commonwealth Departments, rural research and development corporations and State government agencies. A significant proportion of the collaborative research that is conducted in Australia is funded by those funding bodies. If the funding agreements used by those bodies contain certain restrictive positions as far as IP ownership and risk allocation are concerned, then the organisation that receives the funding has no alternative but to pass these restrictive positions on to other collaborating institutions. If a lead research agency has to pass those conditions on to the eventual researcher recipients of funding, that agency will be perceived by those researchers as being restrictive and as imposing onerous obligations that impede collaborative research. However, in reality, the research agency that receives the funding has no contractual freedom to do anything else unless it can negotiate a better position with those funding agencies.

FUNDING AGENCIES AND THE “PROCUREMENT APPROACH”

Some funding agencies, particularly Commonwealth funding agencies, adopt a “procurement approach” to funding collaborative research projects. They view the acquiring of specialised research services as being no different to buying a box of photo-copying paper, that is, they want to own a deliverable and they want a guarantee that it works before they will pay any money. This approach is reflected in the form of funding agreements that are sometimes used. This can be a significant problem, because we are dealing with research outcomes that are not capable of concrete delivery; the size of those outcomes is uncertain. Funding agencies also sometimes take the approach towards research outcomes of: “I need to own it. I need to own it because I bought it”. Whilst we can agree to undertake a certain process and to provide certain deliverables, such as in the form of reports, etc., it is often difficult to agree to deliver research outcomes in the same way, because unlike a box of photo-copying paper, IP is more divisible and is more amenable to distributing various rights between project participants.

FUNDING AGENCIES AND TEMPLATE FUNDING AGREEMENTS

Each of the funding agencies has their own template funding agreement. However, at a fundamental level, these agencies have similar charters and governing Acts and they all largely seek the same type of services. The fact that each funding agency has different template funding agreements from each other causes additional complexities and difficulties when having to negotiate funding for research projects. These difficulties might be alleviated if there was a set of template funding agreements that applied across all funding agencies.

RISK ALLOCATION POSITIONS

This issue concerns the need for indemnity clauses in collaborative research agreements in light of the management and control principle, which largely aligns risk allocation with common law principles of negligence. In simple terms, the common law states that if someone is negligent and they foresaw that their actions or omissions are likely to cause loss to others, then they will be liable for all losses flowing from those actions or omissions. The question is: Why alter that common law position? Why impose unreasonable levels of risk allocation onto any party to a contract when the common law has already established a benchmark for negligence?

In funding agreements, funding agencies will often take a position such as: ‘You provide us with a deliverable outcome, we own the deliverable outcome and you indemnify us for any loss we suffer because we use the outcome in any way we want’. The Commonwealth Department of Finance

Administration actually has a policy on warranties and indemnities. This policy states that agencies should not accept risks which they are not best placed to manage and control and that to do so is a breach of that policy. The irony is that some agencies in the Commonwealth domain impose such warranties and indemnities on funding agencies, including some like CSIRO who are also Commonwealth owned. They impose warranties and indemnities onto funding agencies and universities which they would not give themselves.

STRUCTURING IP OWNERSHIP AND ACCESS

Arrangements for IP ownership and access to project IP should be structured having regard to the rights that project participants need in order to achieve their desired outcomes. Historically, the need for ownership of IP in research projects has been paramount. This simplistic approach probably flowed through from dealings with tangible assets where possession and ownership provided control. However, IP is an intangible asset which is divisible in many ways (e.g. by territory or application) and this necessitates a greater amount of principled discussion early on in the negotiation of project agreements about which IP rights each party needs. In many cases the access rights that the various parties to a collaborative research agreement need can be accommodated through the grant of various licences.

The CSIRO was once involved in negotiating a funding agreement with a funding agency which used a standard template funding agreement. The agreement said that the agency would receive a non-exclusive, royalty free worldwide license to use the resulting IP of the project for anything they wanted. When the funding agency was asked exactly why they needed this licence, the agency simply stated that they just wanted the licence. This is exemplary of the procurement mentality. The agency was then asked if they wanted these rights so that they could commercialise the IP. The funding agency responded by stating that they did not want to commercialise at all, because this was not their role as a government body. After establishing this fact we asked them that if they were not intending to commercialise, what did they want to do with the IP? The funding agency finally admitted that all they wanted was the ability to use the IP in policy formulation and in communications with Ministers and in press releases. Once the funding agency had finally told us their exact needs, we were able to provide them with the relevant rights to do so and the research agency was able to retain rights in the IP for commercialisation and other purposes. This experience is an example of why IP ownership and access arrangements should be considered at an early stage in project negotiation in order to reach a mutually agreeable solution.

PUBLIC GOOD VERSUS COMMERCIAL RESEARCH

CSIRO researchers have sometimes said to me that they did not have to worry about IP rights in projects or having to read the terms of a contract, because the research produced is for the public good. However, if a researcher is asked whether or not they would want to publish the research results and the researcher says “yes”, they have often failed to realise that there may be a clause in the contract which makes publication subject to the funding agency’s unfettered discretion. Accordingly, even researchers that are carrying out research for the public good must have some basic understanding of the terms of the research contract and basic IP rights. In addition, if a research team develops a product with public funding and it becomes commercialised, this again requires an understanding of the terms of the research contract and IP rights. The distinction between public good research and commercial research is blurred because so many research agencies receive funding from both publically funded bodies and from commercial organisations. It is worth noting that the term “public good” does not have a well-defined meaning and should not be avoided. All research by definition is public good as it serves to add to the general body of human knowledge.

PUBLICATION AND IP PROTECTION

Publication and IP protection are not mutually exclusive. Researchers seem to believe that publication and IP protection are two concepts that do not work together, however both publication of research results and IP protection can be achieved if handled sensitively. These issues should be raised with researchers early on in negotiations and again during the publication approval process.

OPEN SOURCE

The term ‘open source’ does not mean that there are no strings attached to using open source software in research projects – this is a common misconception. Researchers sometimes download open source software from the web to use it in the development of another piece of software. This often results in researchers thinking that there is no third party IP in the new software, still maintaining that it is all “open source” when questioned on this point during an IP due diligence audit. In summary, open source licensing does not mean that one does not need to worry about IP rights or contractual terms.

RESEARCHER’S UNDERSTANDING OF IP

Researchers need have to have a basic understanding of IP rights and accompanying legal issues, such as confidentiality, IP ownership, patentability and infringement of IP rights. I think that funding agencies and emerging research leaders would regard it as core knowledge and as a core competency that researchers need to have, particularly in the commercial sphere. Old style researchers sometimes resist this position. However, researchers need to have that level of knowledge, so they can understand the basic principles and converse with funding agencies and lawyers. In particular, most funding applications require researchers to identify background IP and third party IP and a basic level of knowledge is needed to complete these applications correctly.

TERM SHEETS

For multi-party transactions or more complex ones, a “term sheet” which details the key principles for the research project should be used. Parties can often begin the contract phase of negotiations, despite not having reached agreement on the basic principles to govern the project. Parties can end up fighting over an additional comma in a contract clause at the same time as having a fundamental argument about who owns the IP or who has the rights in the IP, which is not particularly constructive. Principles should be established first before parties can move on to drafting a contract. Lawyers should not look at a contract until the principles for the project have been agreed to by all parties. They have to be able to identify what the key issues of principles are as opposed to any drafting issues.

Term Sheets could be designed for specific transaction types in a tick-box format style. This format allows researchers to provide their thoughts on IP ownership, outputs, warranties etc and which can be given to the other project parties for their input. Any disagreements as to issues on the terms sheet can at least be addressed at a basic principles level before the contract drafting phase and avoids such issues getting mixed up with drafting issues.

RESEARCHER’S INVOLVEMENT

This failure to agree on principles may stem from a perception amongst researchers that when they receive project and funding approval that the project is a “done deal” and there is no need to be involved in the contractual process. There is sometimes a reluctance to get involved in the

contractual process at all. Certain researchers believe that after they obtain the funding letter, then it's the responsibility of the lawyers or the research officers to deal with it, that they are to be left alone to research and are "not to be bothered" with the contractual process. It just doesn't work that way. Lawyers need input from the researchers to make fundamental decisions about IP ownership, IP use rights, background IP, risk allocation and IP due diligence.

PUBLICATION APPROVAL PROCESS CLAUSES

Many funding agency agreements state that they must approve all publications arising out of funded projects. That is problematic for a lot of research organisations because publications are such a fundamental part of career progression for researchers. Accordingly, funding agencies need to be asked why they want this approval power and what is it exactly they want to approve: Is it technical content? Do they want to prevent publication of results that might be politically or commercially inconvenient? Do they want attribution? This has to be clarified early on with the funders so that this position can be negotiated and approval clauses can be tailored to the publishing needs of the researchers and the approval needs of funding agency. If a principled discussion occurs early in the piece, the interests of both the funding agency and the researcher can be accommodated.

WARRANTY CLAUSES

Template agreements often contain clauses that require parties to warrant to the best of their knowledge that they own the background IP and have not misappropriated it, which is fine. However, some clauses try to extend a warranty for issues beyond the parties' actual knowledge or ability to identify such risks. This occurs particularly in the patent sphere, where they may require a party to warrant that in conducting the research project the researcher will never infringe any third party patent position, despite the fact that the nature of patents is that such that one could never really provide such a warranty. These clauses are typically located at the back of the contract and are treated as 'boiler plate' clauses in the same way as the 'force majeure' clause or the 'service of notices' clause. In some cases, lawyers have not looked at them for years. I think they are overrated in terms of protection and may cause more damage to the relationship between project parties than the protection they provide.

OTHER UNNECESSARY CLAUSES

Other unnecessary clauses that complicate matters include: Clauses that require moral rights consents to be provided (it is not clear if parties to a research project really understand this one); Clauses for reporting requirements, such as requiring the Vice-Chancellor to sign off on every quarterly financial statement on the project report or requiring accountants to conduct a six monthly audit; and some conflict of interest clauses which fail to identify what a "conflict of interest" actually is in the broad context of a collaborative research project.

CSIRO INITIATIVES

CSIRO FAST TRACK⁴⁴⁸

CSIRO has implemented an online 'FastTrack' agreement system, which produces low risk, low value, short form, plain English, research-led contracts. FastTrack contracts are generated by paralegals and research staff and has built-in risk assessment capability. These contracts do not involve lawyer participation and there is a reasonably low level of requests for amendment, leaving lawyers to concentrate on more complex transactions.

448 See <http://www.csiro.au/org/ps91.html>.

CSIRO carries out training for researchers on IP and legal issues that arise in research projects. These generally consist of half day training sessions within particular research units, covering subjects such as the organisation's IP policy, basic IP law and contract law, and are conducted with the business development staff and lawyers. The training is tailored to different areas of research, for example, a presentation for a researcher in the IT/science area will be slightly different from a presentation to a biologist.

UMBRELLA AGREEMENTS

Negotiating agreements with collaborating institutions on a transaction by transaction basis can be a slow process. What CSIRO does increasingly with major collaborators is to establish umbrella agreements. The idea is that a contractual framework is already put in place between parties who already have joint works, such as Australian or overseas universities. The CSIRO is then able to implement individual agreements for projects, material transfers and confidentiality underneath that umbrella agreement. This means that the agreement for each collaborative project simply becomes two pages of the project details with the default terms of the umbrella agreement applying. This method seems to have worked reasonably well and may be a good way of streamlining agreements if collaborative work is regularly undertaken with a certain institution.

PATH TO IMPACT

When designing a contract, particularly the IP ownership, risk allocation and publication clauses, the first question that needs to be asked of researchers and business partners is what impact do they want to achieve by being involved in the project. Are they looking to license software? Or are they looking just to disseminate a report? Such questions avoid the need to draft an over-comprehensive contract with lots of unnecessary provisions. The CSIRO devotes a lot of work to asking those initial questions because the answers save a huge amount of time in drafting. Why design a complex contractual patent licensing strategy, when the end result is simply to put the project report on the web? Model contracts need to be designed around the type of impact paths that researchers and research organisations want.

STUDENT AND VISITOR AGREEMENTS

In Australia, student and visitor agreements for work on joint projects with the CSIRO can become unnecessarily complex. Different universities have different policies and CSIRO has different agreements with each of them. These agreements should be simple and will need work on them in order to streamline them and to reduce the excessive amount of time spent on negotiating them.

AUSTRALIAN GOVERNMENT INITIATIVES

The 'Statement of IP Principles for Australian Government Agencies'⁴⁴⁹ is a useful document, although it may require wider implementation within government agencies. The Australian Research Council's 'National Principles of Intellectual Property Management for Publically Funded Research'⁴⁵⁰ also has good points. The current National Review of the Innovation System has the potential to drive improvement in this area and is an excellent opportunity to remove some of these impediments to collaboration.

449 See http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies.

450 See http://www.arc.gov.au/pdf/01_01.pdf.

CONCLUSION

Lawyers have no desire to spend weeks negotiating a basic collaborative research agreement or an MTA agreement or a student agreement. There are much more productive things that we could be doing the more we make these agreements standard. Many of the researcher comments in the OAK Law Project's survey on academic authors⁴⁵¹ and the Legal Framework for e-Research Project's survey on collaborative research agreements⁴⁵² are similar to those that CSIRO received with its own internal surveying of its researchers; that the contracting process is too slow and that lawyers are obstructive of the process, etc.

It is really a resourcing issue which stems from the fact that so many transactions that could go through streamlined processes, do not. In reality, less than 10% of transactions probably need to have comprehensive and complex negotiation and 90% or more could be conducted through a more streamlined framework.

451 See OAK Law Project, Academic authorship, publishing agreements and open access: Survey results at http://eprints.qut.edu.au/archive/00013623/01/13623_3.pdf.

452 See Legal Framework for e-Research project, Legal and project agreement issues in collaboration and e-Research: Survey Results at

<http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>.

THE BUSINESS OF KNOWLEDGE TRANSFER: A MATTER OF STRIKING THE RIGHT BALANCE

Alex Fowkes⁴⁵³

INTRODUCTION

Over the last decade I have, in various capacities, supported the business of acquiring and exchanging scientific knowledge from and with academic, government and industry laboratories. Throughout this time I have observed the frustration of many scientists as they confront the drag on their research caused by the administrative processes designed to preserve the commercial value of that research. They lament the passing of the good old days, the time before the ‘suits’ dictated when and how they could work with other scientists and exchange the fruits of their research, the time before academic knowledge transfer became a business.

KNOWLEDGE TRANSFER – THE IMBALANCE

The business I am talking about goes under a variety of labels such as ‘Technology Transfer’, ‘Licensing’, ‘Business Development’ and a number of others. At its core, the business carried out under these labels is the business of transferring, in one guise or another, knowledge created in academic and industry research. I will simply refer to it as *knowledge transfer*. I will refer to organizations that administer this business as *knowledge transfer offices*.

One should sympathize with the frustrations of the scientists, as there is little doubt in my mind that an unnecessary drag on research is being created by the manner in which the business is currently conducted. However, I don’t believe the business itself is fundamentally flawed. It has brought to fruition many innovative technologies, spawned many new companies and created wealth. Instead, I believe there is an imbalance in the way the business is being conducted that is causing the drag on research. This is an imbalance that can be readily redressed.

At the heart of the imbalance I refer to is an excessive focus on one knowledge transfer area, being the licensing of commercially valuable, patentable knowledge. This excessive focus manifests itself in two ways.

First, there is insufficient resource, skill and experience allocated to those knowledge transfer transactions that are primarily aimed at accelerating further research as opposed to creating commercial value.⁴⁵⁴ This means the creativity needed to solve issues that arise in negotiating these

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⁴⁵⁴ Many of those departments or offices tasked with managing the Knowledge Transfer business are, by design, limited to licensing patents and high commercial value transactions. Others simply do not have the resources or incentives to focus on the high volume transactions that generate little financial return but that are essential to the smooth flow of knowledge and collaboration between researchers.

transactions is missing. These transactions often get caught in an unproductive, administrative negotiation loop as those without the authority or knowledge to do any better simply quote from policies or standard operating procedure until one side surrenders or the scientists give in and move onto something else.

Second, there is an entrenched, excessive bias towards protecting commercial value at the expense of enhancing knowledge transfer and collaboration. In other words, efficient knowledge transfer is nearly always sacrificed if there is any perceived risk, however remote, to potential commercial value.

In the first and second boxed inserts at the end of this chapter I set out two transaction examples involving knowledge transfer with the primary aim of advancing research. In both cases, what is notable is that the value of this primary aim is ignored entirely. Any risk to intellectual property appears to be unacceptable even if it means that the knowledge transfer doesn't occur. In short, the commercial interest trumps, absolutely, the interest in advancing science. There is no effort to find a solution that strikes a balance between these two interests.

KNOWLEDGE TRANSFER – THE INTERESTS

To understand how this imbalance has come about we need to take a step back and look at the purpose and process of research knowledge transfer.

The advancement of science is founded on the flow of knowledge within the academic and industrial research communities. This knowledge flow includes both tangible and intangible items. Some items only have value as information or materials that will advance other research. Some have additional value in industrial application. This is technology. Some technology can be protected by property rights that may give it sufficient additional value to attract investment to enable its commercial development.

Academic and Industrial research organizations generally have dual interests in managing the creation and flow of knowledge. The first is to accelerate further research and knowledge creation. I will call this the *research interest*. The second is promoting technology development and utilization for, in the case of academia, the public benefit and, in the case of industry, for the benefit of investors. I will call this the *commercial interest*.

In academia, the research interest is achieved by broad and efficient dissemination of knowledge. Publication is the predominant form of dissemination. However, material transfers, consulting and collaboration are other forms that are relied upon when publication may not be as effective, such as when disseminating expertise, experience, technical capability and materials.

In industry, the research interest is achieved by ensuring industrial laboratories access the knowledge they need to drive their research projects to ultimately deliver products that will generate revenue. In both academia and industry, the commercial interest is generally achieved by attracting sufficient internal or external investment to commercialize the technology. This usually requires securing sufficient property rights in the technology to give the investors some hope that they will get a reasonable return on their investment.

Prior to the 1980s, academics in the U.S. focused almost exclusively on the research interest. The business of developing and exploiting technology was left to industry. However, many became concerned that this resulted in technology lying fallow in academic laboratories. In the U.S. the *Bayh-Dole Act* was designed to change that. In essence, the commercial interest was made law for all those conducting research on the U.S. Federal Government dollar (the majority of U.S. universities and

research institutes).⁴⁵⁵ The business of academic knowledge transfer can trace its birth to this legislation.

While the research and commercial interest are not mutually exclusive, there is a tension between the two. The processes necessary for securing property rights and attracting investment can inhibit the dissemination needed to meet the research interest. Striking the right balance for each knowledge transfer transaction is not easy. Each transaction presents unique facts and a variety of scientific, operational, legal and financial considerations that need to be weighed to find a balance. This variety defies standard approaches dictated by even the most thoughtfully crafted operating procedures, policies or ‘plug-and-play’ contract systems.⁴⁵⁶

KNOWLEDGE TRANSFER OFFICES

In the business of knowledge transfer it is the knowledge transfer offices that are tasked with operating the business and finding the balance between the dual interests. The challenge they face can be likened to the conveyor manager in hypothetical mining operation described in the third boxed insert below. The flow of rocks along the conveyor represents the flow of knowledge. Some of that knowledge is capable of technical application and may have additional value if it can be processed and protected appropriately.

Academic and industrial knowledge transfer offices play a critical role in controlling the speed with which knowledge flows in or out of their organization. If they perceive that the commercial interest is relatively more important than the research interest, then they will favour judgments that maximize the protection of intellectual property and commercial opportunities at the expense, if necessary, of speeding the flow of knowledge transfer.

Academic knowledge transfer offices generally define their mission and goals almost exclusively in the commercial interest. They focus on knowledge commercialization. This means a focus on technology, especially patentable technology. Rarely have I come across a representative of an academic knowledge transfer office that has volunteered ‘facilitating research through knowledge transfer’ as a one of their goals. Instead, they cite revenue generation, company spin-outs and number of patents filed.

This is hardly surprising given that revenue, patents and spin-outs are the achievements measured and rewarded by the university or institute’s that they serve. Universities and institutes expect their knowledge transfer offices to pay their own way and to be profitable. This is regardless of the fact that few knowledge transfer offices will ever return substantial profits.⁴⁵⁷ In this context, the

455 The Bayh-Dole Act (35 U.S.C. §§ 200-212) enacted in 1980 states: “It is the policy and objective of the Congress to use the patent system to promote the utilization of inventions arising from federally supported research or development...” (§200).

456 This challenge is illustrated in the biomedical context by the efforts of the National Institutes of Health to provide guidance on the sharing of research tools in response to “problems encountered in the dissemination and use of unique research resources, the competing interests of intellectual property owners and research tool users...” The NIH found “...that intellectual property restrictions can stifle the broad dissemination of new discoveries and limit future avenues of research and product development. At the same time, reasonable restrictions on the dissemination of research tools are sometimes necessary to protect legitimate proprietary interests and to preserve incentives for commercial development.” To help its funding recipients achieve the appropriate balance the NIH issued the “NIH Principles and Guidelines for Sharing of Biomedical Research Resources: Final Notice,” published December 23, 1999 in the Federal Register (64 FR 72090) from which the above quotes were taken. While the Guidelines were a laudable effort, they highlight that there is no standard or simple answer to striking a balance. At best broad principles can be articulated which then rely on the exercise of thoughtful judgment for implementation.

457 A U.S. Perspective on Technology Transfer: The Changing Role of the University,” Lita L. Nelsen, Nature Reviews/Molecular Cell Biology, Vol. 5, March 2004, p. 1-5. “A few university inventions — no more than a few dozen among more than twenty thousand that have been patented in the past 20 years — have resulted in more than \$100 million to each of their universities.” “Foremost among those mistakes are unrealistic expectations — for example: that a sustainable technology transfer organization can be built with a small commitment of funds and personnel; or (worse) that a bolus of investment up-front and hiring of a high-priced business leader with visions of building a highly profitable

approach taken to the humble consulting agreement illustrated in the first boxed example is almost inevitable.

Industry knowledge transfer offices are more variable than their Academic cousins in terms of structure, mission and goals. However, the focus is, once again, heavily weighted towards protecting the commercial opportunity. In industry you may consider this a given, after all the whole point of the exercise is to achieve commercial returns. However, research produces the next generation of products. The faster, more efficient and productive the research the better placed the business is to generate and sustain profits. In research based industry, research *is* the business' future and facilitating research *is* facilitating commerce.

However, as intellectual property is the bedrock of the company's business model, the culture remains that intellectual property must be protected at any cost. The consequences of impairing the company's intellectual property frequently weigh more heavily on the knowledge transfer professional's mind than the frustration of the company's researchers who feel their project is being unnecessarily slowed. Not surprising then that the research interest was all but ignored by the industry party in the second boxed example.

Finally, within both Industry and Academic knowledge transfer offices, there is a professional bias away from transactions of limited commercial value. The humble 'MTA', 'Consulting Agreement' and 'Sponsored Research Agreement' and the skills necessary to negotiate them efficiently and effectively are unfashionable. They are not considered interesting, challenging or career enhancing enough to attract the knowledge transfer professional's focus. Nor do they hold the promise of riches to attract resources from overly stretched knowledge transfer office budgets.

Instead, these transactions are pushed into the hands of those with insufficient training and experience to understand and find solutions for the subtle differences and challenges that these transactions invariably reveal. In addition, contract and other systems are devised to try and automate these transactions. While useful tools in the right hands, they are never a substitute for the experienced and skilled professional.

CONCLUSION

The concept of knowledge transfer, as a business, is not fundamentally flawed. My point is simply that, in both academic and industrial research, there is need for a greater balance between the commercial and research interests. The balance may differ from organization to organization. What is critical is that this balance must reflect the broader mission, objectives and strategy of the organization. If advancing science through research dissemination is an organization's priority, then that needs to be reflected in how they conduct the business of knowledge transfer.

How can this be achieved? I suggest the following three principles are essential to an organization developing a more balanced approach.

1. Organizations should adopt an overarching 'Knowledge Transfer' strategy that clearly articulates the balance that the organization seeks between their research and commercial interests. If the balance is weighted towards securing commercial value, then the organization must understand that this may result in some slowing of knowledge dissemination and

enterprise on the basis of commercial models will result in financial success within a couple of years; or even that the effect on the local (or even national) economy will be significant within a few years; and (worst) that the financial returns to the university from technology transfer will be sufficient to support the university and remove the need for government support."

collaboration. Likewise, if the balance is weighted towards the research interest, then the organization must understand that this may result in some commercial value being diminished or lost;

2. The goals and reward system for the internal departments, offices and staff involved in knowledge transfer must be aligned with this overarching 'Knowledge Transfer' strategy and must reflect the balance that it seeks to achieve between the research and commercial interests. In other words, goals and rewards should contain measures for achievement of *both* the research and commercial interests in a weighting that reflects the balance in the 'Knowledge Transfer' strategy; and
3. The knowledge transfer profession needs to turn greater attention and recognition to the skills, capabilities and best practices that are needed for transactions that involve little commercial value. The value of advancing science as an end in itself and the value that the profession can bring to achieving that end should be reflected in greater professional training and discourse on these matters.

The knowledge transfer business and the professionals within industry and academia that run the business. None achieved a great deal over the last 30 years. However, it is important for the knowledge transfer profession and for the leaders of the universities, institutes and companies that they serve to remember that their value is measured not just in the dollars they generate, but also in how they facilitate broader research endeavours.

Example 1: Academic Consulting

Universities have historically permitted their academics to consult for others in their personal capacity, usually subject to reasonable limitations on the time spent on such activities. Consulting allows the expertise of academics to be shared with others. It should go without saying that consulting assumes the use of the academics brain power only and not use of the universities facilities, resources or property. Nonetheless, there is usually a university policy that articulates this.

Not surprisingly, the policy also usually deals with intellectual property. However, many policies I have seen go beyond stating the simple principle that the universities intellectual property should not be used or misappropriated by the academic. If you are thinking of engaging an academic as a consultant and take the time to read the multi-pages of almost impenetrable legalese, you will find that the university asserts an interest in any of your research that the academic consultant may have contributed towards. The interest may be waived on grounds that will be determined by the university at some future date.

This policy is shoe-horned into the contract between the academic and you, either by a direct reference (usually via a web link) or helpfully sent directly to you with a friendly note that you are now 'on notice'. The university then refuses to be involved in any negotiation of the consulting contract, as it is a personal matter between the academic and you.

Now, it is legitimate for the university to be concerned about the misappropriation of its property or misuse of its resources under the guise of a consulting agreement. However, is it reasonable to shift the entire burden of the risk to you, by asserting an interest in your research, based on its status and not on fact?

Let's put aside for another day the question of reasonableness. Instead, let's look at the basis for taking this position. The explanations I have heard invariably boil down to something like this: "Yes, we agree the risk is remote, but, the university does not receive anything from the consulting arrangement, so why should we accept any risk?"

Granted there is no financial return, but what about the role of academic consulting in meeting the university's 'advancement of science' mission? Surely, providing a mechanism for an academic's expertise and knowledge to be shared to advance the research of others achieves something for the university, even if it isn't measured in dollars and cents? The answer appears to be no and therein lies the problem.

Example 2: Industry Compound Transfer

In the pharmaceutical industry, companies have historically supplied their compounds to academics free of charge for use as research tools.

The compounds are usually supplied under some form of material transfer agreement that addresses a range of issues with intellectual property being the most prominent. I have seen many of these contracts and am surprised how many provide that the company must be granted exclusive rights (by license or assignment) in the research in which their compound is used.

Now, it is legitimate for the company to be concerned about intellectual property that may be generated in research it facilitates that could encumber its compound in some way. However, is it reasonable to claim not just this intellectual property but all intellectual property whether or not it relates to the compound? Further, even if limited to compound related intellectual property, is it reasonable to claim exclusive rights?

Once again, let's put aside for another day the question of reasonableness. Instead, let's look at the basis for taking this position. The explanations I have heard invariably comes down to something like this: "Yes, we agree the likelihood of compound intellectual property being generated is low, but the Company is giving away its core asset for free, so why should we accept any risk?"

Granted there is no financial return. But what about the value of promoting good will with academics that they may wish to collaborate with in the future? Or the value of promoting research that may add to the body of knowledge on which their own research is based? Or learning more about their compound through research they don't have to pay for? The answer appears to be this value is not considered. And once again, therein lies the problem.

Example 3: The Mine – Managing the Flow of Gravel

To illustrate the challenge faced by those in the knowledge transfer business, let's imagine a mining operation in which the rocks dug from the ground flow along a conveyor belt. At the end of the conveyor system, the rocks are crushed into gravel which is then disseminated broadly to all buyers of gravel. Occasionally, some of the rocks contain gold or gems. The mining company employs experts to stand along the conveyor to spot and divert rocks that may contain gold or gems. Rocks that are diverted go through a separate process to evaluate their potential value and to then extract the gold or gem. Rocks of low value and the rubble left after extraction are returned to the conveyor.

Identifying the rocks that may contain gold or gems is not easy. They look like all the other rocks and on the occasions that a sparkle catches the eye the miners are often reminded that not all that glitters is gold. The manager of the mine's gravel business wants the conveyor running as quickly as possible with as few rocks diverted for evaluation as possible. The manager of the mine's gold and gem business wants as much of the gold and as many of the gems as possible identified and extracted. The manager of the conveyor system has to try strike a balance and keep them both happy.

In striking this balance, the manager of the conveyor system can do a number of things:

- He can hire more spotters;
- He can hire more experienced spotters or spend more time and money building the experience and skills of his current spotters;
- He can try to make the spotting, evaluation and processing systems more efficient by developing procedures and tools that assist his staff;
- He can control the speed of the conveyor system giving his spotters more or less time to select the right rocks;
- He can adjust the evaluation and processing systems making them more or less detailed and robust, either increasing or reducing the risk those rocks containing gold and gems will be returned to the conveyor to become gravel.

The first two options help him keep both the gravel manager and the gold and gem manager happy. However, they are never popular with the mine owner, who seems to resent every dollar the conveyor manager spends.

The third option will help him run the conveyor a little faster without increasing the risk that gold or gems will be missed, but the speed improvements are incremental at best. He knows of no automated system or tools that can replace the cool eye of an experienced and skilled spotter.

The last two options are completely within his control and are where his judgment is critical. If he gets the balance wrong, either the gravel manager or the gold and gem manager are unhappy. In exercising his judgment, he is influenced by his perception of the relative importance of the gravel and the gold and gem businesses. His perception will be determined by express guidance from the mine owner, the manner in which he is rewarded and his own biases or interests.

If the mine owner tells the conveyor manager that the gold and gem business is where the profits are, the conveyor manager is going to focus on keeping the gold and gem manager happy at the expense of the gravel business. If his pay rise and bonus are measured on the success of gold and gem business, he is going to increase his focus on that business. If he personally considers that the gold and gem business is more interesting and it is the prospect of success in that business that gains him greatest kudos in the Guild of Conveyor Managers, then his bias towards that business becomes almost total.

NEGOTIATING RESEARCH CONTRACTS IN AN INTERNATIONAL ENVIRONMENT

Saveria M. Dimasi⁴⁵⁸

BACKGROUND

THE CONTEXT

This chapter contains a short summary of some observations and conclusions drawn from a study tour which I undertook in June-August 2006. The tour encompassed six universities around the world, all with significant research profiles. The study tour was possible as a result of an initiative arising out of the University of Melbourne's participation in the Universitas 21 (U21) network of universities. A major focus of my study tour was to:

- Explore, particularly from a legal perspective, how each of the six universities that I visited facilitate, resource and negotiate internationally funded research grants, contracts and collaborations; and
- Assess any implications for policy and practice and to make recommendations, primarily in relation to my own university, but also more broadly.

UNIVERSITIES AND INTERNATIONALISATION

While universities in Australia have increasingly recognised the importance of having an international focus, over the past couple of decades, that focus has largely been directed towards international student recruitment.

As a generalisation, identifying potential international research collaborations and funding opportunities have not been a core focus at an institutional level, at least not in the same manner as international student marketing and recruitment has been. Nor, until relatively recently, have Australian research intensive universities articulated an explicit aim of developing strong international research profiles.

Undoubtedly, opportunities to engage in international research collaborations and to access research funding from overseas are noted and applauded when they occur. This is certainly the case at the University of Melbourne. However, it is fair to say that in the past, their occurrence has been perceived, implicitly or otherwise as the responsibility and the interest of individual researchers seeking to pursue collaborations with colleagues in similar or complementary fields overseas. By and large, past international collaborations have been identified, developed and carried out by individual academics whilst developing their own personal research networks. Occasionally and more recently, such international collaborations are being developed at departmental or faculty level, but less often at institutional level.

⁴⁵⁸ Director, Legal Services, The University of Melbourne: The views expressed in this essay are mine and do not purport to represent the views of the University of Melbourne on any subject matter.

Australian universities have not been alone in their more limited focus on particular aspects of internationalisation. In a speech in 2006⁴⁵⁹, the President of the National Singapore University, Professor Shih Choon Fong commented that:

“Internationalization’ is a popular word in higher education today. For many, it often involves interaction at the periphery. These include student exchange programs, overseas stints and short term staff visits. These efforts are a bit like diplomacy – we tend to defer to one another’s traditions and practices. As a result, one might have few expectations of significant impact on educational innovation, research collaboration and organizational culture”.

He went on to say in the same speech:

“Globalization’ goes beyond ‘Internationalization’. To globalize, universities need to engage each other in a deeper and more substantive way. This involves multiple levels of interactions, closer to the centers of the respective institutions. The effects are transformative and significantly impact the organizational practices and culture of partner universities. Examples of deep engagement include dual and joint degree programs, jointly managed research centers in strategic areas, and talent sharing. “

In the last few years and with the growing emergence of multi-disciplinary research facilitated by e-Research networks which increasingly make geographic boundaries irrelevant, ‘internationalisation’ and ‘globalisation’ are taking on new and broader profiles. While international student and staff exchanges are still a critical cornerstone of Australian universities’ international profiles, there is now an increasing focus on identifying and facilitating international research collaborations, not only at the individual academic level but also at an institutional level. The language now, as international rankings become ever more important and, in the face of a rapidly changing global society, is about global challenges and strategic positioning for a university as a whole, technologically, culturally and economically.

THE PROJECT SCOPE

UNIVERSITIES VISITED

It is in this context that this study tour was arranged to cover six universities in four different legal jurisdictions. The main focus of the project was to examine, at a practical level, how each of the universities visited manage the facilitation, negotiation and review of international research contracts and collaborations and whether insights could be gleaned from their approach and experience. As the project was funded by a scholarship provided by the University of Melbourne as part of its participation in the U21 network, four U21 universities were visited. They were:

- National University of Singapore (NUS);
- The University of Nottingham (Nottingham);
- The University of British Columbia (UBC); and
- The University of Virginia (UVA).

Why these universities?

There were two major reasons why this particular group of U21 universities was selected. First, all four universities visited have similarities with the University of Melbourne and in particular, all have a strong research profile and focus.

459 Globalising Universities in Asia's Global Cities, president's Colloquium, 19 May 2006, Tri-University Colloquium, Korea University.

Second, they geographically represent a broad spectrum of different, albeit common law based legal systems. The wide geographic coverage also reflects the stated U21 objective:

“to facilitate collaboration and cooperation between the member universities and to create opportunities for them on a scale that none of them would be able to achieve operating independently or through traditional bilateral alliances.”⁴⁶⁰

In addition to these four U21 universities, two non-U21 universities were also included in the study tour given their standing as world-leading, internationally focussed universities with strong research and teaching profiles. They are the University of Oxford (Oxford) and the University of California, Berkeley (Berkeley). These two universities were chosen because of their general excellence and their recognition world-wide as first class research universities.

AREAS OF FOCUS

The main areas and themes explored in discussions with relevant personnel at each university were:

- How does this university facilitate, review and negotiate internationally based research contracts and grants?;
- Are separate specific resources allocated to the facilitation of internationally based research contracts and grants? If not how are they managed?;
- What are key issues/areas of negotiation? For example, governing law and jurisdictional issues; indemnities; warranties, access to intellectual property; student issues?;
- Are there any areas or issues which are threshold issues for this university which are not negotiable?;
- Are there any sources from which research funding is not acceptable?; and
- How is performance measured in this area?

A specific and key focus of the discussions was to determine whether or not any of the universities visited allocated, either directly or indirectly, specialised legal or other resources to the facilitation and negotiation of international research contracts and collaborations.

At each university these matters were explored, some in more depth than others, depending on the availability of personnel in particular areas and the willingness of each university to engage in such discussions in detail.

OBSERVATIONS AND FINDINGS

GENERAL OBSERVATIONS

A study tour of this type cannot purport to represent a proper statistical survey of either, universities as a whole, or of the views and practices of all people at each university which was visited. It is by nature, partly anecdotal and to a degree reflects the practices, views and experiences of key individuals with whom discussions were held. It is also important to bear in mind that there are historical, cultural, and financial differences between each institution, even those in the same country.

⁴⁶⁰ See U21 Website at www.universitas21.com.

However, the information obtained, including from written policies, and the impressions formed, was still very valuable and relevant. Trends and issues can still be discerned and conclusions drawn, even from such a relatively small sample.

While each of the six universities has its own structure, influenced by its history and unique circumstances, it is dangerous to generalise. However, some general observations can be made:

- The ‘international focus’ at universities visited for this study tour was in 2006, still largely about student recruitment and staff and student exchanges;
- None of the universities allocated specific resources to the negotiation and review of international research agreements, but at some of these universities resources were allocated to the facilitation of international research opportunities;
- Most universities agreed that leveraging international research collaboration and funding was an area of increasing interest. However, at that point in time and for these universities, ‘international’ collaboration was not considered as such a distinct area as to justify dedicated and identifiable resources and personnel, or *a different negotiating approach compared to the way in which domestic research contracts and collaborations were negotiated*;
- Geographic boundaries as constraints to identifying and accessing funding sources are ostensibly more an issue in Australia and for Australian universities, than at other universities visited. The universities in England and the United States in this small sample did not particularly highlight international collaborations. This was partly, perhaps, because geographic distance is less relevant, but also perhaps because the ‘pond’ in which these universities inhabit is itself an international one. A case in point is the European Union funding received by the English universities, which was considered more of a form of specialised grant funding, rather than an ‘international’ source of funding. Similarly, while UBC in Canada reports on funding from agencies, such as NIH in the United States as ‘international’, it does not really view that funding source as truly international. Accordingly, what is considered international depends, to some degree and not surprisingly, on geographic location and perspective;
- Some of the universities visited expressed the view that the culture, in a broad sense, of the funding sponsor is often more important than the jurisdiction from which the research collaboration or contract originates. For example, certain companies may have particular cultural aspects depending on where they are from or where they are based, whilst others may not. Not surprisingly for this group of universities, at least one commented that while country of origin was not very relevant, it was more difficult to negotiate contracts from non-Commonwealth countries because of language differences;
- Even though the sample is small, some very useful conclusions can be drawn about the types of legal issues that universities spend time negotiating in relation to research contracts and collaborations. As highlighted in more detail below, the issues which are negotiated or considered important by universities in research collaborations of all kinds are very similar, regardless of the jurisdiction;
- All university offices charged with the review and negotiation of research contracts considered that they needed to be pragmatic and commercial. However, one conclusion which can be drawn is that contract negotiators in some of the other jurisdictions have ‘help’

and do not need to negotiate certain threshold issues that can cause considerable friction here in Australia. For example, in the United Kingdom, the debate about the proper costing of research has been largely won (unlike here), while in the United States ownership of intellectual property is determined by federal and local legislative frameworks, most significantly the *Bayh-Dole Act* (P.L. 96-517, Patent and Trademark Act Amendments of 1980). At some universities, students do not own any intellectual property they create, while in many U.S. States including Virginia, the issue of governing law and indemnities is not up for negotiation because it is constrained by enabling legislation. *If universities in Australia had similar help from our legislatures, the negotiation of research contracts, both domestically and internationally would arguably be much more uniform and less reliant on the negotiating power of any particular institution in any particular instance;*

- All universities visited have a mixture of legally trained personnel and non-lawyers negotiating research contracts. Not unexpectedly, the North American Universities have considerably more lawyers than the English Universities. Generally however, where there are fewer internal lawyers, external legal firms are used fairly extensively for more complex matters, especially those involving commercialisation of intellectual property. In some cases the lack of lawyers in-house reflects historical reasons. In others it is because the role of University Counsel ('Legal Office') is seen as removed from the commercial pragmatism of negotiating research contracts on a daily basis and such negotiations are conducted as part of a sponsored contracts office. A third, important, factor is cost. Research support is often not a highly resourced area. *All lawyers in this field universally expressed the view that research contracts and research collaborations were becoming more complex, with voluminous documentation and increasingly onerous terms.*

SPECIFIC OBSERVATIONS ABOUT LEGAL ISSUES

The preferred position that universities in different jurisdictions espouse, at least in theory, about key legal terms or aspects of research collaboration agreements is very similar. Irrespective of the jurisdiction, the same legal issues came up, time and again. In summary:

- No university lawyer, no matter where located, felt comfortable having to provide *indemnities in research contracts*, especially one-way indemnities to sponsors. In general, most negotiated to cap indemnities, either to the value of the contract or to insurance value. However, in some universities, notably in the United States, the ability to accept indemnities is constrained by legislation, usually at a state level for public universities. This does not mean that such universities cannot or will not take responsibility for the actions of their staff. However, they do so by means other than by providing indemnities in research contracts. By contrast, in Australia a practice has developed whereby unreasonable, open-ended indemnities have become the norm, even though they create an uninsurable liability for the party providing the indemnity (usually the university) and extend beyond common law liability. These types of indemnities are widely used, even in funding agreements from government agencies;
- Giving *warranties and representations* about fundamental research and use of third party intellectual property was problematic in all jurisdictions and all resisted it, with varying degrees of success;
- *Governing law* can be a stumbling block. When dealing with universities, especially public universities in the United States, it is necessary to be aware that they may be constrained by enabling legislation in this area. Interestingly, whilst North American universities (and not just those visited on this study tour) are comfortable about remaining silent on governing law

in research contracts, the English universities are less sanguine. This is one issue that may reflect a ‘cultural’ difference and may need to be negotiated on a case by case basis;

- Similar constraints can apply in relation to *intellectual property ownership*. In the United States, it is not only the *Bayh-Dole Act* which may apply, State legislation may also be relevant. However, if a research collaboration agreement is re-positioned to be about access to intellectual property and ensuring that the sponsor's rights are clear and unconstrained (short of ownership), then the matter is quite resolvable, as the United States experience demonstrates. In Australia, sponsors, whether commercial or government are often insistent on owning intellectual property arising from research collaborations, often irrespective of whether their contribution to such intellectual property extended beyond a partial contribution to the research funding required to create it. Unfortunately, the issue here is often positioned to be about universities taking hardline positions about ownership of intellectual property;
- To use an analogy, the creation of intellectual property can be visualised as a chain where it is not only inefficient but unworkable if at the same time as the chain is being created, there are missing or broken links or some of the links are owned by different parties. Similarly, it is unworkable for a researcher to try to develop a body of work in a particular field over the term of their career from which they can publish, teach or continue to do further research, if each research funding contract that they are successful in sourcing has different terms relating to the ownership of the intellectual property that is created with that funding. Achieving successful change in this space in Australia may be as much about educating both government and industry sponsors as requiring universities to be more flexible;
- *Template or model agreements* are used increasingly, sometimes more effectively than others. It is clear that template agreements have a better chance of being adopted and have greater credibility if they result from an exercise such as the Lambert Review in the United Kingdom or GUIRR (Government Industry Research Roundtable) in the United States. This is discussed in greater detail below;
- The approach to *student* related issues, in particular whether or not assignments of intellectual property should be obtained from students, varies according to jurisdiction and relevant applicable laws. In some jurisdictions it also reflects a pragmatic approach based on the view that a student’s main objective is to successfully graduate with their requisite educational qualification and not be concerned about the commercialisation of intellectual property.

ADDITIONAL OBSERVATIONS

THE VALUE OF TEMPLATE AGREEMENTS: THE LAMBERT MODEL AGREEMENTS

One observation to be made from all the universities visited is that in the area of sponsored and contract research there is an increasing reliance on template agreements, even if only as a starting point in negotiations.

In the United Kingdom, the significance of industry-university collaborations was highlighted in the Lambert Review on Business-University Collaborations which was commissioned by the Treasury and chaired by Richard Lambert, former editor of the Financial Times.

The objectives of the Lambert Review were stated to be to:

1. *Highlight opportunities for business-university collaboration;*
2. *Identify successful business-university collaborations that could serve as role models; and*
3. *Offer ideas to stimulate debate and shape policy*⁴⁶¹.

The Lambert Review looked at the issue of knowledge transfer in business-university collaborations. One of the review's recommendations was that universities and business should work together to produce a set of model collaborative research agreements for industry and universities. The use of these model agreements is purely voluntary. The model agreements set out a range of approaches to the ownership and exploitation of intellectual property including, for example, ownership of intellectual property by the university with exclusive or non-exclusive licensing to the business sponsor.

As noted earlier, one of the significant aspects of the Lambert Review is that it was a government initiated review, with a high level of credibility. Similarly, the inner working group which developed the Lambert Model Agreements also had credibility because it involved a broad spectrum of interests. While the Lambert Model Agreements are not necessarily applicable in all circumstances, they do provide a recognised starting point and more equal 'playing field' for negotiations between industry and universities to occur.

Similar issues have been canvassed at GUIRR in the United States. GUIRR's formal mission is, among other things:

*“to convene senior-most representatives from government, universities, and industry to define and explore critical issues related to the national and global science and technology agenda that are of shared interest...”*⁴⁶²

GUIRR is sponsored by the three National Academies: the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine. It has membership from industry and universities and the U.S. Department of Commerce also attends. It holds three meetings each year but working groups on agreed projects operate continuously, as they see fit. Once a project has been completed, the working group is dissolved.

One particular project, currently on-going, is called the University-Industry Partnership. A stated objective of the project is to:

*“develop national principles governing intellectual property negotiations between U.S. universities and industry...”*⁴⁶³

One aspect of the project is to agree principles that should govern collaborations between universities and industry and to reflect these in standard research agreements.

Drawing from these examples, Australian universities could perhaps take a leaf out of the U.K.'s book and initiate an initiative similar to the Lambert Model Agreements. To have credibility, any such exercise should be endorsed by government in some way and should involve industry interests. The GO8 (Group of Eight) universities have at least commenced the dialogue with government with their submission to the National Innovation Review,⁴⁶⁴ although it should be acknowledged that this submission focuses on government research funding agreements.

461 Lambert Review of Business-University Collaboration, Final Report, December 2003, p. 1

462 See http://www7.nationalacademies.org/guirr/About_GUIRR.html.

463 See http://www7.nationalacademies.org/guirr/CURRENT_IP.html.

464 Group of Eight, In the Interests of Innovation. Time for a new approach to negotiating research agreements between the Commonwealth and Australian Universities. A supplementary submission from the Group of Eight to the Review of the National Innovation System. April 2008

SOME RECOMMENDATIONS FOR AUSTRALIAN UNIVERSITIES

The observations from this study tour suggest that there may be some value in considering the following recommendations:

- In Australia, partly because of our geographic isolation, research intensive universities may be well served to review their philosophy and approach towards facilitating international grants and collaborations. Research funding from overseas grant funding bodies should not be seen as ‘windfall gains’ which individual researchers have responsibility to identify and facilitate. Appropriate attention and resources, not only to identify possible funding and collaboration opportunities, but also to actively facilitate them at an institutional level would be a valuable long-term investment, as has been the case in the area of international student recruitment. How individual universities do so is up to them, but an example might be to make application processes and post award responsibilities a centralised, institutional responsibility, similar to the manner in which NHMRC and ARC contract obligations are managed in some universities;
- When negotiating international research collaborations and agreements, we should take greater account of who the sponsor is and try to understand their culture (as well as their jurisdiction) as much as possible. However, in negotiations we should also be comfortable insisting on certain university-industry ‘norms’ which are accepted overseas and sometimes enshrined in legislation in other jurisdictions;
- The findings from this study tour give an insight into how universities in other common law jurisdictions approach certain aspects of contract negotiation, such as governing law, indemnities, warranties and access to intellectual property. In addition, the legislatively mandated position in other jurisdictions is a useful yardstick in relation to certain key terms for research contracts. Applying internationally accepted standard positions would also enable us to rely more on model agreements of the type acceptable overseas, and potentially to decrease the length of time necessary to negotiate research contracts, including international collaborations. Whether or not a negotiation outcome deviates from a ‘standard’ defensible position should be a conscious decision, reflecting the significance of any particular contract or collaborative opportunity for the parties, whether for strategic or other reasons;
- We should look to the growing trend overseas to develop template agreements for research collaboration with government and industry sponsors. The usefulness of template agreements is related not only to managing ever increasing workflows, it is also about educating different sectors about how to ‘stand in each others’ shoes’ and to engage in collaboration with each other. The best way to understand other parties’ interests is to stand in their shoes and be exposed to their environment and culture. As the Lambert Model Agreements have shown, to have credibility, any such exercise should involve the government, industry and university sectors.

CONCLUSION

Whether recognised as e-Research or not, technology makes it increasingly possible for researchers at universities in different jurisdictions to collaborate with each other in ways that perceive no boundaries, either in terms of discipline or geography. An opportunity such as this study tour was invaluable in allowing for frank exchange and dialogue with universities in other jurisdictions and in helping us to understand the international environment inhabited by our researchers on a daily basis.

If, universities in Australia, such as my own, want to operate in an international arena, our perspective needs to be an international one.

THE DYNAMIC DIMENSIONS OF COLLABORATION

Dr. Chris Greer⁴⁶⁵

The purpose of this chapter is to highlight the global, multi-dimensional and dynamic aspects of collaborative scientific projects, which legal agreements will need to address to be effective.

THE BAYH DOLE ACT AND ITS IMPACT ON COLLABORATION IN THE UNITED STATES

The U.S. *Bayh Dole Act* (the Act) permits bodies which receive federal funding, such as non-profit groups, universities or small businesses, to pursue ownership of inventions created by those organisations. The purpose of the Act is twofold: firstly, it promotes the transfer of research results to the marketplace in order to benefit the public and secondly, it provides incentives for university – industry collaboration to occur. One of the side effects of the Act is the proliferation of bureaucracy that has occurred. For instance, in 1979 there were 113 members of the Association of University Technology Managers⁴⁶⁶ and now there are some 3,600 members.

The Act has also had the effect of placing universities into a commercial setting. In 2006, a survey conducted by the Association of University Technology Managers of 350 universities revealed that these universities had obtained 3,255 patents, 4,963 licences, nearly 700 new products and in particular, the University of California had reported \$US190 million in licensing income for 2006. These figures have a significant impact upon the legal landscape for university - industry collaboration in the U.S.

THE ROLE OF COLLABORATION IN GLOBAL SCIENCE

Much of global science is already inherently collaborative. An example of the global nature of collaboration is the Large Hadron Collider (LHC), which is in the start-up phase at the European Organisation for Nuclear Research (CERN)⁴⁶⁷ in Geneva. It has been built with collaborative input from thousands of scientists and engineers. In addition, when the collider begins operations, it is expected to produce 15 petabytes of data each year which will then be analysed by scientists all over the world. A special computing grid is being established to transport, store, analyse and manage this data in order to provide it to the entire high energy/physics community. This data grid would enable collaborations that could literally formulate one afternoon and be completed within a couple of days or weeks. A framework for agreements that facilitate collaboration at this pace is needed.

Another example is the Berkley Open Infrastructure for Net Computing Project (BOINC)⁴⁶⁸, which enables researchers to utilise the idle processing power of personal computers around the world. Collectively, these computers would provide about 650 teraflops of processing capability. There are twenty-five projects around the world involved in the BOINC network (the Australian project is called BOINC@Australia), an example of highly distributed resource sharing for collaboration in

⁴⁶⁵ Director, National Coordination Office for Networking and Information Technology Research and Development.

⁴⁶⁶ See <http://www.autm.net/>.

⁴⁶⁷ See <http://public.web.cern.ch/public/>.

⁴⁶⁸ See <http://boinc.berkeley.edu/>.

common projects in the digital environment. Agreements that enable collaboration across many political, legal, and cultural boundaries will be needed in this era of global scale science.

N-DIMENSIONAL COLLABORATION ENVIROMENTS

TurboNegotiator is a software tool being developed by the University-Industry Demonstration Partnership (UIDP⁴⁶⁹) to facilitate negotiating agreements for collaboration. The tool is designed around the concept of an N-dimensional project space. This is a powerful concept for formulating frameworks for agreements for global collaborations and is described in the text and figures that follow.

	Academic	Nonprofit	Government	Commercial
Academic	✓			
Nonprofit				
Government	✓		✓	✓
Commercial				

Figure 1: Multiparty Dimensions

Figure 1 is a 4x4 matrix in which the academic, non-profit, government and the commercial sectors are represented in the collaboration environment. There is a strong tendency for the conventional legal process in this environment to only focus on academic–commercial collaboration and to concentrate on two party collaborations. However, when one looks at the matrix, it shows that collaboration extends far beyond such simple transactions to multiparty collaborations involving academics, non-profit bodies, government and commercial organisations which creates a fairly complex collaboration landscape. This landscape of interacting sectors is one dimension of project space.

⁴⁶⁹ See <http://www.uidp.org/>.

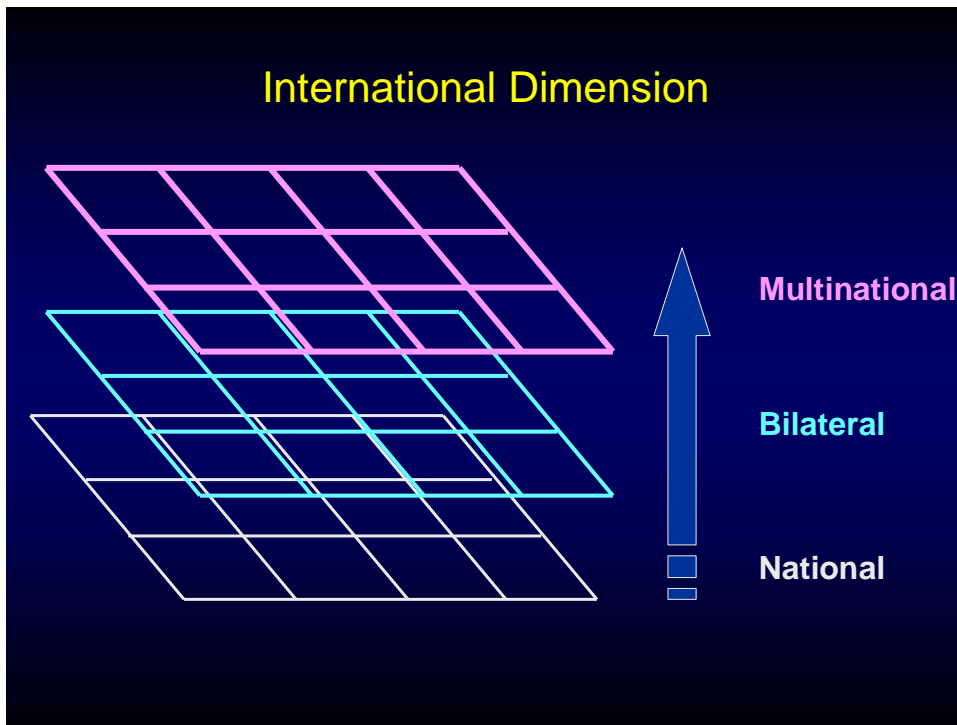


Figure 2: International Dimensions

Figure 2 shows that the Figure 1 matrix will also have to take into account the vertical dimension of national collaboration efforts (for example: interaction between Australian entities), then bilateral collaboration efforts (for example: interaction between Australian and U.S. entities) and multilateral collaboration efforts between a number of countries. All of these factors generate another dimension of complicated collaboration needs that have to be addressed.

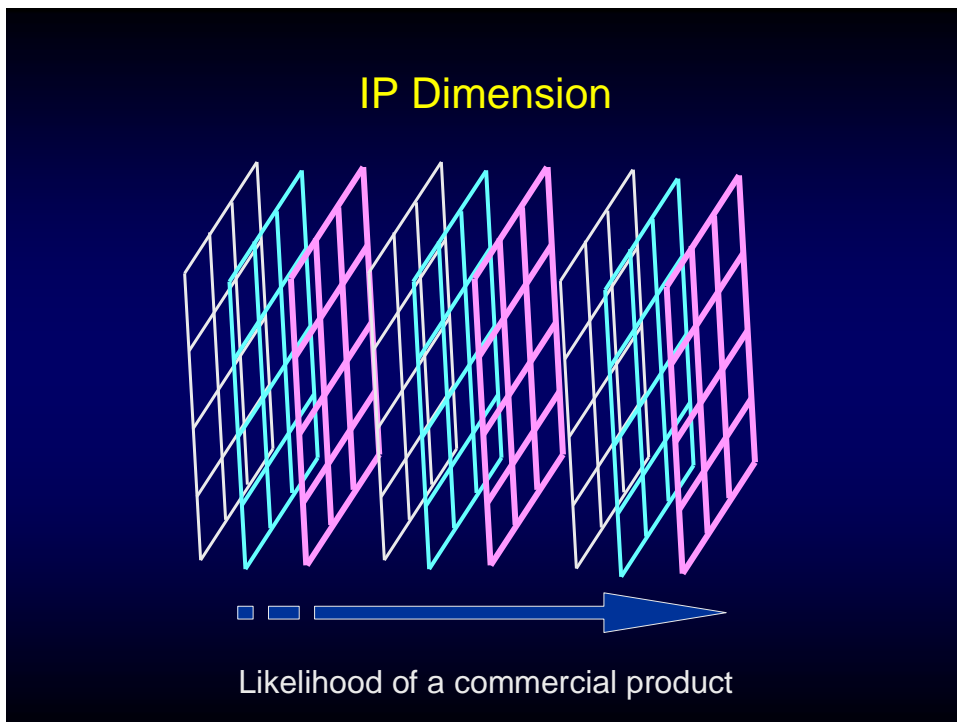


Figure 3: IP Dimension

Figure 3 shows the probability of a product arising from the matrix collaborations shown in Figures 1 and 2, with a low probability at one end to very high probability at another. This is another dimension of project space that must be considered in designing an appropriate agreement.

Other dimensions of project space include the scale of investment, the size of project, the number of people required, the capital infrastructure that is involved, the history of the background IP, the scientific disciplines that are needed, the level of research required and confidentiality, privacy and security issues.

Collaboration agreements that focus on a single part of this matrix are not going to meet the needs of science in the 21st century. The challenge is for universities, working in partnership with government, to streamline agreements in such a complex environment.

COLLABORATIVE GROUPS ARE NOT STATIC

One basis for collaboration is when the participants seek goals or capabilities that they could not have achieved individually but which they can obtain collectively. This may be because of the scale of the research challenge or the range of expertise and resources needed. Progress in reducing the scale or acquiring expertise and resources may eventually enable each participant to proceed independently, changing the landscape from collaboration to competition. Agreements must provide the means for managing this transition.

Another basis for collaboration is when the effort furthers the interests of all of the parties. If at any point the interests of one or more parties are not being addressed, then the collaboration typically ends. Further, each participant's interests in collaboration can change as the scope of the collaboration changes over time. This can lead to changes in the composition of the collaborative group. Agreements must recognize initial interests and manage changes over time.

COLLABORATION PHASES

Collaboration occurs in four phases: 1) the exploration phase; 2) the active collaboration phase; 3) the deliverables phase; and 4) the disentanglement phase.

EXPLORATION PHASE

This phase occurs before formal collaboration has begun. The parties explore opportunities for collaboration and engage in a very limited sharing of materials and ideas. Any work that is performed at this stage is being done individually and separately from each other and there is frequent re-direction of the purposes of the collaboration. It is a dynamic phase where the important thing is to build understanding and trust amongst the prospective collaborative parties. It is important to minimise any constraints on the parties during this phase so that this trust and understanding will develop and continue between them when the scope of the project changes over time.

ACTIVE COLLABORATION PHASE

The next phase requires active management of the dynamic process of collaboration. It is characterised by extensive sharing of background IP, data and information, joint work, new opportunities and directions leading to the extension of the initial scope of the collaboration and even changes to the project parties and project leadership in some cases. In addition, collaborative interactions become more formalised and deliverable outcomes from the project should be anticipated. Accordingly, collaboration agreements need to have established mechanisms to manage these developments.

DELIVERABLE PHASE

This phase often intercedes with the active collaboration phase. New materials, technologies, products and methodologies emerge. At the same time, publications and recognition about the collaboration becomes an important issue for scientists. This phase requires careful exercise of the obligations, rights and restrictions that have been put in place by the collaboration agreement.

DISENGAGEMENT PHASE

In this final phase, trust will need to be maintained between the parties because the concepts, ideas and products that have been created will now be used by them in their own capacities. They may compete with one another as opportunities for new collaborations with new parties arise.

Accordingly, it is important to anticipate who has what rights and obligations and what will be the method for communications between the parties as they separate and disentangle themselves from the project.

CONCLUSION – 21st CENTURY SCIENCE

The University-Industry Demonstration Partnership (UIDP)⁴⁷⁰ examined the average amount of time that it took for a collaborative project to finalise a collaboration agreement. They found that over half of the agreements took over 30 days or more to conclude and some agreements took years to complete.

This is at odds with the current research environment, as exemplified by the LHC and others. This environment means that collaborations may arise spontaneously and be exercised and completed in a very short period of time. Standard template agreements are not the solution in this environment. They tend to address a narrow range of situations, are rather static, take a long time to develop and are difficult for scientists to understand.

Agreements need to be timely and to develop trust between the parties. The UIDP's Turbonegotiator Project is a good example of an attempt to develop an n-dimensional approach to producing timely agreements, driven by an interview process understandable by the parties.

Co-operation is required for, and is inherent to, 21st century science and spontaneous collaboration will become commonplace. Collaboration should not be thought of as a single type of activity, but as a category of very dissimilar activities that must be addressed through multidimensional legal frameworks that embrace the diversity and dynamic character of collaboration in science.

⁴⁷⁰ See <http://uidp.org/>

COLLABORATION AND CITIZEN EXPERTS

Mark H. Webbink⁴⁷¹

INTRODUCTION

In my two most recent career roles, collaboration has been at the centre of my daily activities. During my time as general counsel for Red Hat Inc., the world's leading provider of open source solutions, I dealt on a daily basis with issues of open source collaboration in all its many variants. More recently, as Executive Director of the Center for Patent Innovations at New York Law School, I headed up the 'Peer-to-Patent' Project, a program designed to improve patent quality by harnessing the collaborative efforts of citizen-experts to help identify relevant information that is helpful to patent examiners in assessing patent applications. Each of these activities has provided a unique perspective as to how collaboration occurs and can be promoted.

OPEN SOURCE DEVELOPMENT – THE CHOICE IMPERATIVE

The development and licensing of computer software which utilizes open source software development and licensing practices have become wildly popular in the last decade. Open source developers believe, for good reason, that an open development environment (where each developer is allowed to express their best ideas and defend the merits of those ideas among a peer development group) leads to better software. However, just as there is no single open source license that covers all open source software, there are a wide range of open source development practices. What legal counsel who work with open source groups often find is that it is critical to marry the right open source license with the selected open source development model.

For example, one popular open source license is the Berkeley Software Distribution license or BSD. This license is essentially a copyright license that places no reciprocal burdens on the party receiving the software. The recipient can freely modify the software, copy the software and redistribute the software. Importantly, that recipient can also embed that software in other open source applications as well as in traditional 'closed' source applications. This generally leads to a great deal of development freedom but not always a great deal of development discipline.

By contrast, open source software licensed under the GNU General Public License (or GPL, either version 2 or 3) carries with it certain reciprocal obligations due by a receiving party who elects to redistribute that software. Most specifically, the redistributing recipient is obligated to license the redistributed code under the GPL, whether the code is merely that which they received or a modified version. This license approach tends to enforce greater discipline during the development process as the developers must maintain an awareness of what they are distributing, whether it is the original or a derivative work, and to whom they are distributing the software.

Such diversity in the open source license and development models has led to a plethora of open source licenses, more than a hundred at last count. This leads to a diversity of contracting issues by receiving parties, including business, government and academic entities. Some of these licensing approaches are more problematic from a contract perspective than others. For example, when Red

⁴⁷¹ Executive Director of the Center for Patent Innovations at New York Law School.

Hat wanted to engage university academics in the development of open source software, it found the open source license model to be inconsistent with established university policies on intellectual property. Which party would own the intellectual property arising from the work? What if some of that intellectual property included patentable subject matter, would patents be pursued and who would hold them? Patents on software are anathema to open source developers, but are often highly coveted by universities seeking to generate additional revenue streams.

The complexity of university intellectual property policies and open source licensing resulted in having to negotiate such agreements one institution at a time. Private universities tended to have more flexibility than State-wide university systems (for example, the University of California). Trying to adopt a model open source intellectual property policy and contracting model that would be widely adopted by diverse academic institutions was simply not practical.

An alternative approach was to focus on fundamental principles that would govern such collaborations. One example of this approach is the IBM-developed Open Collaboration Principles⁴⁷² for university collaboration. These principles establish a policy for handling intellectual property rights that arise from software related collaborations between industry and universities under circumstances where the participants intend the results to be made part of a royalty free public commons. The devil still remains in the detail, but these principles help to define the approach to be followed in preparing specific collaborative development agreements covering open source software.

IBM followed this initial set of principles with a second set of principles entitled Free Participant Use Principles.⁴⁷³ This second approach intends to make intellectual property in the results of the collaboration (foreground intellectual property) available to the participants without royalty or other fees and to non-participants on either a royalty-free or a reasonable and non-discriminatory basis. As with the earlier principles around open source development, this second set of principles merely provides a framework for the development of a specific contract.

The advantage of this ‘principles-based’ approach is that it establishes the broad guidelines of the intended collaboration and, at least in theory, makes it easier to resolve specific contractual issues that arise in the collaboration.

From the perspective of an open source developer and a lawyer, intellectual property collaborations solely related to copyright are easier to establish than those collaborations that involve patents. This is largely due to the unique nature of patents which are emblematic in traditional patent licensing, for example, the value of the patent, the breadth of its claims, the extent of infringement, etc. In patent licensing practice, each arrangement must be negotiated on its own unique merits and there is a real danger in becoming too formulaic or model driven.

IMPROVING GOVERNMENT THROUGH COLLABORATION

The New York Law School's Peer-to-Patent⁴⁷⁴ Project is one of the earliest examples of harnessing the intellect of citizens to improve government decision-making. In Peer-to-Patent, citizen-experts join forces to identify and assess prior art that is relevant to pending patent applications, forwarding both the relevant prior art and annotations to U.S. Patent Office examiners for their use in determining the patentability of the associated patent application.

472 See http://www-304.ibm.com/jct09002c/university/scholars/collaborativeresearch/docs/OpenCollaborationPrinciples_2005.pdf.

473 See http://www-304.ibm.com/jct09002c/university/scholars/collaborativeresearch/docs/FreeParticipantUsePrinciples_2007.pdf.

474 See <http://www.peertopatent.org>.

Peer-to-Patent actually involves collaboration within several communities of interest, including patent applicants (who benefit from accelerated examination and stronger patents), scientists and technologists (avoiding non-meritorious patents), government (improving patent quality and reducing workload) and the general public (greater certainty as to patent validity reducing unwarranted licensing and litigation activities). Peer-to-Patent collaboration has evolved from voluntary participation with the threshold for participation set quite low. Rules are simple and are not onerous. The collaborative process, although supported by sophisticated technology, involves relatively unsophisticated transactions and processes. From the Peer-to-Patent Project, we have observed that certain levels of generic technology can be adapted to provide the mechanism for obtaining and providing expert feedback to a wide range of government fact-finding and decision-making activities.

Governments at all levels, local, State/provincial, and national, have long been interested in citizen feedback. For local and State governments, information gathering is relatively easy and can quite frequently be accomplished through hearing, conferences and meetings. In other words, citizen-experts can readily be available in person. This tends not to be the case with national governments, as such citizen-experts are spread over wide geographic areas and travel serves act as a barrier to such direct participation. For this reason, web-based collaboration tools can serve to increase collaboration by reducing the barriers to such participation.

It is also interesting to note that improved government decision-making and openness have been incorporated into the Obama campaign platform.

*Open Up Government to its Citizens: The Bush Administration has been one of the most secretive, closed administrations in American history. Our nation's progress has been stifled by a system corrupted by millions of lobbying dollars contributed to political campaigns, the revolving door between government and industry, and privileged access to inside information - all of which have led to policies that favor the few against the public interest. An Obama presidency will use cutting-edge technologies to reverse this dynamic, creating a new level of transparency, accountability and participation for America's citizens.*⁴⁷⁵

CONCLUSION

It is difficult to conceptualize any form of standard agreement that will be useful in complex collaborative transactions. Transactions are simply too diverse. Issues are too complex. Crossing national jurisdictions will add to the complexity of intellectual property, competition and contract law.

What is more realistic is a series of principles along the lines of IBM's Open Collaboration Principles. Using these principles as a starting point, a series of standard clauses could be developed, somewhat long the lines of the Uniform Commercial Code in the United States,⁴⁷⁶ which would have the effect of gap-filling default clauses. If a contract does not address a particular issue, then these default clauses would apply.

In addition, it would be useful to provide a 'decision tree' to govern the development of such collaboration agreements which would ask questions such as is there intellectual property? Is copyright the only form of intellectual property included? If background patents or potentially patentable subject matter are involved, then greater care and detail will be necessitated in developing a unique agreement, facilitated by established governing principles. Such an approach could streamline collaboration in an e-Research world.

⁴⁷⁵ See <http://www.barackobama.com/issues/technology/#solve-problems>.

⁴⁷⁶ See http://en.wikipedia.org/wiki/Uniform_Commercial_Code.

AUSTRALIAN SURVEY ON LEGAL ISSUES FACING e-RESEARCH

Maree Heffernan and Scott Kiel-Chisholm⁴⁷⁷

INTRODUCTION

The Legal Framework for e-Research Project lead by Professor Brian Fitzgerald and hosted by the Queensland University of Technology (QUT) is funded by the Australian Commonwealth Department of Education, Employment and Workplace Relations (DEEWR), formerly Education, Science and Training (DEST), under the Systemic Infrastructure Initiative (SII), Research Information Infrastructure Framework for Australian Higher Education, as part of the Commonwealth Government's *Backing Australia's Ability - An Innovation Action Plan for the Future (BAA)*.

The Project involves mapping out a sophisticated legal framework for e-Research and collaborative innovation. As we transition into the National Collaborative Research Infrastructure Strategy (NCRIS)⁴⁷⁸ era it is vitally important that social and legal aspects of the e-Research framework are developed in step with the rapid advances in technology. Only little work has been done in this area worldwide.

This project is linking with key international actors to provide an internationally significant project. While the Open Access to Knowledge (OAK) Law Project⁴⁷⁹ aims to examine the role of open access to all in an Internet world, this project also focuses on open innovation within secure knowledge communities – both are vital aspects of the e-Research framework. The critical issue is working out legal models for e-Research that reflect the capacity of the technologies involved and can be implemented quickly, effectively and (in many instances) in an automated way.

The Australian Federal government has implemented the National Collaborative Research Infrastructure Strategy (NCRIS) to provide greater focus and strategic direction for Australia's research infrastructure. The NCRIS *Strategic Roadmap*⁴⁸⁰ identifies priorities for investment in research

⁴⁷⁷ Project Officer and Project Manager, Legal Framework for e-Research Project (respectively)

This chapter is based on Maree Heffernan and Nikki David, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results (2007)* at <http://eprints.qut.edu.au/archive/00008865/01/8865.pdf>; and is derived from the publication 'Legal Framework for e-Research'.

The authors wish to acknowledge the assistance of Professor Brian Fitzgerald, Dr Amanda McBratney, Dr Anne Fitzgerald and Dr John Abbot and thank them for their efforts in developing and promoting the survey document.

The authors would also like to thank the following people for their valuable contribution to the development and distribution of the survey: Nikki David, Shane Dalgleish, Amy Barker, Tanya Butkovsky, DVC Professor Tom Cochrane, Dr Terry Cutler, Professor Mary O'Kane, Margot Bell, Professor Ian W. Turner, Ruth Bridgstock, Professor Paul Roe, Michael McArdle, Kerrin Anderson, Malcolm McBratney, Dr Evonne Miller, Steve Matheson, Dr Graeme Kernich, Dale Gilbert, Ray Duplock, Michael Dean, Mike Finney, Associate Professor Gillian Hallam, Clare McLaughlin, Professor Mark Perry, Terry Bell, Ruth Bridgstock, Associate Professor Chris Collet, Dr Joe Young, Karen Barnett, Dr Vladimir Likic, Professor Bernard Pailthorpe, Professor Stuart Cunningham, Professor Zee Upton, Samantha Cobb, Gaye Middleton and Professor Amanda Spink.

Special thanks to the many people who helped us disseminate the survey and the individuals who took the time to complete the survey.

⁴⁷⁸ Australian Government, Department of Innovation, Industry, Science and Research, *National Collaborative Research Infrastructure Strategy (NCRIS)* at <http://www.ncris.dest.gov.au/>.

⁴⁷⁹ OAK Law Project, Open Access to Knowledge <<http://www.oaklaw.qut.edu.au>>.

⁴⁸⁰ National Collaborative Research Infrastructure Strategy (NCRIS) at http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/ncris/.

infrastructure. In addition to 15 specific areas of science and technology, 'Platforms for Collaboration' are also designated as a priority capability area.⁴⁸¹ In addition to hardware and software elements, this priority area includes copyright and other legal considerations.

The conduct of research and the dissemination of its outcomes are greatly enabled by recent and continuing development in communications networks, information and computing technologies. These new technologies not only improve productivity and quality of research, they also enable entirely different kinds of research, organisational models and collaborations across every discipline, and create new research domains that could not otherwise exist.

These capabilities serve to advance and augment, rather than replace traditional research methodologies. It is important to understand the e-Research environment to ensure that any legal framework will serve to facilitate, rather than inhibit, collaborative research and innovation.

This chapter presents a brief summary of the results from a survey conducted by QUT's Faculty of Law as part of the Legal Framework for e-Research Project.⁴⁸²

The term 'e-Research' encapsulates research activities that use a spectrum of advanced ICT capabilities and embraces new methodologies emerging from increased access to:

- broadband communications networks, research instruments and facilities, sensor networks and data repositories;
- software and infrastructure services that enable secure connectivity and interoperability; and
- application tools that encompass discipline-specific tools, and interaction tools.⁴⁸³

The survey⁴⁸⁴ aimed to explore the nature of research collaborations and to identify common legal and project agreement problems encountered in forming research collaborations in order to form strategies to facilitate and streamline the process of e-Research in the Australian context. Specifically, the aims of the survey were to:

- identify e-Research activities and levels of engagement;
- understand the nature of the collaborative research landscape;
- investigate characteristics of informal collaborations and agreements; and
- explore legal issues related to data and databases.

481 NCRIS Strategic Roadmap: Section 5.16 Platforms for collaboration http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/ncris/ February 2006.

482 A full report on all of the survey results entitled Legal and project agreement issues in collaboration and e-Research: Survey Results is available at <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>.

483 Department of Education (DEST), e-Research at http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/e_research_consult/ at 27 June 2007.

484 For details of the survey description and methodology see: Maree Heffernan and Nikki David, Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results (2007) 9-13 at <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf> at 11 March 2008.

SURVEY RESULTS

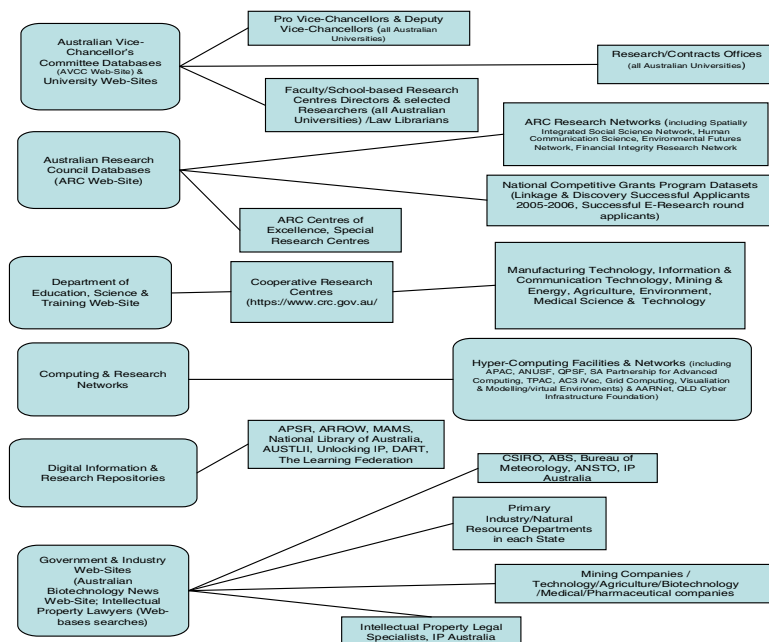
DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

The questionnaire consisted of sections covering e-research (Section A), organisational/research areas (Section B), collaboration profiles (Section C), project agreement issues (Section D), databases (Section E) and data (Section F).

Of the 176 participants, 85 (or 48%) were in research roles, 66 (or 38%) were in research and/or organisational management and 25 (or 14%) were in legal or contracts roles. The majority of participants were from the University sector (64.8%), 9.1% from Industry/Commercial and 9.1% from Government sectors, 10.8% from other Research Institutes and 6.3% from law firms.

One-third of the sample stated that they are extensively involved with e-Research (only 10.3% stated that they are 'not at all' involved with e-Research). Participants were asked to describe the types of e-Research activities that their role involves. One-hundred and fifty-four participants described the kinds of activities that their e-Research involves and these were coded into broad categories based on the predominant theme of the comment. Activities described by participants included: data collection/management/modelling/visualisation and the use of databases (approximately 49% of activities); online or internet-based research (approximately 15% of activities); services to support e-Research (approximately 12% of activities); the use of communication tools (approximately 7% of activities); the dissemination of information (approximately 3% of activities); and management of e-Research activities (approximately 3% of activities).

Figure 1. Web-Based Participant Contact Sources for Legal and Research Fields



COLLABORATION PROFILE

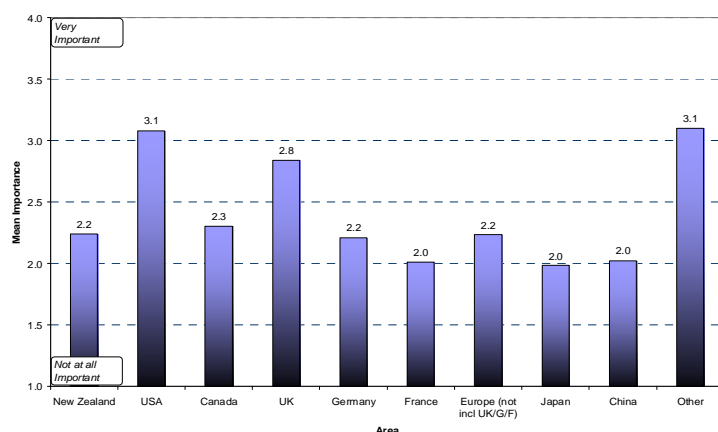
PARTIES INVOLVED IN COLLABORATIVE PROJECTS

The frequency of involvement with differing parties involved in collaborative research was explored by asking respondents how frequently their collaborative projects involved industry (including commercial laboratories/R&D enterprises), universities, other research institutes, government agencies, colleagues within their organisation, clients/customers/users, suppliers and consultants (on a scale of 1 'never' through to 4 'often').

As expected, there is a large degree of inter-university collaboration, with universities cited as the party most frequently involved in the respondents' collaborative projects, 81.3% stating that their projects often involve universities. Colleagues in their own organisation were also rated highly, with 72.2% of respondents identifying them as often being involved in their projects. Suppliers and consultants were the parties least likely to be involved in respondents' collaborative research projects. Six participants nominated parties other than those listed, such as research/postgraduate students, patent/trade mark attorneys and lobbyists.

Participants were asked to specify the most important international collaborators involved in their research projects and the results are portrayed in Figure 2. Of the specified list of countries, the USA (40% identified as 'very important'), followed by the UK (25% identified as 'very important') were identified as the most important countries to the participant's collaborative projects. Of the other countries specified by participants, India, Israel, Singapore, Thailand and islands in the Pacific were the most common.

Figure 2. Importance of International Collaborators



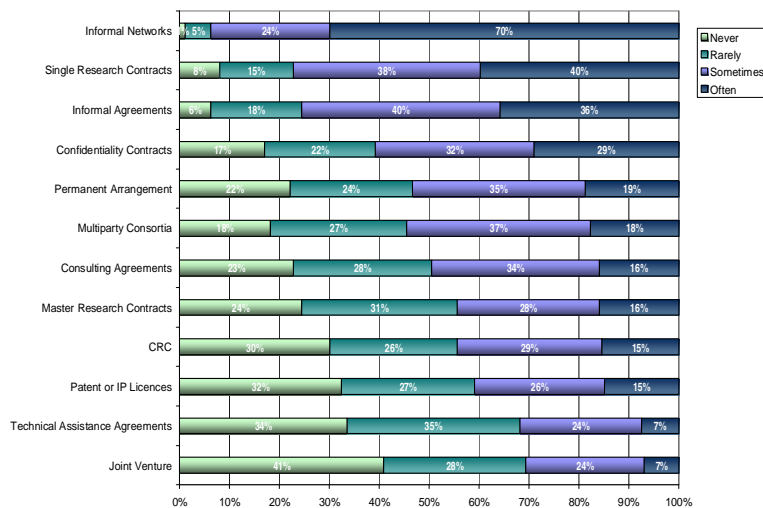
COLLABORATIVE PROJECT AGREEMENT TYPES

Participants were asked to rate the relative frequency (on a 4-point scale⁴⁸⁵) with which their collaborations involved a number of elements or arrangements, such as: informal networks (including informal conversations, conference interactions); informal agreements leading to co-authored publications; confidentiality/non-disclosure contracts; research contracts (for one project); master research contracts (involving multiple research projects); permanent research arrangements such as strategic alliances; multi-party research consortia; cooperative research centres; joint ventures and cross-licensing; patents/software (or other intellectual property licences); technical assistance agreements; and consulting agreements.

485 1=Never; 2=Rarely; 3=Sometimes; 4=Often.

Figure 3 presents the relative frequency of responses to the 12 agreement/arrangement types for the total sample. ‘Informal networks’ (including informal conversations, conference interactions), ‘informal agreements leading to co-authored publications’ and ‘single research contracts’ were the most frequent arrangements cited. Approximately 70% of respondents stated that their collaborations often involve informal networks (including informal conversations, conference interactions), 36% stated that their collaborations often involve informal agreements leading to co-authored publications and approximately 40% stated that their collaborations often involve single project-based research contracts. Only 7% of the sample stated that their collaborations often involve joint ventures or cross-licensing (41% never) and technical assistance agreements. Approximately one-in-three participants stated that their collaborations never involve patents, software, know-how or other intellectual property licences (32.4%) or Cooperative Research Centres (30.1%). ‘Commercialisation agreements’ were mentioned as an additional type of agreement that is involved in collaborative projects.

Figure 3. Relative Frequency of Various Types of Collaboration Agreements/Arrangements



Researchers or managers (compared to those who have legal and contract roles) stated that their collaborations more often involve informal agreements leading to co-authored publications. Those who have legal and contract roles are more likely than researchers to state that their collaborations involve master research contracts or technical assistance agreements.

Managers are more likely than researchers to state that their collaborations more often involve confidentiality/non-disclosure contracts, multiparty research consortia, Cooperative Research Centres (CRC), joint ventures, patents, technical assistance or consulting agreements.

Respondents who have legal and contract roles are more likely than managers or researchers to state that their collaborations more often involve confidentiality/non-disclosure contracts, joint ventures, patents or consulting agreements.

Respondents who were from Science & Technology (compared to those from Arts & Social Sciences) stated that their collaborations more often involve master research contracts, permanent research arrangement, multiparty research consortia, or CRC.

We also wanted to gain an understanding of how informal collaborations or agreements are ‘used’. Importantly, almost half of the sample stated that informal collaborations or agreements are sometimes used for detailed disclosures, and 29.5% stating that they are sometimes used to govern a whole project.

This use of informal collaboration needs to be recognised and the advantages and disadvantages need to be fully understood. Disadvantages include uncertain payoffs (barter and exchange), information gaps, credibility gaps in the information that is disclosed, risks of misappropriation and commercialisation focus (threatens the research sharing ethos).

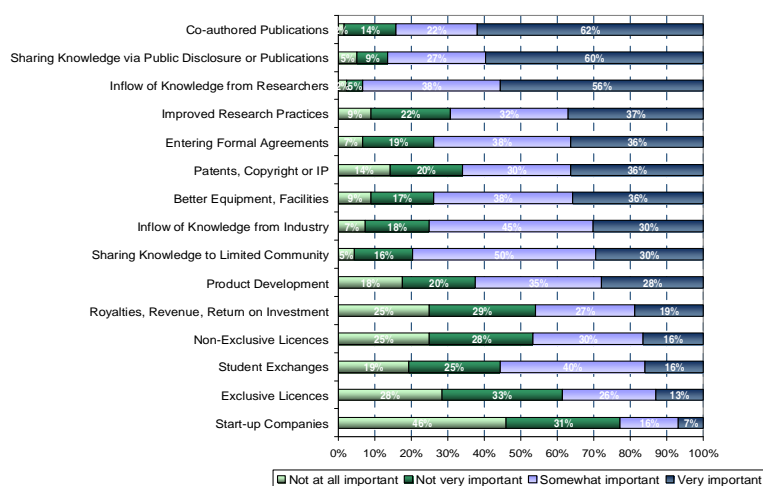
Participants were asked to specify the most important international collaborators involved in their research projects. Of the specified list of countries, the USA (40% identified as ‘very important’), followed by the UK (25% identified as ‘very important’) were identified as the most important countries to the participant’s collaborative projects. Of the other countries specified by participants, India, Israel, Singapore, Thailand and islands in the Pacific were the most common.

COLLABORATIVE RESEARCH PROJECT OUTCOMES

Participants were asked to rate the importance of 14 research outcomes (entering formal research agreements; patents, copyright, intellectual property; exclusive licences; non-exclusive licences; royalties, revenue, return on investment; start-up companies; co-authored publications; sharing knowledge via public disclosure or publications; sharing knowledge to limited community; student exchanges; product development, or solutions for industry/market; inflow of knowledge from industry; inflow of knowledge from researchers; better equipment, facilities; and improved research practices such as better quality, cost control, scientific evaluation) to their collaborative projects (see Figure 4).

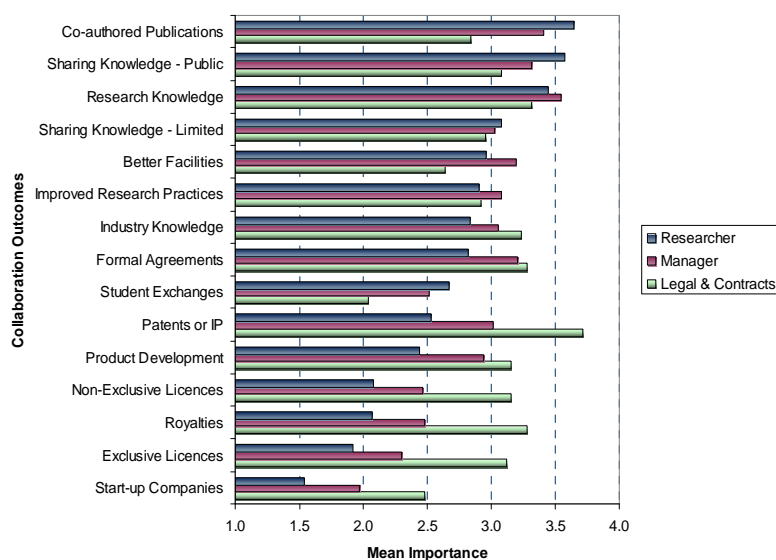
Almost two-thirds (62%) of the sample identified co-authored publications as a very important outcome of collaborative projects (mean importance=3.44); the inflow of knowledge from researchers was identified by 60% of the sample as being very important (mean importance=3.47); and sharing knowledge via public disclosure or publications was also viewed as very important by 60% of the sample (mean importance=3.41). Figure 8 displays the mean relative importance of these research outcomes by organisational role. Three participants nominated additional outcomes such as ‘improved networking’ and ‘rewards for communicating with others’.

Figure 4. Importance of Research Outcomes to Collaborative Projects



An examination of the potential differences in the importance of these collaboration outcomes by organisational role, by disciplinary area, level of involvement in e-Research and organisation sector was undertaken and Figure 5 displays the results.

Figure 5. Importance of Collaboration Outcomes by Role



Entering formal research agreements were more important for managers than for researchers. Patents or IP, exclusive or non-exclusive licences, royalties, or start-up companies were more important for those who have legal and contract roles than for managers or researchers.

Co-authored publications, sharing knowledge via public disclosure or publications or student exchanges were more important for researchers than those who have legal and contract roles. Product development was more important for those who have legal and contract roles than researchers. Co-authored publications or better equipment or facilities were more important for managers than those who have legal and contract roles.

Student exchanges and product development were more important for those who are from Science and Technology than those from the Arts & Social Sciences. Inflow of knowledge from researchers was viewed as more important by those that are moderately-extensively involved with e-Research compared to those not at all-slightly involved with e-Research.

Formal agreements, patents/IP, exclusive licences, royalties, start-up companies, product development, and inflow of knowledge from industry were viewed as more important outcomes by those in government/industry compared to those in the university sector. Co-authored publications and sharing knowledge via public disclosure or publications were viewed as more important by those in the university sector compared with those in government/industry.

CRITICAL FACTORS IN SUCCESSFUL COLLABORATIONS

Participants were asked to describe the critical factors in their most successful collaborations via an open-ended question (a total of 145 comments were received). Comments were thematically coded using the following descriptors:

- Synergies and Shared Goals &/or Resources;
- Relationships & Communication; and
- Business Planning & Practice (see Appendix B of the Survey Results for the complete list of comments).

A number of participant's comments referred to a variety of factors, thus for coding purposes, the first factor specified was used to classify responses. Approximately half (49.0%) of comments made predominantly reflect the importance of research synergies and shared goals and resources, with approximately 40% of comments predominantly referring to the importance of good relationships and communication.

<i>Comments: What do you see as the critical factors in your most successful collaborations?</i>
<i>Synergies & Shared/Goals Resources (approximately 49% of comments)</i>
<i>For commercial research collaborations - overlapping and complementary interests, overlapping and complementary skills, business planning, clear and honest communication paths, expectations of ongoing relationships and partnerships, joint negotiation of research, precise but flexible milestones for purely curiosity driven research - complementary and overlapping interests and skills, clear delineation of responsibility, reciprocity in interaction, good communication, opportunities for formal and informal interaction, reasonable time frames + flexible deadlines' (Research Centre Manager, University; Arts & Social Sciences)</i> <i>'They were all run as classic skunk works where the altruistic came together informally with...synergistic interests and the sheer determination to make it work.'</i> (Research Manager, Government; Science & Technology)
<i>Relationships & Communication (approximately 40% of comments)</i>
<i>'Knowledge of the people involved, the informality of the processes, goodwill between collaborators, reputations of the participants and recognition of the research outcomes likely to be achieved.'</i> (Researcher, Government, Science & Technology)

PROJECT AGREEMENT ISSUES

Almost one-third of the sample believe that formal agreements are always necessary (31.1%), with approximately two-thirds stating that formal agreements are sometimes necessary (68.0%). Many comments emphasised the importance of trust in collaborative arrangements. As one participant commented: *'If a hand shake and mutual respect won't do it...contracts are not going to save you from each other'* (Research Manager, Research Institute; Arts & Social Sciences). Thirty-six participants commented on the necessity of formal agreements.

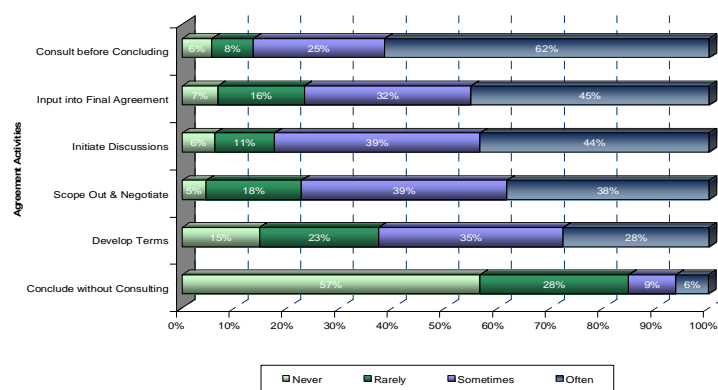
The average time taken to finalise formal collaborative research agreements (from initial contact) is 2.2 months for confidentiality/non-disclosure agreements (range 1-12 months); 3 months for simple two-party agreements (range 1-12 months); and 8 months for large, complex or multi-party agreements (range 1-30 months). As one participant commented: *'Legal agreements represent the largest impediment to timely research. The writing of proposals and obtaining funds is the easiest and quickest part. Legal agreements require early involvement of lawyers'* (Researcher, University; Science & Technology).

The majority of participants felt that they have an understanding of what the terms of their formal collaborative agreements mean. There was also relatively high agreement with a statement regarding knowing about the requirements of intellectual property ownership.

A majority of the sample were satisfied with the level of input they have into formal agreements (79.7%), with only 15.3% stating that they would like more input (5.1% stated that they would like less input). For those in research roles, 22.4% stated that they would like more input into formal agreements and for research/organisational managers, 6.1% stated that they would like to have more input.

Participants were asked to identify the frequency with which a range of activities occur in the context of project agreements (see Figure 6). Almost two-thirds (62%) of the sample often consult with others such as managers and legal/contracts advisors before concluding formal agreements (5.6% never consult and 7.9% rarely consult others). Almost half of the sample stated that they often initiate discussions with other researchers for possible collaborations (44%) and 38.4% stated that they have input into the actual form of the final agreement (and 31.6% stating that they sometimes have input into the final agreement). Over half of the sample (56.5%) also stated that they never conclude formal agreements without consultation or assistance.

Figure 6. Relative Frequency of Project Agreement Activities



There were significant differences in responses by disciplinary area, whereby those in Science & Technology fields are more likely than those in Arts & Social Science fields to ‘initiate discussions with other researchers for possible collaborations’, ‘scope out collaborative projects, negotiate milestones and outcomes and ‘have input into the actual form of the final agreement’. There were also significant differences by organisational sector, whereby those from government/industry are more likely than those from the university sector to ‘assist in developing terms sheets, heads of agreement or memoranda of understanding’. Participants from universities are more likely than those from government/industry to initiate discussions with other researchers for possible collaborations.

Commencing collaborative research projects prior to the signing of agreements is a relatively common practice; with 26% stating that they ‘often’, and 54.2% stating that they ‘sometimes’, commence projects before agreements are signed (only 6.8% stated that they never start projects prior to sign-off). Comments indicate pressure surrounding timelines is often the reason for the early commencement: ‘Almost always, in fact. Generally, you’ve got a short-ish timeline, and you can’t afford to wait months for the haggling to stop. If you don’t start before the contract is signed, you’ll won’t finish on time and end up in violation of the terms of agreement’ (Researcher, University; Science & Technology) and ‘The legal and contractual processes can often be much slower than the time it actually takes to complete the research!’ (Contracts Officer, Research Institute; Science & Technology).

Participants were asked to share their views on the commercialisation of research. One-hundred and thirty-five participants commented on the commercialisation of research. Many of these comments reflected the view that commercialisation is an important part of the research process (approximately 30% broadly supporting commercialisation) although there can be conflicts involved. Almost one-in-four participants commented that commercialisation should play no role in research (or a limited role) or interferes with the process and/or integrity of the research.

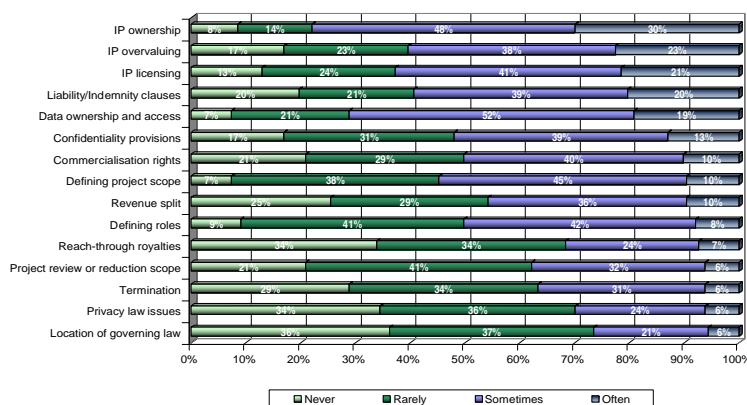
Figure 7 depicts the relative frequency of a range of general problems potentially encountered in negotiating formal agreements. The most frequent problems encountered by participants were ‘unreasonable delays in project commencement’, ‘difficulties with government agencies’, ‘difficulties with university technology transfer offices’ and negotiation resulting in something that ‘became too complex for what the project was’. Over one-third of the sample (36%) stated that sometimes negotiation difficulties prevented the project from proceeding and that trust had been eroded.

An examination of the differences in frequencies of negotiation issues by organisational role was undertaken. Respondents who have legal and contract roles (compared to those in research roles) more often encountered the problem of the other party having all the leverage or parties having differing expectations and managers.

There were no significant differences by disciplinary area, with both those in science and technology and the arts citing unreasonable delays in project commencement as the major negotiation problem.

Participants were also asked to rate the frequency of a range of specific issues that can cause problems in negotiating formal agreements. The highest mean frequencies were attached to ‘intellectual property-ownership’, ‘data ownership and access’, ‘intellectual property-licensing’, ‘intellectual property-overvaluing it’ and ‘liability/indemnity clauses’. Half of the sample (53.1%) identified that these problems can also be a problem during the performance of the agreement.

Figure 7. Specific Problems in Negotiating Formal Agreements



The majority of the sample (78%) stated that when negotiating agreements they are generally able to resolve the issue of publication or public release of results (eg by a limited delay in release to allow preservation of intellectual property rights) to their reasonable satisfaction (9% stated that it was resolved but that the delay had a serious adverse effect on their publication and 6% stated that it was resolved but there was a complete embargo on some information).

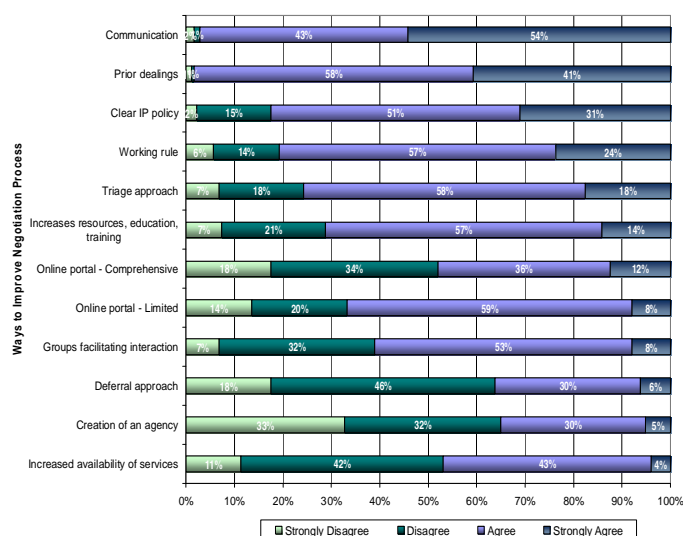
The majority of the sample had not used mediation/arbitration or court proceedings. Over half of the sample strongly agreed (16.9%) or agreed (45.2%) with the statement: ‘I rely on trust to resolve

disputes rather than my formal agreement’. Approximately half of the sample strongly agreed (8.5%) or agreed (45.2%) that they rely on the terms of their formal agreements to resolve disputes.

Participants were asked to rate their level of agreement with 12 statements regarding ways to improve the negotiation process (see Figure 8). The highest levels of agreement were: ‘Communication, making an express effort to understand the other party’s culture, objectives, drivers and mission’, followed by ‘Parties have had prior dealings together’ and then ‘Each party’s organisation has a clear intellectual property policy that balances issues of access, cost recovery and return on investment. ‘A generally accepted working rule that intellectual property generated in collaborative research should be divided according to relative inputs, measured by demonstrable relevance to the generated property’ was rated next important then ‘A triage approach, sorting agreements into those that need significant negotiation and those that do not’.

The lowest level of agreement was with the statement: ‘Creating a new government agency to develop and maintain a master database of standard clauses for research contracts, issue guidelines and oversee licensing practices’.

Figure 8. Ways to Improve the Negotiation Process



Managers were more likely to agree than researchers that communication or increased resources, education/training for transfer offices will improve the negotiation process. Managers and researchers were more likely to agree than those who have legal and contract roles that a ‘working rule’ will improve the negotiation process. Respondents who have legal and contract roles are more likely to agree than researchers that increased availability of services or increased resources/education/training for transfer offices will improve the negotiation process.

Those who are from Science & Technology are more likely to agree than those from Arts & Social Sciences that a ‘working rule’ will improve the negotiation process. Those who are moderately-extensively involved with e-Research are more likely to agree than those that are not at all-slightly involved with e-Research that ‘increased availability of services similar to contracts/technology transfer offices on a fee-for-service basis’ will improve the negotiation process.

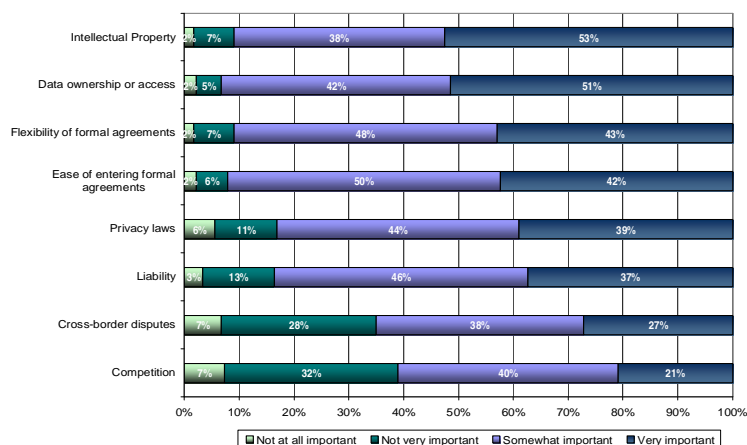
To explore views on ways to streamline documentation processes, participants were asked to rate their level of agreement with a range of statements (see Figure 7). The statement that drew the highest level of agreement was: ‘Master agreements that allow descriptions of new projects to simply

be ‘tacked on’ are useful’. There were also high levels of agreement with the following: ‘Using simple confidentiality agreements allows disclosures to occur quickly’, ‘Standard agreements would be customised anyway’ and ‘Agreements generated by assembling standard clauses would be customised anyway’. The highest levels of disagreement were attached to the statements: ‘Standard agreements for different collaborations would be widely used’; ‘A database of standard clauses for assembly into formal agreements would be widely used’; and ‘Licensing based on the ‘free/open source software’ model (e.g. free access but limitations can be imposed on use, re-use, dissemination, commercialisation of content) would be widely used’. There were no significant differences by organisational role, disciplinary area or level of involvement in e-Research.

Participants were asked to rate the importance of a range of contracting issues in the context of an increase in the practice of e-Research (see Figure 9). ‘Intellectual property (e.g. patents, copyright)’ (53% stating that it will be ‘very important’ and 38% stating that it will be ‘somewhat important’) and ‘Data ownership or access’ (51% stating that it will be ‘very important’ and 42% stating that it will be ‘somewhat important’) were the issues that participants felt would become most important with the increase of e-Research. This was followed by ‘Ease and speed of entering formal agreements’ (42% stating that it will be ‘very important’ and 50% stating that it will be ‘somewhat important’) and ‘Flexibility of formal agreements’ (43% stating that it will be ‘very important’ and 48% stating that it will be ‘somewhat important’).

‘Competition/anti-trust issues around research structures’ was seen as the least important issue in the context of increasing e-Research activities. The only significant difference between responses by organisational role was in the view of the future importance of ‘Liability’ whereby those who have legal and contract roles perceive that the issue of liability will become more important with the increase of e-Research than those in researcher roles.

Figure 9. Future Importance of Various Contracting Issues



DATABASES

A total of 95 participants completed the database section of the survey (participants who selected the organisational roles of researcher and research manager). Just over three-quarters are located in universities, with one-quarter of the sample in government or industry. Approximately 37% of the 95 participants stated that they are extensively involved in e-Research (34% moderately involved; 20% slightly involved and 9% not at all involved), with 63% identifying science and technology fields and 37% identifying arts and social science fields as their area research.

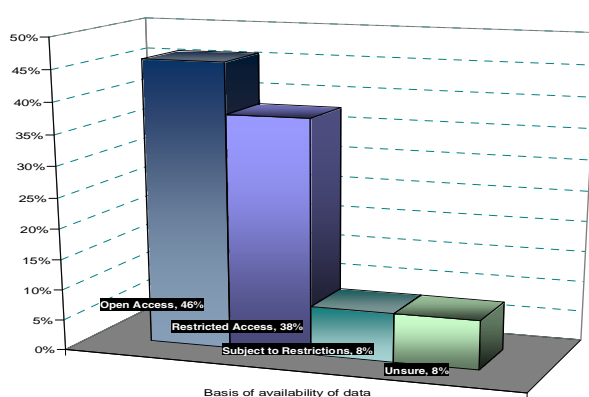
Almost half (43.2%) of the sample access external databases in conjunction with their research activities on a daily basis, 36.8% on a weekly basis and 11.6% on a monthly basis. Approximately 20% are required to register for all the databases they access, whilst 22% are required to register for more than half of the databases they access, with only 20% stating that they are not required to register to access databases.

Awareness of, and compliance with, legal restrictions associated with copying, extracting or re-using information from the databases accessed was relatively high, with 74.8% stating that they have an awareness of these restrictions and 79.0% stating that they always comply with restrictive notices presented on databases. Almost half of the databases accessed are located in Australia (47%), with over one-third located in the United States (34%).

Almost three-quarters (70.5%) of the sample felt that clearer explanations of what can be legally copied, extracted or re-used from particular databases would help facilitate their research. Fifty participants (or 52.6% of the sample) produce data or datasets that are deposited into a database. Of these participants, two-thirds (66%) created the database themselves (or their organisation created the database), and the remainder deposit into a database created by another body or institution. In terms of the location of this database, 30% are located outside of Australia. The majority of data generated is made available for access and use by other researchers (88% stating this is the case).

For those that deposit data or datasets into a database, 46% stated that it is on the basis of ‘open access’, whereby data is freely accessible with no restrictions on the use that can be made of it; 38% stated that it is on the basis of restricted access (such as to specific individuals or groups); and 8% stated that it is on the basis that it is subject to restrictions on the uses that can be made of the data (see Figure 10).

Figure 10. Basis of Availability of Data to Other Researchers



Many of the participants stated that their organisation does not have a policy setting out the basis on which research data should be deposited into databases for access by other researchers (53.7% stating that their organisation does not have a policy). Table 1 presents information related to organisational policies by disciplinary area, extent of involvement in e-Research, and organisational sector.

Table 1. Presence of Organisational Policy Regarding Depositing of Data by Sector, Discipline and Extent of Involvement in e-Research

Does your organisation have a policy setting out the basis on which research data should be deposited into databases for access by other researchers?	Yes %	No %
Organisational Sector:		
University	45%	55%
Other	50%	50%
Disciplinary Area:		
Science & Technology	44%	56%
Arts & Social Sciences	51%	49%
Extent of Involvement in e-Research:		
Not at all-Slightly	36%	64%
Moderately-Extensively	51%	49%

For those participants whose organisation possesses a policy regarding the depositing of data for access by others, 84.1% stated that researchers are provided with guidelines on how the policy is to be applied in practice. Just over half (55.2%) of the 95 participants stated that they (or their organisation) prepare plans for the management and/or sharing of research data, with 62.3% of these participants stating that these plans are prepared at or around the time that grant applications for project funding are prepared. Approximately 38% stated that plans are prepared later (such as ‘during the project sometime - after analysis’ or ‘once the value of the data has been identified’).

Overwhelmingly participants felt that it would assist them to have access to a ‘plain’ English ‘how-to-guide’ explaining the legal restrictions associated with databases (89.6% stating this would assist). Of those that stated that a how-to-guide would not be of assistance, the following comments indicate potential reasons: ‘...because they are already provided by the databases’; ‘most databases I use have no restrictions’; it ‘is likely to be a large document’; ‘I don't have time to read yet more documentation written in general terms that wouldn't tell me what I needed to know about my specific situation’ and ‘it is the responsibility of the research office’.

A number of participants chose to comment on the utility of a how-to-guide: ‘This may well be useful in a day-to-day sense but it would also be interesting from a digital scholarly practice perspective to see how the legal restrictions and or guidelines actually assist or impinge on scholarly practice’ (Researcher, University; Arts & Social Sciences); ‘Lately we've been trying to apply creative commons licences in some cases, the availability of this licence has helped in some negotiations about data access’ (Researcher, University; Arts & Social Sciences); ‘A fascinating question, given that Australia is one of the very few jurisdictions relying on copyright as the relevant property right for databases (Europe has the database right, the US does not recognise property rights in data)’ (Research Manager, University; Arts & Social Sciences).

DATA

A total of 95 participants completed the data section of the survey. Almost all of the 95 participants use or generate alphanumeric data (97%), 63% use or generate images such as photographs, diagrams, graphs and/or video and 6% use or generate audio/sound data.

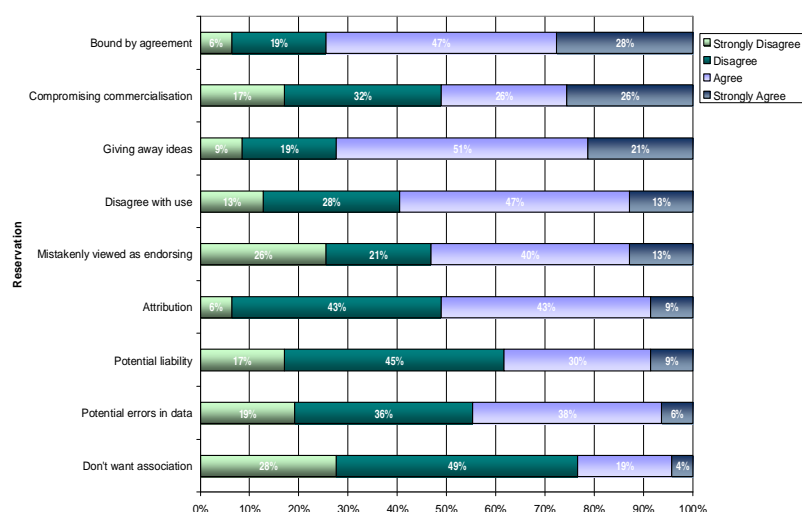
Overall, 26% strongly agreed and 63.5% agreed with the statement 'I have a clear understanding of who owns the data I use in my research projects' (10.4% disagreed or strongly disagreed). In terms of understandings of ownership of data generated, 33.3% strongly agreed and 50.0% agreed that 'I have a clear understanding of who owns the data generated in my research projects'. For those in Science & Technology fields, 39% strongly agreed and 44% agreed with this statement. In the Arts & Humanities fields, 26% strongly agreed and 60% agreed with this statement.

The majority of the sample takes steps to ensure research data is available in a form which can be readily stored and accessed (81.2%) and 56.3% stated that their organisation currently has defined mechanisms to assist in the storing and accessing of data in the long term. Comments suggest that the storage, preservation and accessing of material in the longer term can be a challenge for organisations: *'Though this is problematic...as there does not exist the underlying infrastructure to manage this data beyond the life of the projects'* and *'Maintaining the data over the long term can be difficult as versions of software change'*.

Almost half of the 95 respondents (47 individuals or 49%) had reservations about people outside of their projects or organisation having access to their data. To explore potential reasons for these reservations, participants were asked to rate their agreement (on a scale of strongly disagree through to strongly agree) with 9 statements. Figure 11 depicts the relative agreement related to each statement. The highest level of agreement was attached to the statements: 'You are bound by a formal collaborative research agreement not to disclose data' (27.7% strongly agreeing); 'Your projects seek to commercialise the outcomes and you do not wish to compromise this', 'You do not want to give away your ideas' and 'You do not want your data to be used in research that you oppose or personally disagree with' (12.8% strongly agreeing and 46.8% agreeing).

Managers had more reservations than researchers about people outside the project or organisation having access to data because they are bound by a formal collaborative research agreement not to disclose data and reservations about not compromising the commercialisation of outcomes. Those who are from Science & Technology fields have greater reservations than those from the Arts & Social Sciences about people outside the project or organisation having access to data because the project seeks to commercialise the outcomes. Assessment of the results explored the differences in reservations by disciplinary area, organisational sector and extent of involvement in e-Research. Participants in the university sector were also less likely to agree with the statement 'Your projects seek to commercialise the outcomes and you not wish to compromise this' than participants from government and industry.

Figure 11. Reasons for Reservations Regarding External Access to Data



Almost three-quarters (74.5%) of those respondents who had concerns about people outside their project or organisation having access to data created as a result of the research project stated that their concerns would be reduced by having a legally binding agreement that clearly defined legal ownership and limited liability for the recipient’s use of the data. For those that felt that such an agreement would not reduce their concerns, the following comments indicate potential reasons for this perception: ‘No confidence in the law binding such people’; ‘Because ownership and liability aren’t problems: ethics are’; ‘The issues of control over the use of data would not be dealt with by this’ and ‘Too difficult to obtain adherence’.

CONCLUSION

The major legal issues pertaining to establishing successful e-Research collaborations can already be broadly identified. Many of these issues are similar to those encountered in collaborative research programs using more traditional collaboration modes. However, the e-Research legal framework is potentially more complex. Collaborations by e-Research will add further complexities, which need to be identified and understood to facilitate optimisation of returns to the research participants, funding agencies and to society in general. The key points that will impact on what legal framework for e-Research will emerge include:

1. International collaboration;
2. Intellectual property and data ownership;
3. The need to reduce the friction that arises in negotiations and contracting; and
4. The recognition that informality is a key ingredient and the need for the law to accommodate and promote this dynamic elements.

To achieve its overall goals the Legal Framework for e-Research Project will:

1. Acquire information on e-Research collaboration through many resources including this survey;
2. Consider the institutional arrangements needed for best practice e-Research contracting/team building; and

3. Present legal models for e-Research that reflect the capacity of the technologies involved and can be implemented quickly, effectively and (in many instances) in an automated way.

The survey provides a valuable insight into the Australian collaborative e-Research community. If access to knowledge is a key driver enhancing social, cultural and economic development, any legal framework proposed should advance, not hinder, such sharing. Accordingly, the Legal Framework for e-Research Project will endeavour to integrate the findings of the survey into further investigations and considerations of the appropriate legal framework for e-Research. This might include:

1. Development of a dynamic collaborative e-Research agreement system along the lines of that described by Professor Mark Perry, during the Legal Framework for e-Research Conference;⁴⁸⁶
2. Development of a database of key intellectual property terms that can be considered by those who are seeking to draft the appropriate collaborative e-Research agreement;
3. Development of guidelines for Data Management Plans and a Data Management Toolkit, as suggested by Anne Fitzgerald at the Legal Framework for e-Research Conference;⁴⁸⁷ and/or
4. A handbook to assist with the timely, efficient, effective and legally robust collaborative e-Research agreements.

In many ways, our work has only just begun. We value the input received from those who participated in the survey, participated in the Legal Framework for e-Research Conference⁴⁸⁸ and will continue to provide guidance and support for our journey ahead.

486 Mark Perry, 'Technology, Contracting and e-Research' (Paper presented at Legal Framework for e-Research Conference, Gold Coast, 11-12 July 2007) <<http://www.e-research.law.qut.edu.au/conference>>.

487 Anne Fitzgerald, 'Building the Infrastructure for Data Access and Reuse in Collaborative Research: an Analysis of the Legal Context' (Paper presented at Legal Framework for e-Research Conference, Gold Coast, 11-12 July 2007) <http://www.e-research.law.qut.edu.au/files/conference/audio/02_Second%20Session/02_Fitzgerald_Anne.wma>.

488 Legal Framework for e-Research Conference, Gold Coast 11-12 July 2007 <<http://www.e-research.law.qut.edu.au/conference>>.

BIOGRAPHIES

Anthony Austin

Anthony Austin was recently a project and research officer for the OAK Law Project and the Legal Framework for e-Research Project at the Queensland University of Technology, Brisbane, Australia and is now the manager of the OAKList Project (<http://www.oaklist.qut.edu.au/>), originally created by the OAK Law Project and now conducted by the Queensland University of Technology Library Services Division. Anthony worked as a solicitor for 10 years in private practice before he joined the OAK Law Project primarily in intellectual property and commercial law.

Anthony completed his Masters of Law degree at the Queensland University of Technology in 2007 and has worked and advised on numerous OAK Law and Legal Framework for e-Research publications including The OAK Law Project and The Legal Framework for e-Research Project Report: *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context*, The OAK Law Project Report: *Survey on Academic Authorship, Publishing Agreements and Open Access* and The Queensland University of Technology and ARC Centre of Excellence for Creative Industries and Innovation Guide, *CCI Blog, Podcast, Vodcast and Wiki Legal Guide for Australia 2008*. In February 2008, he participated in an international roundtable on Cyberinfrastructure, Innovation, and University Policy convened by Professor Brian Kahin at the Keck Center of the National Academies in Washington D.C. He also presented at the Oxford Internet Institute's e-Research conference in September 2008.

Dr James J. Casey

James Casey presently serves as the director of contracts and industrial agreements at The University of Texas at San Antonio, San Antonio, TX, USA. He is an attorney, consultant, lecturer and author based in Shorewood, WI, USA. James' expertise is based upon 15 years in university research administration and local government, including Northwestern University and the University of Wisconsin-Madison. Licensed to practice law in the State and Federal courts of Wisconsin since 1990, James previously practiced law in Wisconsin and worked for the City of Milwaukee, Wisconsin, and Huber Heights, Ohio.

James has been a member of the National Council of University Research Administrators (NCURA) since 1995. He is currently a member of the Board of Directors, co-editor of the *NCURA Newsletter*, and a member of the Professional Development Committee. Previously he served as editor of the scholarly journal *Research Management Review* and served as a NCURA delegate to the University-Industry Partnership Project in Washington, D.C. He has written articles for the *Research Management Review* and other publications and has presented at numerous conferences and forums, including the Dublin Institute of Technology, Dublin, Ireland. He is an advisor to the Program in Law and Technology at the University of Dayton School of Law, Dayton, Ohio and has reviewed grant proposals for major U.S. Government granting agencies, including the National Institutes of Health (NIH - \$1.075B for the \$300M National Institute of Allergy and Infectious Diseases (NIAID) HIV/AIDS Clinical Trial Leadership and Unit RFA), the National Science Foundation (NSF) and the Department of Housing and Urban Development (HUD). He represented the University-Industry Demonstration Partnership at the Legal Framework for e-Research Conference at Surfer's Paradise, Queensland, Australia in 2007. comments and/or questions can be directed to Dr. Casey at james.casey@utsa.edu.

Saveria Dimasi

Saveria Dimasi is the Director of Legal Services at the University of Melbourne. Legal Services deals with all legal matters affecting the University and cover a broad area, ranging from intellectual property, research funding, EHS and property through to human resources issues.

She manages and negotiates complex legal transactions in this area, both on behalf of and with the University and its commercialisation company; Melbourne Ventures Pty Ltd. Saveria also monitors, reviews and drafts the University's research funding agreements. Before joining the University Saveria was General Counsel and Company Secretary at General Motors Holden Ltd. Through this and other roles Saveria has developed valuable expertise in relation to economic management, public policy and law. Saveria also regularly gives presentations to University staff as well as speaking extensively at industry and educational events. Her pro-bono work includes holding the position of President of the Victorian Breast Cancer Research Consortium, board member of the Cancer Council of Victoria, Chair for legal seminars at Leo Cussen Institute and, formerly, the President of the Society of University Lawyers.

Professor Brian Fitzgerald

Brian Fitzgerald studied law at the Queensland University of Technology graduating as University Medallist in Law and holds postgraduate degrees in law from Oxford University and Harvard University.

He is a well-known Intellectual Property and Information Technology/Internet lawyer who has pioneered the teaching of Internet/Cyber Law in Australia. He has published articles on Intellectual Property and Internet Law in Australia, the United States, Europe, Nepal, India, Canada and Japan and his latest (co-authored) books are *Cyberlaw: Cases and Materials on the Internet, Digital Intellectual Property and E Commerce* (2002); *Jurisdiction and the Internet* (2004) and *Intellectual Property in Principle* (2004) and *Internet and Ecommerce Law* (2007).

Brian is a Chief Investigator and Program Leader for Law in the ARC Centre of Excellence on Creative Industries and Innovation and Project Leader for the DEST funded Open Access to Knowledge Law Project (OAK Law) Project looking at legal protocols for open access to the Australian research sector and the DEST funded Legal Framework for e-Research examining the legal framework needed to enhance e-Research. He is also a Program Leader for CRC Spatial Information.

His current projects include work on intellectual property issues across the areas of Copyright, Digital Content and the Internet, Copyright and the Creative Industries in China, Open Content Licensing and the Creative Commons, Free and Open Source Software, Research Use of Patents, Science Commons, e-Research, Licensing of Digital Entertainment and Anti-Circumvention Law. Brian is a Project Leader for Creative Commons in Australia. He has organised numerous conferences on Intellectual Property and Internet Law in Australia, is a regular speaker at international and national conferences and has made a number of significant submissions to government in the area of Internet and IP Law.

Alex Fowkes

Alex Fowkes is the Executive Director for Pfizer's R&D Worldwide Business Development activities in Asia. In this role he travels extensively through-out Asia in the search for opportunities to forge R&D alliances with academia, bio-venture and pharmaceutical companies. Alex obtained undergraduate degrees in science and law in Australia before joining a private practice law firm in 1994. In 1998 Alex joined Pfizer's operations in the United Kingdom to provide legal support to its European research and development activities.

In 2003 Alex moved to the Pfizer Research and Development Division's (PGRD) headquarters in New London, Connecticut to lead the global legal support for PGRD's world-wide technology transfer activities. At the end of 2006 Alex was appointed to his current role.

Dr. Chris Geer

Dr. Greer received his PhD degree in biochemistry from the University of California, Berkeley and did his postdoctoral work at CalTech. Dr. Greer was a member of the faculty at the University of California at Irvine in the Department of Biological Chemistry for approximately 18 years where his research on gene expression pathways was supported by grants from the National Science Foundation, National Institutes of Health, and the American Heart Association. During that time, he was founding Executive Officer of the RNA Society, an international professional organization with more than 700 members from 21 countries worldwide.

Dr. Greer has been a rotator and, more recently a member of the permanent staff at the National Science Foundation. He is currently Senior Advisor for Digital Data in the Office of Cyberinfrastructure. Previously, he has served as Program Director in the Division of Molecular and Cellular Biosciences, the Division of Biological Infrastructure, and the Emerging Frontiers Division. Dr. Greer recently served as Executive Secretary for the Long-lived Digital Data Collections Activities of the National Science Board and is currently Co-Chair of the Interagency Working Group on Digital Data of the National Science and Technology Council's Committee on Science.

Maree Heffernan

Maree Heffernan works for Queensland Government and was formerly a research officer with the Legal Framework for e-Research Project and a Senior Research Officer with the Centre for Social Change Research at QUT. Graduating from the University of Queensland with first class honours in psychology in the late '90's, she is currently completing a PhD in the School of Humanities & Human Services at QUT. The focus of her research is the 'human element' in the uptake of new technologies, and she has broader interests in the areas of social justice and marginalisation. In the Legal Framework for e-Research Project, Maree has worked with the project team to develop an online survey regarding legal and project agreement issues in collaboration and e-Research and been responsible for the statistical analyses of survey data. Maree is also working with the OAK Law team on another online survey of Australian authors regarding publishing agreements. These projects build on a number of projects Maree has initiated, including: digital storytelling as a qualitative research methodology, collaborative research frameworks (including working with Indigenous communities) and the use of geographic information systems in the context of human service provision.

Scott Kiel-Chisholm

Scott completed his Articles of Clerkship with Blake Dawson Waldron Lawyers in 2001, after working in the Insurance, Projects, Intellectual Property and Communications and Corporate Advisory practice groups. He then travelled to Silicon Valley, California USA and upon his return, Scott commenced work in the Litigation practice group of McInnes Wilson Lawyers, concentrating on the defence of professional indemnity claims. In 2004, Scott joined the Commercial Litigation practice group of Home Wilkinson Lowry Lawyers which provided broader litigation experience in project management contracting, retailing, construction, manufacturing and franchising. In an effort to progress a career in intellectual property law, Scott commenced work with Colavitti Lillas Lawyers before becoming Project Manager of The OAK (Open Access to Knowledge) Law Project in November 2005. In September 2006 Scott also became the Project Manager of the Legal Framework for e-Research Project and has been involved in the development of two online surveys and two international conferences and the production of numerous reports and guides. In December 2007, Scott was awarded a Master of Laws specialising in intellectual property law from The University of Queensland.

Christine Reid

Christine read Classics at St. Hilda's College, Oxford before joining Morrell, Peel and Gamlen, an Oxford firm of lawyers that acted for Oxford University for over 200 years. Whilst at that firm Christine started to specialise in technology law and was one of the first lawyers in the UK to develop an ICT, and later, an e-commerce practice. She has over 20 years' experience advising on technology-related matters.

Christine has advised numerous academic institutions for most of her career and public sector research establishments, research councils and government agencies on matters as diverse as: the protection and exploitation of intellectual property rights; technology and knowledge transfer; research and development; European and UK Government funded collaborations; joint ventures and strategic alliances; spin out companies; consultancy services; funding and grant agreements; state aids; data protection and freedom of information; IT procurement and outsourcing; data archiving, preservation and curation; and open access publishing. An expert in information technology law, Christine advises national and multi-national companies and institutions on a wide range of IT related matters, including contracts for the development and licensing of software systems, systems procurement, systems support and maintenance, outsourcing and managed services, consultancy services, data hosting and supply, business contingency arrangements, the internet, re-seller, agency, partnering and collaborative ventures and the protection and exploitation of intellectual property rights. Christine was on the UK Department of Trade and Industry working group on Data Protection. She is the legal adviser to the UK Lambert Working Group on University and Industry Collaborations and is the author of the model agreements and much of the toolkit that can be found on www.innovation.gov.uk/lambertagreements.

She was rapporteur for the European Commission's Expert Group on Knowledge Sharing Issues in the European Research Area Green which looked at the need for a European IP Charter. She has co-authored a report for the UK Joint Information Systems Committee (JISC) on the legal and intellectual property issues surrounding the use of publicly-funded IT systems and infrastructure. She is a member of the UK Intellectual Property Office's Working Group on B2B intellectual property licensing.

She presents numerous seminars on IT, IP and e-business-related topics, joint ventures and collaborations, and often runs data protection workshops.

She is a director of Finance South East, a not-for-profit organisation that provides proof of concept and funding for HEI and business collaborations and start-ups, as well as mentoring and investment readiness services for businesses in the South East of England, and she is a trustee of two charities. Christine recently formed a niche legal practice, Northwood Reid, specialising in technology, intellectual property and other commercial issues.

Dr. Jack Steele

Dr. Steele is the General Manager of Major Transactions at CSIRO Business Services. Over the period 1990 - 2000, Dr. Steele had a leadership position in the business development and commercialisation activities arising from two CSIRO Divisions of Biomolecular Engineering and Chemicals and Polymers and two partner Collaborative Research Centres (CRCs). Since 2000, he has held corporate roles that have involved: management of complex commercial and intellectual property transactions; start-ups; venture capital fund investments; the formation, restructuring and wind-up of R&D entities; and the resolution of five complex intellectual property disputes and commercial management of infringement litigation (in relation to the Focus Night & Day™ patents). His corporate responsibilities additionally include being the secretary of the CSIRO Board Commercial Committee and serving on the CSIRO Commercial Executive (ComEx) committee. Dr. Steele's research management career, with extensive experience at the academic-enterprise interface, and strong intellectual property background have enabled him to bring a strategic perspective to technology transfer and commercial relationship management activities and to approach these business activities with high credibility with, and understanding of, researchers. Dr. Steele has also twice received the CSIRO Medal for Business Excellence.

Brett Walker

Brett is a Practice Team Leader with CSIRO's Legal Team and is based in Canberra. He has responsibility for a number of areas of legal work in the plant biotechnology, sustainable environment, entomology, water and natural resources management research areas and leads a team of 9 lawyers working across those areas. Brett is also a consultant to the Commonwealth Departments of Agriculture, Fisheries and Forestry and Foreign Affairs and Trade on legal issues relating to the international transfer of plant genetic resources, natural biodiversity and bio-prospecting. He regularly represents Australia at Treaty negotiations and international experts meetings in these areas.

Brett has been admitted as a solicitor for more than 20 years and holds 2 Masters Degrees in Law and has particular expertise in the areas of intellectual property law. He is a regular author and presenter in the area of intellectual property law.

Mark H. Webbink

Mark Webbink is a Visiting Professor of Law and Executive Director of the Center for Patent Innovations at New York Law School. Mr. Webbink has also served as an Adjunct Professor at NCCU Law School and a Senior Lecturing Fellow at Duke Law School. From 2000 to 2007 he served in various capacities with Red Hat, Inc., including General Counsel, Deputy General Counsel for Intellectual Property, Senior Vice President and Secretary. He has written and spoken extensively on the subjects of open source software, software patents, and patent reform. Mr. Webbink received his B.A. Degree from Purdue University in 1972, his Masters in Public Administration from the University of North Carolina – Chapel Hill in 1974, and his J.D., magna cum laude, from North Carolina Central University School of Law in 1994.

John Wilbanks

John Wilbanks is currently the Executive Director of Science Commons. Science Commons is an exploratory project to apply the philosophies and activities of Creative Commons in the realm of science. Their goal is to encourage stake-holders to create areas of free access and inquiry using standardized licenses and other means; a 'Science Commons' built out of voluntary private agreements.

John came to Creative Commons from a Fellowship at the World Wide Web Consortium in Semantic Web for Life Sciences. Previously, he founded and led to acquisition Incellico, a bioinformatics company that built semantic graph networks for use in pharmaceutical research & development. Before founding Incellico, John was the first Assistant Director at the Berkman Center for Internet and Society at Harvard Law School. He was previously a legislative aide to U.S. Representative Fortney (Pete) Stark and a grassroots coordinator and fundraiser for the American Physical Therapy Association. John holds a Bachelor of Arts in Philosophy from Tulane University and studied modern letters at the Universite de Paris IV (La Sorbonne). He serves on the Advisory Board of the U.S. National Library of Medicine's PubMed Central and the International Advisory Board of the Prix Ars Electronica's Digital Communities awards.

PART TWO: SUBMISSIONS

Please note: These submissions were made to the Review of the National Innovation System ⁴⁸⁹ before the Roundtable. These submissions are included for background contextual reading for some of the issues raised in the chapters. The inclusion of the submissions from CSIRO and GO8 are not to be interpreted as an endorsement by those organisations of the issues and suggestions raised by the Roundtable or by these chapters.

489 See <http://www.innovation.gov.au/innovationreview/Pages/home.aspx>.

Streamlining Negotiation and Contracting in Collaborative Research Environments

**Review of the National Innovation System - Submission
By Mr. Anthony Austin
And Professor Brian Fitzgerald
Faculty of Law
Queensland University of Technology**

SUBMITTED 30 APRIL 2008

**To: Review of the National Innovation System – Submission
Secretariat to the Expert Panel
Review of the National Innovation System
Department of Innovation, Industry, Science and Research
GPO Box 9839
Canberra, ACT 2601
By email: innovationreview@innovation.gov.au**



Legal Framework for
e-Research Project

e-research.law.qut.edu.au



Declaration of Interests and Affiliations

Professor Brian Fitzgerald:

- Employed at QUT as Professor of Intellectual Property Law and Innovation www.qut.edu.au www.ip.qut.edu.au;
- Non Remunerated Elected Director – representing university sector members – Internet Industry Association of Australia (IIA) www.iaa.net.au;
- Project Leader Creative Commons Australia www.creativecommons.org.au;
- Chief Investigator ARC Centre of Excellence for Creative Industries and Innovation www.cci.edu.au;
- Project Leader Open Access to Knowledge (OAK) Law Project www.oaklaw.edu.au;
- Project Leader Legal Framework for e-Research Project www.e-research.law.qut.edu.au;
- Co-Project Leader Enabling Real Time Access to Government Data - Cooperative Research Centre (CRC) for Spatial Information www.crcsi.com.au;
- I have had professional connections with a number of members of the Review Panel and my sister and close colleague Professor Anne Fitzgerald is a member of a broader reference group Dr Cutler has convened as part of the Review process.

Mr. Anthony Austin:

- Employed at the Queensland University of Technology as a Research Officer for the OAK Law Project (<http://www.oaklaw.qut.edu.au/>) and the Legal Framework for e-Research Project (<http://www.e-research.law.qut.edu.au/>);
- I work with Professor Anne Fitzgerald who also works for the OAK Law project and the Legal Framework for e-Research project. She is a member of the broader reference group which the Review Panel has convened as part of the review process.

PART 1: INTRODUCTION

This submission is complementary to the submission *Innovate Australia*, submitted by Professor Brian Fitzgerald to the Secretariat to the Expert Panel Review of the Innovation System.

This submission addresses the need to improve the efficiency of current practices of negotiation and contracting in relation to collaborative research projects.

STARTING PREMISE

The law should be an enabler to the innovation environment, not an inhibitor. As Paul A. David and Michael Spence explain in their report, *Towards institutional infrastructures for e-Science: the scope of the challenge*¹:

“It is important that institutional arrangements are made so as to minimize the extent to which the law becomes an impediment to cooperation among researchers, whether directly, or indirectly by undermining informal mechanisms of trust and dispute resolution²”

PART 2: COLLABORATIVE RESEARCH AGREEMENTS

In 2007, the Legal Frameworks for e-Research Project conducted a survey entitled:

Legal and project agreement issues in collaboration and e-Research: Survey Results (<http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>).

The survey obtained evidence form Australian researchers, research mangers and legal advisors from universities, industry and government about legal and project agreement issues in collaboration and e-Research³.

The survey examined issues regarding collaborative e-Research agreements, in particular:

- Legal procedures and norms for formalising such agreements⁴;
- How these legal procedures and norms affect researchers, research mangers and the success of collaborative innovation projects⁵;
- Problems encountered in negotiating issues of IP ownership, licensing, data access and other complications and delays arising from formalising these agreements⁶;

¹ Professor Paul A. David, and Dr. Michael Spence, *Towards institutional infrastructures for e-Science: the scope of the challenge* , at <http://www.oii.ox.ac.uk/research/publications.cfm>

² Ibid 7

³ The e-Research project’s Report, *Legal and Project Agreement Issues in Collaboration and e-Research: Survey Results* See <http://eprints.qut.edu.au/archive/00009112/01/9112.pdf>

⁴ Ibid 25-31, 37-42

⁵ Ibid

- How negotiations, complications and delays subsequently undermine feelings of trust and endanger the willingness of parties to participate in collaborative innovation⁷; and
- The participants understanding and views on simplified legal and communication processes designed to aid collaborative e-research⁸.

From the survey results, it can be concluded that:

- Established legal procedures and norms for formalising such agreements can unduly delay and even terminate collaborative research projects between industry, universities and government;
- Issues that impede projects include the negotiation of intellectual property ownership rights, licensing arrangements and parties access to project data;
- Prolonged negotiations, complications and delays have the effect of undermining feelings of trust and endanger the willingness of parties to participate in collaborative innovation projects.

In short, we need to make it easier for universities/higher education, business/industry and researchers to formalise collaborative agreements and to commence work on innovative projects.

⁶ Ibid 43-46

⁷ Ibid 46-54

⁸ Ibid 55-62

PART 3: STREAMLINING COLLABORATIVE RESEARCH AGREEMENTS

The survey results suggested ways to counter these problems and to streamline the processes for formalising collaborative research agreements:

- Master agreements that allow descriptions of new projects to simply be added on⁹;
- Template agreements for different types of collaborations. with options to align them to the parties' needs and circumstances¹⁰;
- A database of standard clauses for assembly into formal agreements¹¹;
- Increased educational materials and guidelines and skills training for knowledge engagement practitioners¹².

In addition to our survey, various Australian and overseas studies have also examined legal procedures for the formalisation of collaborative research agreements and the impediments which arise during those processes.

Common themes emerge from these studies:

- Links or partnerships between business/industry, universities and research institutions are necessary for increasing collaborative research¹³, however issues regarding IP ownership and access are viewed as impediments to collaboration¹⁴;
- There is a need for uniform national approaches to IP ownership and licensing and establishing a set of best practice principles for business/industry and university collaboration with publicly funded research agencies¹⁵; and

⁹ Ibid 59-62

¹⁰ Ibid

¹¹ Ibid

¹² Ibid

¹³ The Prime Ministers Science, Engineering and Innovation Council (PMSEIC) Report *Australia's Science and Technology Priorities for Global Engagement*, December 2006, 61. See at http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Global_Engagement.htm

¹⁴ Ibid 36

¹⁵ Recommendation 11, Dr J Howard 2005, *Knowledge Exchange Networks in Australia's Innovation System: Overview and Strategic Analysis*, Howard Partners Pty Ltd, commissioned for The Business, Industry and Higher Education Collaboration Council (BIHECC). See at <http://www.dest.gov.au/NR/rdonlyres/D60AE27E-1BF3-4305-ACCC-3027FE0A43FF/8488/KENReportFinal.rtf>

- The final value of an output should be shared equitably, based on the direct proportional value of the inputs to a project¹⁶.

¹⁶ Department of Education, Science and Training, *Review of Closer Collaboration Between Universities and Major Publicly Funded Research Agencies*, 2004, 37 at <http://www.dest.gov.au/NR/rdonlyres/327F4C1D-99CC-4F93-91FB-1A2DEA8F299E/3623/pub.pdf>

These studies have also produced recommendations, documents, guidelines or interactive tools which fall into four categories:

1 Creation of a Government Agency:

David and Spence - *Towards institutional infrastructures for e-Science: the scope of the challenge*¹⁷:

This report proposes that standard template contracts are not suited for governing collaborative research projects and recommends the establishment of a “coordinating and facilitating mechanism in the shape of a novel public agency”¹⁸.

This independent public agency will:

- “Guide, oversee and disseminate the work of producing, maintaining, evaluating and updating standard contractual clauses”¹⁹. The clauses will be designed to apply to various types of problems or situations that arise in collaborative research projects²⁰ and can be selected by parties to a project to resolve specific problems in their collaboration project agreement²¹; and
- “Play a leading role in enunciating a set of fundamental principles to guide the formation of these contractual clauses and ensure that the effects of the agreements into which they are introduced will not be inconsistent with the intent underlying those principles”²².

2 Constructing Clauses:

UIDP - TurboNegotiator:

The University-Industry Demonstration Partnership²³ has established the TurboNegotiator project²⁴, an online software tool that constructs collaborative research agreements from recommended clauses, and not from established template agreements.

TurboNegotiator consists of:

- A ‘project space’ for parties to obtain consensus about each others perceptions and ideas for the collaboration project, before selecting appropriate clauses for the research agreement. It includes ‘consensus statements’ which makes a statement on the issue at hand, explains

¹⁷ Professor Paul A. David, and Dr. Michael Spence, *Towards institutional infrastructures for e-Science: the scope of the challenge* at <http://www.oii.ox.ac.uk/research/publications.cfm>

¹⁸ Ibid 11

¹⁹ Ibid 11

²⁰ Ibid 51

²¹ Ibid 28

²² Ibid 52

²³ See <http://uidp.org/>

²⁴ See http://uidp.org/UIDP_PROJECT_STATUS.html

the reasoning behind the statement, sets out ‘principles’ which the parties must adhere to and lists other factors or comments that should be considered²⁵;

- The TurboNegotiator interview tool, which asks a series of questions of each party to the project. The questions are organised into specific sections relating to project issues and the answers provided by the parties suggests clauses to go into the agreement²⁶. Each of the suggested clauses hyperlinks to further information about its suitability in relation to each party’s interests and its overall effect on the agreement and the project.

3 Template Agreements:

The B-HERT Partnering Initiative:

The Business/Higher Education Roundtable (“B-HERT”²⁷) issued a report, *Partners in Intellectual Property*²⁸, which proposes the use of a:

- Template ‘Proposed Partnering Concept’ which addresses issues such as users’ rights and IP ownership as a starting point for negotiations for collaborative projects (the report is unclear whether it is intended to be a voluntary protocol or a binding agreement); and
- A ‘Grant of Intellectual Property Rights’ contractual template which contains set clauses that address IP licensing and assignment, consideration and warranties²⁹, but does not address issues of IP publication, management issues and contractual flexibility.

The Lambert Review and Model Agreements:

The *Lambert Review of Business-University Collaboration*³⁰ established a Working Group which developed five model research collaboration agreements for use as a starting point for negotiations by business/industry and universities in collaborative research projects:

²⁵ There are draft consensus statements for how to produce a ‘statement of work’ of aims and activities for the project, how to determine issues of indemnification in the project, how to balance issues regarding the publication of project IP, dealing with copyrightable and other research results and dealing with background IP. See the drafts from the UIDP meeting April 9 to 10, 2008 at

http://www.osp.gatech.edu/TN/documents/ConsensusStmnt04_09_08.doc and see presentation by Julia Garton, *TurboNegotiator, Milestones and Pathways, 23 July 2007*, Third Meeting of the University-Industry (Demonstration) Partnership, July 23-24, 2007. The National Academies Washington at http://www.uidp.org/UIDP_ARCHIVED_MEETINGS.html

²⁶ Presentation by Julia Garton, *TurboNegotiator, Milestones and Pathways, 23 July 2007*, Third Meeting of the University-Industry (Demonstration) Partnership, July 23-24, 2007, The National Academies Washington at http://www.uidp.org/UIDP_ARCHIVED_MEETINGS.html

²⁷ http://www.bhert.com/aboutBHERT_Mission.htm

²⁸ See the Report at http://www.bhert.com/publications_Reports.htm

²⁹ Ibid 40-48

³⁰ See The Lambert Review of Business-University Collaboration – Final Report at http://www.hm-treasury.gov.uk/media/9/0/lambert_review_final_450.pdf

- Model Agreements 1, 2 and 3 begin from the position that the university owns the IP resulting from the project³¹. The university is free to publish about the IP or have its staff and students discuss the project in tutorials or lectures³² (unless business/industry has issued a 'confidentiality notice' to prevent publication/discussion until patent or other protection for the IP has first been obtained³³);
- Model Agreements 4 and 5 begin from the position that business/industry owns the IP resulting from the project³⁴. Universities may either disseminate the IP for teaching and research³⁵ subject to terms of any 'confidentiality notice' issued by business/industry³⁶ or have no publication or dissemination rights at all³⁷.

Agreements are used in concert with:

- An 'Outline' an issues designed to prompt the parties to think about and discuss with each-other before they select of one of the model agreements³⁸;
- A 'Decision Guide', being a series of questions designed to determine which of the five agreements is best suited for the project at hand;³⁹ and
- 'Guidance Notes' which provide definitions of the terms used in the five agreements and explanations about the effect and intention of certain clauses⁴⁰.

CRC Inc and Model Participants Agreement

CRC Inc⁴¹ has produced two template instruments to establish Cooperative Research Centres:

- The CRC Model Constitution Document is a company constitution and details standard procedures for company organisation⁴²;
- The CRC Model Participants Agreement is a template contractual

³¹ Clause 4.3. Model Collaborative Research Agreement No1. See

<http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=4&lv2=0&lv3=0&lv4=0>

³² Ibid Clause 5.1.

³³ Ibid Clause 5.2.

³⁴ Clause 4.3. Model Collaborative Research Agreements No.4 and No.5. See

http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_4_Ink.doc and

http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_5_Ink.doc

³⁵ Clause 5.1. Model Collaborative Research Agreements No.4. See

http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_4_Ink.doc

³⁶ Ibid Clause 5.2.

³⁷ <http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=4&lv2=0&lv3=0&lv4=0>

³⁸ See <http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=4&lv2=0&lv3=0&lv4=0> and

http://www.innovation.gov.uk/lambertagreements/files/Lambert_Agreement_Outline.doc

³⁹ See <http://www.innovation.gov.uk/lambertagreements/index.asp?lv1=2&lv2=1&lv3=1&lv4=0>

⁴⁰ Ibid

⁴¹ See <http://www.ausicom.com>

⁴² See http://www.crca.asn.au/about_cracs/CRCIncTemplates2006.htm

agreement with set provisions and is focussed on the commercialisation of project IP⁴³. Project IP can either be jointly owned by the parties, owned by business/industry or through a trust arrangement where the CRC owns the beneficial interest and business/industry holds the legal interest on trust.

4 Guidelines and Compliance Rules:

European Commission Seventh Framework Programme- FP7

FP7⁴⁴ does not provide a template document, but provides a set of guidelines in the form of a checklist⁴⁵ with an accompanying guide to intellectual property rules⁴⁶.

In order to obtain funding for a collaborative project⁴⁷, parties must draft their own:

- Model Grant Agreement⁴⁸; and
- Model Consortium Agreement⁴⁹;

in compliance with regulations of the European Parliament⁵⁰. The terms of the consortium agreement cannot contradict terms of the grant agreement and must be signed before the grant agreement becomes operative⁵¹.

DESCA⁵² has provided a template version of a consortium agreement⁵³ in a comparative table format with the suggested clause in the left hand column and an explanation of definitions and the effect of the clause in the right hand column so that parties can assess clause suitability.

⁴³ Ibid

⁴⁴ See http://cordis.europa.eu/fp7/home_en.html

⁴⁵ See 'Checklist for a Consortium Agreement for FP7 projects' at ftp://ftp.cordis.europa.eu/pub/fp7/docs/checklist_en.pdf

⁴⁶ See 'Guide for Intellectual Property Rules for FP7 projects' at ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf

⁴⁷ See Article 1. *Regulation (EC) No 1906/2006 of the European Parliament and of the Council of 18 December 2006 laying down rules for the participation of undertakings, research centres and universities in actions under the Seventh Framework Programme and for the dissemination of research results (2007-2013)*, Official Journal of the European Union L 391/1, 30.12.2006 at <http://cordis.europa.eu/documents/documentlibrary/90798681EN6.pdf>

⁴⁸ See Articles 18 and 19. Ibid

⁴⁹ See Article 24. Ibid

⁵⁰ Ibid

⁵¹ Guide to Intellectual Property Rules for FP7 Projects Version 28/06/2007, page 30 at ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf

⁵² See <http://www.desca-fp7.eu/the-desca-core-group/>

⁵³ DESCA The Simplified FP7 Model Consortium Agreement Version 1 May 2007 at http://www.desca-fp7.eu/fileadmin/content/Documents/DESCA_version_1_webversion_May_2007.doc

The Commission of the European Communities – Voluntary Guidelines for Universities:

The Commission of the European Communities has produced guidelines⁵⁴ for the management and transfer of IP arising from publically funded collaborative projects.

The guidelines are meant to establish ‘good practices’ for publically funded collaborative research contracts and contain general advice on non-exclusive licensing or assignments and advocates that universities/research institutions should reserve the right to publish IP results in collaborative agreements⁵⁵.

The Crest OMC Expert Group Report and the Crest Cross-Border Collaboration Toolkit:

The Crest OMC 2nd Cycle Expert Group on Intellectual Property⁵⁶ has developed a cross-border toolkit which provides explanation and commentary on IP ownership and rights issues on a comparative basis between European Union member states. The toolkit originated in their report *Cross-Border Collaboration Between Publically Funded Research Organisations and Industry and Technology Transfer Training*⁵⁷.

The Toolkit⁵⁸ consists of:

- A ‘First Step’ which is an online interactive checklist of questions for deciding a suitable position for ownership of the IP rights, looking at issues such as the importance of results for future activity, exploitation of the results, who conceived the project, the purpose of the project and why the respective business/industry and university parties want to fund or carry out the project⁵⁹;
- A ‘Second Step’ which provides guidance on cross-border issues regarding IP rights and ownership, negotiations, funding, confidentiality, publication and the protection and enforcement of IP rights⁶⁰;
- Fact Sheets which explain each member states position on IP rights that can be obtained from universities/research institutes⁶¹ in another

⁵⁴ See Commission of the European Communities, *Commission Staff Working Document Voluntary Guidelines for universities and other research institutions to improve their links with industry across Europe*, page 2 at http://ec.europa.eu/invest-in-research/pdf/sec2007449_en.pdf

⁵⁵ Ibid

⁵⁶ See Report of the CREST OMC Expert Group on Intellectual Property 92nd Cycle) *Cross-Border Collaboration Between Publically Funded Research Organisations and Industry and Technology Transfer Training*, 1 September 2006 pages 1 and 9 at http://ec.europa.eu/invest-in-research/pdf/download_en/crestreport.pdf

⁵⁷ Ibid

⁵⁸ See http://ec.europa.eu/invest-in-research/policy/rd_collab_en.htm

⁵⁹ See the First Step Interactive Tool at http://ec.europa.eu/invest-in-research/policy/rd_collab_en.htm

⁶⁰ See the Second Step Interactive Tool at http://ec.europa.eu/invest-in-research/pdf/download_en/secnd_step.pdf

⁶¹ See Report of the CREST OMC Expert Group on Intellectual Property 92nd Cycle) *Cross-Border Collaboration Between Publically Funded Research Organisations and Industry and Technology Transfer Training*, 1 September 2006 page 16 at http://ec.europa.eu/invest-in-research/pdf/download_en/crestreport.pdf

country⁶² and differences between the member states that impact on the ownership of IP rights;

- Five proposed IP ownership positions between business/industry and university/higher education parties⁶³; and
- The 'Intellectual Property Right Interactive Visualisation Tool' enabling users to select two member state countries and obtain a comparison of legislative and legal positions in relation to IP ownership rights, the negotiation of IP rights contracts; the effect of funding on IP rights contracts; confidentiality and publication and the protection and enforcement of IP rights⁶⁴.

⁶² Such as patents copyrights, trademarks or designs

⁶³ See Crest Cross-Border Collaboration Decision Guide page 7 at http://ec.europa.eu/invest-in-research/pdf/download_en/introd.pdf

⁶⁴ See the Country Comparative Questionnaire Program at <http://ec.europa.eu/invest-in-research/policy/tool.htm>

Recommendations

Negotiating legal agreements for collaborative innovation projects is a complex and challenging task.

Our survey and study of Australian and overseas projects show that collaborative innovation and the transfer of ideas are often impeded and curtailed by problems and delays arising out of the negotiation and formalisation of agreements for collaborative research. Finalising agreements for collaboration can take longer than the actual project and frustrated parties may take steps to avoid the formalisation of collaborative research agreements⁶⁵.

The various template documents, constructed clauses or explanatory guidelines discussed in this submission are all useful in resolving these problems and more work should be done on these.

However, for the law to be a true enabler of innovation, merely relying on a particular drafting methodology or an online construction tool will not be enough. Used in isolation, they only ever provide a piecemeal and incomplete approach to streamlining the agreement process.

The seeds of our submission were raised in Paul A David's and Michael Spence's recommendation to create a government agency ("live public actors")⁶⁶.

It is submitted that such a government agency could be restructured out of IP Australia, re-named as 'Innovate Australia' and would be able to exercise powers beyond that envisaged by David and Spence, including but not limited to:

- The provision of government appointed 'innovation officers' who will manage and finalise research agreements for collaborative projects. These officers will be trained to facilitate the completion of collaborative research contracts, to balance and resolve issues between parties, to engage with the private sector and to implement collaborative research ideas into innovative outcomes. They will operate from a position focussed on achieving innovative development and unhindered by party bias;
- Managing and coordinating a national legal and policy framework of templates, clauses and guidelines to support collaborative innovation; and

⁶⁵ Lane, B. 2007, "Hi-tech research outpaces law", *The Australian*, Higher Education, 22 August 2007, p. 19. [online] available at <http://www.theaustralian.news.com.au/story/0,25197,22285146-12332,00.html>

⁶⁶ Professor Paul A. David, and Dr. Michael Spence, *Towards institutional infrastructures for e-Science: the scope of the challenge* at 11 at <http://www.oii.ox.ac.uk/research/publications.cfm>

- The agency should be supported by a national cross-sectoral Innovation Law Expert Group that links closely with DIISR and other relevant Departments, universities and business/industry groups. This Expert Group will design the legal and policy frameworks and align appropriate methodologies for the streamlining of collaborative research agreements.

The DEST funded Legal Framework for e-Research Project (<http://www.e-research.law.qut.edu.au>) at the Queensland University of Technology (to which we belong) is currently working on solutions to these issues.

Biographies

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Anthony Austin is a research officer for the OAK Law Project and the Legal Framework for e-Research Project at the Queensland University of Technology, Brisbane, Australia.

Anthony worked as a solicitor for 10 years in private practice before joining the OAK Law Project. He worked primarily in intellectual property and commercial law and has advised on:

- University level research, licensing and technology-transfer agreements and intellectual property policies;
- Copyright, patents, designs, trademarks, confidential information, intellectual property negotiations and licensing;
- Manufacturing and distribution licenses; and
- Franchising systems.

He has also worked with community legal services and is involved in a manufacturing business.

Anthony completed his Masters of Law degree at the Queensland University of Technology in 2007, focussing primarily on copyright and trademark law, patent law and commercialisation, international commercial transactions and media law.

Since joining OAK Law, Anthony has worked and advised on numerous OAK Law projects, including

- The Oak Law Project and Legal Framework for e-Research Project Report, *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context* (June 2007 - <http://www.oaklaw.qut.edu.au/reports>);
- The Queensland University of Technology and ARC Centre of Excellence for Creative Industries and Innovation Report, *Legal Aspects of Web 2.0 Activities: Management of Legal Risks Associated*

with Use of YouTube, MySpace and Second Life (July 2007 – See the Queensland University of Technology Faculty of Law: Intellectual Property Knowledge, Culture and Economy Project at <http://www.ip.qut.edu.au/>);

- The Oak Law Project Guide, *Copyright Guide for Research Students: what you need to know about copyright before depositing your electronic thesis in an online repository* (August 2007 - <http://www.oaklaw.qut.edu.au/publications>);
- The OakLaw Project and Legal Framework for e-Research Project Guide, *Legal Considerations for Data Management: A Guide* (September 2007 – not yet available for public consultation);
- The OAK Law Project Guide, *A Guide to Developing Open Access through your Digital Repository* and sample repository deposit licence for publications (September 2007 - <http://www.oaklaw.qut.edu.au/publications>);
- The OAK Law Project's *OAKList*; a web-enabled database containing information about publishing agreements and publishers' open access policies (Launched 7 February 2008 - <http://www.oaklist.qut.edu.au/>);
- The OAK Law Project Report, *Academic Authorship, Publishing Agreements & Open Access: Survey Results* (Soon to be released);
- The Queensland University of Technology and ARC Centre of Excellence for Creative Industries and Innovation Guide, *CCI Blog, Podcast, Vodcast and Wiki Legal Guide for Australia* (Soon to be released);
- The OAK Law Project and Legal Framework for e-Research Project *Streamlining Legal Frameworks for Collaborative Innovation in e-Research* to the Australian Federal Government's Review of the National Innovation System.

Anthony was also one of the recipients of the Queensland University of Technology Vice-Chancellor's Award for Excellence which was awarded to the OAK Law Project team in recognition of exceptional sustained performance and outstanding achievement in research; partnership and engagement; innovative and creative practice and leadership (31 October 2007).

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Brian Fitzgerald studied law at the Queensland University of Technology graduating as University Medallist in Law and holds postgraduate degrees in law from Oxford University and Harvard University.

He is a well-known Intellectual Property and Information Technology/Internet lawyer who has pioneered the teaching of Internet/Cyber Law in Australia. He has published articles on Intellectual Property and Internet Law in Australia, the United States, Europe, Nepal, India, Canada and Japan and his latest (co-authored) books are *Cyberlaw: Cases and Materials on the Internet, Digital Intellectual Property and E Commerce* (2002); *Jurisdiction and the Internet* (2004); *Intellectual Property in Principle* (2004) and *Internet and Ecommerce Law* (2007). Over the past seven years Brian has delivered seminars on Information Technology, Internet and Intellectual Property law in Australia, Canada, China, Brazil, New Zealand, USA, Nepal, India, Japan, Malaysia, Singapore, Norway, Croatia and the Netherlands. In October 1999 Brian delivered the Seventh Annual Tenzer Lecture - Software as Discourse: The Power of Intellectual Property in Digital Architecture - at Cardozo Law School in New York. Through the first half of 2001 Brian was a Visiting Professor at Santa Clara University Law School in Silicon Valley in the USA. In January 2003 Brian delivered lectures in India and Nepal and in February 2003 was invited as part of a distinguished panel of three to debate the Theoretical Underpinning of Intellectual Property Law at University of Western Ontario in London, Canada. During 2005 Brian presented talks in Germany, India and China and was a Visiting Professor in the Oxford University Internet Institute's Summer Doctoral Program in Beijing in July 2005. In 2006 he was nominated by DEST to attend and present as an Australian expert an OECD Workshop on Research Use of Patents held in May 2006 in Spain and in February 2006 was invited as international expert to present at an OECD Workshop on Open Educational Resources in Sweden. In April 2006 Brian was also invited to speak at the Fordham University International Intellectual Property Conference in New York and the Access to Knowledge (A2K) Conference at Yale University Law School. In April 2007 Brian organised the Knowledge Policy for the 21st Century Conference with the University of Western Ontario Law School in Canada and presented at the Fordham University International Intellectual Property Conference in New York. In May 2007 he organised the Legal and Policy Framework for the Digital Content Industry Conference in Shanghai China and in June presented at the Creative Commons iSummit in Dubrovnik Croatia. In July he organised an International Conference on the Legal Framework for e-Research held on the Gold Coast Australia and also

taught in the Oxford Internet Institute Summer School at Harvard University Law School.

Brian is a Chief Investigator and Program Leader for Law in the ARC Centre of Excellence on Creative Industries and Innovation and Project Leader for the DEST funded Open Access to Knowledge Law Project (OAK Law) Project looking at legal protocols for open access to the Australian research sector and the DEST funded Legal Framework for e-Research examining the legal framework needed to enhance e-Research. He is also a Program Leader for CRC Spatial Information. His current projects include work on intellectual property issues across the areas of Copyright, Digital Content and the Internet, Copyright and the Creative Industries in China, Open Content Licensing and the Creative Commons, Free and Open Source Software, Research Use of Patents, Science Commons, e-Research, Licensing of Digital Entertainment and Anti-Circumvention Law. Brian is a Project Leader for Creative Commons in Australia. He has organised numerous conferences on Intellectual Property and Internet Law in Australia, is a regular speaker at international and national conferences and has made a number of significant submissions to government in the area of Internet and IP Law.

From 1998-2002 Brian was Head of the School of Law and Justice at Southern Cross University in New South Wales, Australia and from January 2002 – January 2007 was Head of the School of Law at QUT in Brisbane. He is currently a specialist Research Professor in Intellectual Property and Innovation at QUT.



GROUP OF EIGHT

IN THE INTERESTS OF INNOVATION

TIME FOR A NEW APPROACH TO NEGOTIATING RESEARCH AGREEMENTS BETWEEN THE COMMONWEALTH AND AUSTRALIAN UNIVERSITIES

A supplementary submission from the Group of Eight
to the Review of the National Innovation System

April 2008

PREFACE

Concerns are held across the Group of Eight (Go8) that the standard terms sought by the Commonwealth when entering into research agreements with universities misunderstand the role and nature of universities; are unnecessarily onerous and impractical; often cause delay and uncertainty due to their complexity; and serve to stifle knowledge transfer and innovation by restricting the capacity of universities to disseminate the results of the sponsored research for public benefit.

This submission to the Review of the National Innovation System has been prepared by the legal counsel of all Go8 universities to propose options for addressing these issues. It has been endorsed by all Go8 Vice-Chancellors and complements the Go8's main submission ***Adding to Australia's capacity: the role of research universities in innovation.***

The Go8 believes that the Review presents an opportunity for the Commonwealth and the university sector to seek to reach agreement over a new set of principles to underpin research agreements—principles designed to ensure that Commonwealth/university research agreements serve to maximise efficiency, certainty and the potential for public benefit to flow from publicly funded research.

INTRODUCTION

Public universities occupy a unique place in society. Although they receive some public funding, they are not part of 'government' and although often large in corporate terms, they are not so much 'private' as non-profit bodies. Their independent role as teaching and research institutions is reflected by provisions in their enabling legislation which include references to 'free' and 'critical' enquiry, the 'dissemination of knowledge', 'promoting public debate', 'academic independence' and 'operating with integrity'. These goals reflect the general principle that universities should operate with academic freedom:

At its simplest, academic freedom may be defined as the freedom to conduct research, teach, speak, and publish, subject to norms and standards of scholarly inquiry, without interference or penalty, wherever the search for truth and understanding may lead.¹

This important function and role of universities is often not recognised by government in its various forms, by non-government organisations or private firms when they seek to commission research at Australian universities. Instead, the terms sought are often unduly onerous, complex, impractical and require protracted negotiation before the research can commence.

Any unreasonable restrictions upon the transparent conduct of research and its rigorous reporting reduces the standing of the institutions with a consequential detriment to all who engage universities to conduct research.

The Go8 believes that the contribution Australian universities make to the innovation system and society more broadly would be enhanced if the terms of all agreements governing Commonwealth/university research projects could be simplified, and if such agreements were consistently underpinned by principles designed to maximise the dissemination and take-up of the outcomes of university research.

This paper offers eight principles to stimulate discussion about the desirability and feasibility of Australia developing standard research contract 'agreements' or 'templates' which clarify and simplify the research contract negotiation process between the Commonwealth and universities.

¹ Report of the First Global Colloquium of University Presidents May 2005

PRINCIPLES

Proposed principles to underpin future research agreements between the Commonwealth and universities:

1. **Respect for the right to publish.**

The timely dissemination of research results from properly constructed research carried out by researchers, in publicly funded institutions such as universities, is a fundamental tenet of the concept of academic freedom.

2. **Intellectual property ('IP') created by universities should be owned by universities.**

Subject to limited exceptions, in order to encourage and recognise the creative endeavours of academics and to ensure that new IP is owned by the party which has the best chance of disseminating it in the public domain, IP created by universities should be owned by universities.

3. **Licences for background IP should be limited to those required in order to use the IP which is the outcome of the particular research project.**

The Commonwealth should not need a licence to modify, adapt or exploit background IP.

4. **IP warranties and indemnities must be reasonable.**

Government should not seek to transfer to universities all risk relating to the use of IP that results from research it funds, or any background IP it seeks the right to use.

5. **'No conflict of interest' clauses should not undermine the academic independence of universities.**

It is in the public interest for universities to be encouraged to be strong public research organisations which attract funding from many different sources to support the conduct of high quality research in diverse, often competing, areas.

6. **Suspension and termination rights should be reasonable.**

There is no justification for the Commonwealth engaging universities to perform important research on terms which are less favourable to universities than the terms which most commercial service providers would be prepared to accept.

7. **The Commonwealth should not seek to impose indemnities which extend beyond the reasonable losses that would normally be recoverable at common law and which may not be covered by a university's insurance.**

8. **The moral rights of academic authors must be respected.**

Recommendation

The Go8 recommends that the Review of the National Innovation System proposes that the White Paper that ensues includes a commitment to a whole of Commonwealth review of research contracting arrangements with Australia's universities.

Research agreements

The agreements that are contemplated by the principles outlined in this paper are those that provide funds for the original investigation of new knowledge, whether styled as research, grant or 'consultancy' agreements. However, those agreements that fund the application of existing knowledge or expertise of an individual academic to achieve particular targeted outcomes are more appropriately described as consulting arrangements and not all of the principles discussed are intended to apply to those agreements.

'Research' agreements originate from all aspects of the Commonwealth's operations, not just from 'traditional' research funding sources, and appear to reflect common drafting instructions. The stance taken by the Commonwealth, as the major funder of research in Australia, should not be underestimated—it resonates through State and private sector research funding agreements.

Whilst the strong, independent reputation of universities is relied upon when the research projects are awarded and research outcomes publicised, the actual funding agreements the Commonwealth uses often contain clauses that undermine the basic principles articulated in this paper. The agreements therefore often impede the objects and role of universities through clauses that are unduly onerous, impractical or ignore the context of the public place and role of universities.

Of further concern are the increasingly lengthy negotiations needed to reach agreement, and the consequent diversion of significant resources by both government and universities. Lengthy contractual negotiations distract both parties from their respective missions, and can lead to unnecessary time delays in commencing the research.

In other countries such as the UK and Ireland, the principles underlying research agreements with universities have been agreed between the sector and government through the adoption of model research contract templates.² In these countries, the principles underpinning the templates guide the negotiation of research contracts between universities, government and other non-government parties.

² <http://www.innovation.gov.uk/lambertagreements/> & <http://www.forfas.ie/publications/show/pub284.html>

Proposed principles to underpin research agreements between the Commonwealth and Australian universities

1. Universities must be allowed to publish

The timely dissemination of research results from properly constructed research carried out by researchers, in publicly funded institutions such as universities, is a fundamental tenet of the concept of academic freedom.

1.1 The validity and credibility of university research relies upon the fact that the academic environment fosters an open and independent approach, where staff are free to reveal and challenge theories, knowledge and understanding in accordance with internationally accepted scholarly norms. Significantly, outcomes from university research should be able to withstand scrutiny at all levels. These factors, combined with the profile and reputation of leading academic researchers, explain why external funding bodies seek to engage universities to undertake research.

1.2 Where university research is undertaken using external funding, whether from government or non-government sources, the dissemination of the research results should be a key objective or outcome. Any government or non-government body which provides funding for research is entitled to specify the scope of the research it intends to support, and to insist on controls to monitor the quality and timeliness of the work it is supporting.

1.3 However, any external funding body should not seek the right to alter, suppress or indefinitely delay publication of all or part of the outcomes of sponsored research. Nor should it seek to interfere in, or alter the content or conduct of sponsored research.

1.4 It is recognised that commercial considerations might sometimes require short, finite delays in publication. However, the right to publish the results of all research in a timely manner is a critical tenet of the concept of academic freedom and of the integrity of the research process.

2. Ownership of intellectual property (“IP”) created by universities rests with universities

Subject to limited exceptions, in order to encourage and recognise the creative endeavours of academics and to ensure that new IP is owned by the party which has the best chance of disseminating it in the public domain, IP created by universities should be owned by universities.

2.1 Research is undertaken by universities for the purpose of advancing knowledge in the hope of finding solutions to problems affecting the community, transferring new knowledge into the public domain and using it to educate and develop new generations of scientists and scholars. Universities are uniquely placed to undertake these activities.

2.2 Intellectual property is the outcome of intellectual endeavour. It can sometimes be registered, in the form of patents, designs and the like, and sometimes not, in the form of confidential information, know-how or even copyright. The creation of new IP can be visualised as adding links to a chain. Established researchers have developed their ‘chain’ over the years of their research career. If different ‘links’ in their body of knowledge and expertise are subject to different ownership regimes, then the creation, dissemination and future use of any new IP they and their associates create, and indeed the whole ‘chain’ they have developed, is potentially compromised. At a minimum it is unduly complicated, necessitating a review every time new research funds are received as to whether or not the researcher and his or her institution can comply with the terms of the corresponding research agreement. As many research agreements are for relatively modest amounts, if a true cost benefit analysis were undertaken, it would in many instances dictate that the research project in question was not viable, especially as the future development of the subject IP could be hindered.

2.3 Government is generally not established to create IP or to transfer new IP into the public domain. It is arguably not in the public interest for governments to claim ownership of IP created by universities, unless they seek to control that new knowledge, enlarge upon it and actively disseminate it. While government may require rights to use IP created by universities, it is not best placed or equipped to improve, disseminate or transfer IP into the public domain.

2.4 When a government funds research it may wish to receive the first disclosure of the outcome of the research and a right to use the copyright in research reports prepared by the universities for its purposes. In rarer cases, a government may also require a right to use other broader IP, such as patentable IP arising from university research. However, the right to use IP is to be contrasted with ownership of such IP.

2.5 Governments of many countries have accepted the proposition that universities own the IP they create as the universities are the most appropriate bodies to promote development and transfer of the IP. This proposition has been enacted in legislation such as the Bayh-Dole Act in the United States, with similar legislation in many European countries and others such as Japan and Israel. The positive impact of the legislation on the number of invention disclosures recorded by universities and translation of the research into the community is well documented.³

2.6 Notwithstanding the foregoing, the internal IP regimes of each university need to recognise that not all IP may be owned by universities, eg in relation to so-called ‘scholarly works’, or in IP that may have been created in whole or in part by students, honorary appointees or visitors. There may also be other forms of third party rights, not with government, where for various reasons IP is to be owned by the third party.

³ See for example, Levensen D. (2005) “Consequences of the Bayh-Dole Act”, *The Economist* (2002) “Innovation’s Golden Goose”, 12 December 2002

3. Broad background intellectual property licences

Licences for background IP should be limited to those required by a government in order to use the IP which is the outcome of the particular research project. A government should not need a licence to modify, adapt or exploit background IP.

3.1 Background IP is that created prior to or developed independently of a particular research project undertaken as a result of a funding agreement. Background IP may be owned by the university or a third party. It is in essence part of the 'chain' of research that has been created, often over many years and without necessarily any contemplation of the particular research project now being funded.

3.2 More broadly, to advance knowledge and meet the other goals of a public university, it is important not to encumber existing stores of knowledge merely to support one project at one point in time. This may happen, for example, where an exclusive licence to use that background IP (assuming that such a licence is within the capacity of the university) is granted to a funding body.

3.3 Broad compulsory background IP licences to a government that extend beyond what can reasonably be required to support use of project IP are problematic because:

- Universities will not always have the rights to be able to grant such licences. The background IP may not be owned exclusively by the university, although the university may have rights to conduct research using it. For example, if the research project uses data obtained under licence from a third party such as the OECD, the university cannot provide a licence to the government to 'modify, adapt and exploit' such data.
- Prior to a research project commencing it is often not feasible for a university to audit all possible categories of existing IP which may be used.
- The same background IP is often used in many different projects creating overlapping rights.
- Such extensive licences, which are not required for immediate use by the funding body to exploit the results of the research, reduce or jeopardise the university's freedom to deal with its own IP and mean that broad categories of university IP are rendered unavailable to be licensed to other parties and commercialised for the public benefit.

3.4 Therefore, access by government to any background IP used in a research project should be limited to those items that are required to enable the specific IP that is the outcome of the particular research project to be used.

3.5 Rights to background IP should only extend to items which the university is in a position to license. Even when this is the case it is unreasonable for governments to seek an extensive licence to modify, adapt or exploit background IP which has been used for a specific research project.

3.6 It is also unreasonable for governments to request that the university obtain such rights direct from a third party at the university's cost. In these situations the relevant university should be under an obligation only to advise government of the third party right and it should then be up to the government to negotiate the relevant licence it requires.

4. Broad intellectual property warranties and indemnities

Government should not seek to transfer to universities all risk relating to the use of IP that results from research it funds, or any background IP it seeks the right to use.

4.1 Broad warranties to the effect that background IP and any new IP created in carrying out a research project will not infringe the IP rights of any third party are a fiction and cannot be verified by universities.

4.2 The practical effect of the inclusion of provisions which require universities to indemnify government against any loss or liability it may incur as a result of its use of any project IP is that the government transfers all risks of potential challenges to rights in the background IP and the project IP to the university. This transfer of risk invariably occurs in the absence of funding commensurate to the risks involved.

4.3 There is risk inherent in conducting any research and in using and developing the outcomes. Universities generally accept the risks associated with conducting research. The risks associated with using and exploiting the outcomes of research should generally be borne by the party seeking to undertake the activities. It is unreasonable for government to seek to transfer the risk associated with its use of IP to universities.

4.4 This is particularly so as the universities will not have any role in or control over the use of those outcomes. Whereas, by contrast, the government is in a position both to ascertain the extent to which, if at all, its proposed use of those outcomes, may expose it to the risk of claims and to manage that risk.

4.5 Further, universities do not have the resources, including the financial resources, to carry out any substantive IP due diligence prior to commencing a particular research project. It would be impractical for them to do so even assuming it was possible to identify all background IP which would inform a research project. Nor is funding provided in research funding agreements to conduct due diligence at the level required to satisfy such a warranty. Even where IP searches are conducted, the results never provide 100% certainty that all third party rights have been identified.

4.6 The insistence on unlimited IP warranties and indemnities, especially when combined with the demand for broad background IP licences and ownership of project IP in a government's favour, simply purport to transfer all risk, and potentially none of the benefits associated with research, to universities.

5. 'No conflicts' clauses

Broad 'no conflict of interest' clauses undermine the academic independence of universities. It is in the public interest for universities to be encouraged to be strong public research organisations which attract funding from many different sources to support the conduct of high quality research in diverse, often competing, areas.

5.1 As a matter of principle, it is inappropriate to ask universities to warrant that nothing they do will conflict with the conduct of a particular project or the interests of a government department which funds a particular research project. Maintaining the independence of universities is essential to maintaining their academic integrity.

5.2 It is of benefit to the community for universities to conduct research in as many different areas as possible and unreasonable fetters on a university's right to conduct research should not be accepted. It is unreasonable, if as a result of a funding agreement, one research team accepts funding from a particular agency on terms which undermine the ability of other areas of the university to conduct related research activities. Beyond that, such clauses unreasonably proceed upon the premise that universities can at any time know of all the research projects which are being undertaken within them.

5.3 Government funding agreements should not contain a 'no conflicts' clause because:

- Each university is bound to carry out the funded work in accordance with the terms of the agreement, and it is implicit that the work will be carried in accordance with required academic practice. Such duties can also be captured in positive obligations to conduct research fairly and independently.
- Universities have codes for the responsible conduct of research, including a conflict of interest policy, in addition to the sector wide requirements of the Australian Code for the Responsible Conduct of Research.

6. Suspension and termination rights

Termination rights in funding agreements should be reasonable. There is no justification for the Commonwealth engaging universities to perform important research on terms which are less favourable to universities than the terms which most commercial service providers would be prepared to accept.

6.1 Termination rights in funding agreements should not provide a government with rights which are so broad that it can terminate or suspend the agreement any time at its discretion, especially in circumstances where no compensation is payable to the university as a result of the early termination for work undertaken or committed.

6.2 It could be argued that by reserving such broad rights for itself, a government renders its performance of the contract optional and therefore no valid consideration is provided for the university's promise to perform.

6.3 The problems with such broad termination rights in funding agreements from the perspective of universities include:

- Universities have no security regarding the provision of funding for the term of the contract.
- It is difficult for universities to manage their resources in relation to the implementation of projects.
- Universities either bear the risk of paying out staff commitments if agreements are terminated early or are required to impose similar terms in short-term staff appointment contracts. Offering such uncertain conditions compromises universities' ability to attract high quality academic staff to work on research projects.
- It is very difficult for the 'co-ordinating organisation' which receives the primary government funding for a project to negotiate a sub-contract with other collaborating universities on the basis that there is a back-to-back reflection of such onerous obligations. This undermines research collaboration between institutions.
- It is difficult to involve research students in projects which can be terminated part way through the student's research project, the completion of which is a requirement for the student obtaining a degree.

6.4 The common law rights to terminate for breach of contract should generally offer a government adequate protection under funding agreements.

6.5 Termination rights should be reasonable. If at any time the funding is prematurely withdrawn, other than as a result of the university's breach, the contract should provide for the university to be paid in full for work performed until the end of a reasonable termination notice period. Payments should also be made to compensate the university for any irrevocable commitments entered into prior to the date of termination.

7. Broad indemnities

It is unreasonable for the Commonwealth to seek to impose indemnities which extend beyond the reasonable losses that would normally be recoverable at common law and which may not be covered by a university's insurance.

7.1 A particular concern with regard to indemnities is that they are becoming increasingly broad and are applied in almost all agreements. Typically, they now cover any and all liability, loss, harm, damage and expense including legal costs (which are requested on a full indemnity basis) howsoever arising from:

- Breach of contract, including any breach of any warranties given.
- Use of the research outputs by the indemnified party (the Government).
- Any unlawful or negligent act or omission of the indemnifying party, its employees, contractors and agents.

7.2 Indemnities of this nature are unnecessary and unreasonable for the following reasons:

- At common law, each party to an agreement has legal rights which it can enforce against a breach of contract by another party. However, in order to be entitled to damages arising from breach of contract at common law, a party must show that its loss or damage was caused by the other party's breach, and that the damage was not too remote (in other words, that it was reasonably foreseeable).
- Second, if a party seeking damages has contributed to its own loss, that contribution is also taken into account in assessing damages at common law. The claiming party has an obligation to mitigate its loss, to prevent over-recovery of damages. This is a reasonable position and all parties can rely on it.
- However, an indemnity of the type normally found in research contracts goes beyond the common law position. In the Go8's view, once an indemnity extends to cover breach of contract and breach of warranties, questions arise about what the indemnity is really meant to cover. If the party wishing to rely on the indemnity is seeking to recover damages greater than those they would otherwise be entitled to under common law, we believe this goes too far and is generally unreasonable. It is especially unreasonable if this is to occur in a research collaboration focused on 'public good' outcomes. Similarly, if the claiming party relying on such an indemnity is looking to remove its own obligations in relation to contributory liability and mitigation, then this too is unreasonable.
- Finally, if an indemnity clause does extend a party's liability beyond normal common law liability, it is unlikely that such an additional exposure will be covered by insurance coverage.

7.3 In summary, the Go8 believes that there should be no need to require such broad and unreasonable indemnity clauses, especially given the adequate common law remedies that already exist and the other contractual rights normally agreed between the parties.

7.4 However, if an indemnity is considered necessary at all, we suggest that the type of indemnity clause which covers only unlawful or grossly negligent acts or omissions of a party, and which used to be the standard position for indemnities, should be sufficient.

8. Respecting the 'Moral Rights' of academic authors

The moral rights of academic authors must be respected.

8.1 Enacted as part of the 'Digital Rights Agenda' in Part IX of the Federal Copyright Act, sections 189 to 195AZR of the Act provide that creators of copyright works have the right:

- To be attributed for their work—the right to be credited when the work is used in certain ways such as reproduction, publishing or other communication to the public.
- Not to have work falsely attributed—either naming the wrong person as the creator of the work or crediting the creator of the work notwithstanding alterations that were not approved by the creator.
- To integrity of authorship—the right of the creator not to have the work distorted or materially altered in such a fashion as would result in the work (and the creator) receiving derogatory comment.

8.2 These rights are presumed to subsist in all works, with the expectation that they will remain with the creator. However, funding agreements and consultancy agreements issued from both Commonwealth and State agencies have required universities to procure a waiver of these rights from staff members involved in a project.

8.3 In the context of public universities guided by the principles outlined at the start of this submission, procuring such a waiver of rights goes to the heart of the academic employment contract. It verges on unlawful duress of the staff members involved. It is wrong in principle for university staff who are not artisans for hire but are respected for their academic qualities, experience and knowledge, not to be acknowledged for their work, and that such work could be altered without their consent.

8.4 The reasons advanced by governments for seeking a waiver of moral rights are often based on expedience and convenience. A government does not wish to go to the trouble of asking whether research may be edited, falsely attributed or materially altered. However, the law is quite plain that the assignment of other copyright does not affect the moral rights of the creators, and thus even in "consulting work for hire", university staff have a reasonable expectation that the moral rights granted by Federal legislation are not eroded.

8.5 Universities respect the difference between administrative reports outlining grant expenditures, milestones achieved and engagement with the research project as opposed to research reports and findings. For example, when reporting on a research project in an annual report, how a government reports its engagement with the university is a matter for it to determine, using the parts of the administrative report provided by the university it chooses to use.

8.6 Reports discussing the content of the research or its outcomes should not be altered to suit the needs of the funder especially where any alteration is expressly or impliedly attributed to the researcher. Such an alteration breaches fundamental rights of academic integrity and could indeed have the detrimental effect of altering the substance of the research.

8.7 As with unreasonable fetters on the right to publish, such a capacity on the part of a funding body debases the coinage of universities with consequential damage not only to them as research institutions but also to any third parties who seek to engage them to undertake independent and well respected research.

CONCLUSION

9.1 Governments typically invest public funds in research carried out in universities and other institutions to achieve social, environmental and economic benefits through advancing knowledge and understanding that might not occur in the absence of government support.

9.2 Private firms and other non-government organisations commission research in universities for a variety of reasons, but often the issues faced in the contract negotiation process are similar to those that arise with government agencies.

9.3 If sponsored research is to occur efficiently the rules that govern it need to be well understood by all parties involved and the processes for negotiating the funding arrangements must not be unnecessarily complicated and time consuming.

9.4 The rules need to recognise the appropriate rights and responsibilities, on the one hand, of the government or non-government 'sponsor' or 'purchaser' of the research services, and on the other, of the university and its employees as the providers of the research services.

9.5 Internationally, countries are recognising the importance to their innovation systems, in terms of maximising the public benefit of publicly funded research, of having in place contractual arrangements between research sponsors and universities which make the negotiating process as efficient as possible and which maximise the prospects of the IP and other outcomes of the research resulting in public benefit.

9.6 For these reasons the Go8 recommends that the Review of the National Innovation System proposes that the White Paper that ensues includes a commitment to a whole of Commonwealth review of research contracting arrangements with Australia's universities.

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**SUPPLEMENTARY SUBMISSION FROM
CSIRO TO THE
NATIONAL INNOVATION SYSTEM
REVIEW**

**AGREEMENTS BETWEEN THE
AUSTRALIAN GOVERNMENT AND
PUBLICLY FUNDED RESEARCH
AGENCIES**



June 2008

Introduction

In CSIRO's submission to the National Innovation Review (30 April 2008), CSIRO made the following comments ¹:

There is opportunity for IP management to be streamlined and based on common expectations and understandings particularly among players within the government sector or among those receiving government funding. CSIRO has experienced quite protracted and expensive commercial discussions over IP rights with various government departments and agencies. Negotiations are often taken out of the context of the research and its likely impact pathways. This should be avoided. Providing clarity about the roles and responsibilities of different players in the NIS with respect to commercialisation activities might also help ease this impediment, especially if this involves making a clearer distinction between IP ownership, benefit sharing and IP management responsibilities.

Recommendation

Simplify IP arrangements among government agencies as a priority.

A number of other submissions to the National Innovation Review have also drawn attention to the opportunity to improve the operation of this important aspect of the Innovation System, through reducing blockages in the contracting processes. In particular, the Group of Eight universities made a supplementary submission entitled "Time for a New Approach to Negotiating Research Agreements between the Commonwealth and Australian Universities (April 2008)". It is intended that this submission should be read in conjunction with the supplementary submission from the Group of Eight and the submission from the Department of the Environment, Water, Heritage and the Arts at the section entitled "Enhancing Australian Government Research Grant Contracts and Administration". As with CSIRO's main submission, we would be happy to respond to the Panel more fully, either orally or in writing, around any areas of this supplementary submission where further elaboration is required.

Scope - Agreements that are the subject of this submission ²

This submission is in relation to certain agreements between the Australian Government and Publically Funded Research Agencies (PFRAs) for the conduct of the following activities ³:

¹ See "Section 6.3 IP and Collaboration", at page 31 of CSIRO submission

² The Group of Eight submission was primarily in relation to *Investigative R&D*, and notes that not all of the principles that were put forward in the Group of Eight submission would apply to consulting (*Consulting and Technical Services*)

³ For reasons of continuity, adopting the wording used in the Supplementary Submission of the Group of Eight Universities

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- The original investigation of new knowledge (which will be referred to in this paper as *Investigative R&D*); and
 - The application of existing knowledge or expertise to achieve particular outcomes (which will be referred to in this paper as *Consulting and Technical Services*).

This submission by CSIRO is not directed towards ARC or NHMRC schemes for research grants to academic institutions. Nor is it intended to apply to larger collaborative structures between Australian Government agencies and CSIRO such as the Centre for Australian Weather and Climate Research, where it is obvious that the agreement arrangements need to be of a bespoke design (although some of the principles may be appropriate to such cases).

Context – CSIRO’s agreements with Australian Government agencies

Through contractual arrangements, Australian Government agencies are a major client for CSIRO’s R&D activities. In 2006/07, CSIRO received a total of \$114M under various sorts of collaborative R&D, grants, consultancies and testing contracts and the R&D conducted under these contractual arrangements represents over \$200M of total expenditure per annum. These activities are sourced by Australian Government Departments and agencies through a number of different procurement mechanisms, and through contracts that have various descriptors (“Funding Grant”; “Services Agreement”; Consultancy”).

At present, there is a low level of consistency of terms and terminology across agreements used by different Australian Government agencies and PFRAs, that are used for very similar or identical purposes – resulting in unnecessary complexity and transaction costs. The negative implications arising from the current scenario include:

- A reduced motivation by contractual parties to actively identify, and manage risks resulting from the use of IP;
- The consumption of significant (publically funded) commercial and legal resources in contract negotiation, leading to an unintended and perverse disincentive for Australian Government agencies and PFRAs to work together;
- To a lesser extent, increased administrative overheads in the Australian Government agencies and PFRAs and increased workload on ComCover staff to assess, and possibly underwrite, additional insurance coverage;
- Increased audit and reporting requirements through ANAO and other requirements in relation to contingent liabilities;
- The delay, and in some instances the abandonment, of important agreements that underpin the delivery of Commonwealth Government programs; and

-
- The perception amongst the research community that often the processes for organising legal agreements are an impediment to getting important R&D underway - and that PFRAs, such as CSIRO, are difficult to deal with.

Against that background, CSIRO proposes that the efficiency of contracting and negotiation of agreements would be significantly improved if standard form agreements based upon the principles described below were to be developed and promulgated for use by different Australian Government agencies and PFRAs, as the preferred contract formats. This would also enhance the effectiveness of the National Innovation System and of the impact of PFRA R&D focussed on Australia's national innovation priorities. This submission proposes a number of principles for this purpose. Standard form agreements developed (in collaboration with PFRAs) using these principles would also simplify the contract negotiation process between the Commonwealth and PFRAs.

Recommended Principles

CSIRO proposes the following principles for implementation in new standard form agreements for use between the Australian Government agencies and PFRAs. They would be applicable to all parties to those agreements:

A. Intellectual Property Principles

Applicable to both *Investigative R&D* and *Consulting and Technical Services*

The "Intellectual Property Principles for Australian Government agencies"⁵ should be adopted for the purpose of agreements between Australian Government agencies and PFRAs that are also Australian Government entities (e.g. as between *Financial Management and Accountability Act 1997* entities and *Commonwealth Authorities and Companies Act 1997* entities).

The Principles are recognised as being a broad policy framework which Agencies can implement in the manner that will enable them to achieve their business outcomes. For PFRAs, the business objective is to use intellectual property rights strategically to achieve the efficient and effective creation of impact and benefits for Australia. Whether for application to the areas of industry, society or the environment, implementation will include the identification of intellectual property and active management of the potential protection of this intellectual property. The business objective also requires the PFRA to commit to successful technology transfer and adoption to ensure the creation of impact from the R&D. There is intellectual property for which non-commercial pathways of knowledge and technology diffusion are the most appropriate pathway. For intellectual property that has strong commercial potential, commercial

⁵http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies

pathways are important as the route to maximising the social return. PFRAs need to be able to ensure intellectual property arrangements that permit commercialisation of that intellectual property on terms determined under market conditions. PFRAs will usually seek to share in equitable returns from the commercial benefits (including, in order to reinvest these revenues in further R&D activities - although the captured funds will only represent a relatively low proportion of R&D funding for PFRAs).

B. “Plain English” summary

Applicable to both *Investigative R&D* and *Consulting and Technical Services*

The intended relationship between each party should be summarised in “plain English”, in order that expectations are made overt and project officers and research personnel may clearly understand:

- the obligations of the parties during the conduct of the R&D and their respective roles in managing the R&D process;
- the expected deliverables; and
- the intended use rights by each party for the R&D outputs, in particular the planned pathways for creation of impact from the R&D.

Through this mechanism, the relevant project and research officers can:

- Ensure in advance of agreements being executed that the expectations of both parties as to the roles required to be played and the intended use by each party of the intellectual property are aligned and are capable of being delivered; and
- During the conduct of the R&D, be adequately informed as to their roles and responsibilities regarding the use of the IP from the R&D.

C. Licences to Background IP to be limited to that required

Applicable to both *Investigative R&D* and *Consulting and Technical Services*

Licences for background IP required by Australian Government agencies should generally be limited to the extent required for the licensee to use the new IP for the specific Commonwealth Government purpose which is the outcome of the particular research project in the relevant field (that is, CSIRO generally agrees with Principle 3 of the Group of Eight supplementary submission).

D. Indemnities to allocate liability in accordance with the common law

Applicable to both *Investigative R&D* and *Consulting and Technical Services*

The contractual allocation of risk as between Australian Government agencies and PFRAs should be aligned with common law. The common law provides a range of rights and remedies to a party which believes that it has suffered loss as a consequence of the acts or omissions of another party (including a contractual counterparty). These rights include the right to bring actions for breach of contract and negligence and the remedies include compensatory damages if such actions are successful.

Indemnities in many Australian Government agency funding agreements seek to extend the liability of PFRAs beyond common law liability. It is unclear why this is necessary or desirable in light of the Commonwealth Policy referred to below.

It follows that each party should be responsible for managing the risks arising from their use of the IP developed in the funded project (and any necessary background IP) and Australian Government agencies should not seek to transfer to PFRAs risks arising from such use. Conversely, nor should PFRAs seek to transfer risks conveyed from their conduct of the R&D to Australian Government agencies that are not involved in the conduct of the R&D.⁶

Additionally, in considering the warranty and indemnity provisions to be included in agreements between Australian Government agencies and PFRAs that are Australian Government entities, both parties need to respect the requirement **of the counterparty** to comply with *Financial Management Guidance No. 6 – Guidelines for Issuing and Managing Indemnities, Guarantees, Warranties and Letters of Comfort, September 2003*. PFRAs that are Australian Government entities seek their insurance cover from ComCover and do not have automatic coverage for contract indemnities:^{7, 8}

We will not pay for liability arising out of any indemnity unless the liability would have arisen in the absence of such indemnity (Clause 2.9.12).

E. Moral Rights

Applicable to both *Investigative R&D* and *Consulting and Technical Services*

CSIRO supports the position put in the Group of Eight submission on moral rights (Principle 8 in that submission). Put simply, the legislated moral rights of authors/inventors need to be respected by both contractual parties. Agreements should not (whether for administrative convenience, or otherwise) seek to transfer from the Australian Government agency to the PFRA the responsibility for securing broad moral rights consents from authors/inventors in relation to the project outcomes – it is necessary that both contractual parties have responsibility for respecting the moral rights of authors/inventors.

⁶ Except for the limited case where there is an explicit, identified risk that the PFRA is better placed to manage than is the Australian Government agency, the PFRA is capable of effectively managing that risk and chooses to accept an indemnity liability in relation to that risk.

⁷ http://www.finance.gov.au/COMCOVER/docs/MemberGuidanceIndemnities_04-05PDF.pdf

⁸ This is consistent with the Australian Government's policy on issuing indemnities as outlined in *Financial Management Guidance No. 6 – Guidelines for Issuing and Managing Indemnities, Guarantees, Warranties and Letters of Comfort, September 2003* (http://www.finance.gov.au/finframework/fc_2003_02.html)

F. Ownership of IP from *Consulting and Technical Services* and *Investigative R&D*

Intellectual Property is an important component of the capability of a PFRA. To maximise the use and impact of intellectual property arising from *Investigative R&D* commissioned by Australian Government agencies, ownership of that IP should be vested in the PFRA with the PFRA granting to the Australian Government agency a licence to the IP for appropriately specified purpose (which licence will commonly be for internal use within the Commonwealth including formulation of policy or guidelines, and reproduction of documents in an agreed form - but would usually not include commercial exploitation).

For *Consulting and Technical Services* agreements commissioned by Australian Government agencies, the known deliverable is embodied in copyright (for example a report and/or a computer program). Ownership of any novel IP that arises serendipitously from *Consulting and Technical Services R&D* should be owned by the PFRA as the party best placed to develop and exploit this IP.

G. Confidentiality and Right to publish IP from *Investigative R&D* and from *Consulting and Technical Services*

Scientific publication of new knowledge is a critical objective of PFRA's. In the case of much of the knowledge arising from *Investigative R&D* commissioned by Australian Government agencies, dissemination of scientific results is a key pathway for the intellectual property to have impact.

CSIRO generally supports the position put in the Group of Eight submission on publication of new knowledge from *Investigative R&D*. To ensure that IP rights are not inappropriately jeopardised, each party should have a right to ensure that there is no publication or disclosure prior to timely completion of a decision process regarding protection of the intellectual property. Thereafter PFRA's should be entitled to publish research results, provided that no confidential information of the Australian Government agency or of any third party is disclosed. Australian Government agencies' rights to keep information confidential should generally be limited to categories of information that are necessary for the agency to keep confidential, and should not generally extend to all research results.

H. Audit arrangements

Australian Government PFRA's are audited by the ANAO annually. For these PFRA's, the audit requirements that are found in standard form agreements from Australian Government agencies require a duplication of the auditing process that consumes significant administration resources. CSIRO proposes that for the purpose of improved efficiency, revised agreements provide for the Australian Government funding agency to be

able to rely upon the annual audit coverage by ANAO of the PFRA's rather than requiring a separate and additional audit process.

I. Operational issue during contracting: procurement issues arising from agreement provisions

During competitive procurement processes, bidders are requested to confirm that they will accept the Department's standard form contract, which, currently, often include indemnities which expand the bidder's common law liability. The refusal to grant a boilerplate indemnity may have an impact on the risk profile and competitiveness of a proposal from a PFRA, even though:

- It is as a result of Commonwealth policy (*Financial Management Guidance No 6*) that the PFRA is precluded from being able to comply with the Department's standard form contract; and
- That in relation to such risks, ComCover would have a common interest in the contractual risk and liability position of the parties.

To facilitate Commonwealth entities working together on various R&D projects (where it is, in other respects, both natural and appropriate that they do so) and so that PFRA's that are *Commonwealth Authorities and Companies Act 1997* entities are not at a disadvantage in governmental procurement processes as compared to competitors that do not need to comply with *Financial Management Guidance No 6*: it needs to be open to, and approved practice in, Australian Government agencies that during the evaluation of tenders a proposal from a PFRA that stipulates that it is only prepared to agree to indemnities that are restricted to those that comply with that PFRA's obligations under *Financial Management Guidance No 6* would not be marked down, on this basis, in comparison to a tender from an alternative supplier who provides indemnities that go beyond those permissible under the *Financial Management Guidance No 6*.

Related Issues

Costing and Funding

The principles outlined above are independent of the method of costing the R&D and of the funding model. Those two topics are, however, also important issues that need to be considered during contracting between Australian Government entities and PFRA's, to ensure transparency as to contributions being made and alignment of the objectives of the parties (directly relevant to Principle B, above). From CSIRO's submission to the National Innovation Review:

The Australian NIS would be greatly simplified if funding bodies invested in the full cost of the research they are supporting. Without this reform, it is not possible to identify the cross-subsidies that distort investments in the NIS.

At present, competitive funding programs in Australia operate as a system of highly leveraged funds that draw on block allocations to science agencies and universities to match program funding. It is not uncommon for research funders or agencies to leverage their funds two or three times (and occasionally higher) with the result that there is really very little new money to sustain the system. It is concerning that this has become the dominant mode of investment because it is producing serious distortions in the strategic roles of R&D providers and undermining their sustainability. This model of research funding results in marginal costing by the research providers and the subsidisation of research through other means; and it distorts the core purpose and roles of research organisations as they jettison their strategic research strategies in favour of shorter-term, near market research.

Fully costed research should not be confused with the cessation of co-investment approaches; these can, and should continue where there is alignment of collaboration objectives. However it is important to have transparency of the relative contribution of the different parties to ensure that co-investment involving government appropriations takes place only in accordance with generally agreed policy principles for the expenditure of such appropriation (Section 2) and in accordance with the defined roles of the co-investing organisations.

Summary of alignment of this submission and the Group of Eight Submission

The issues outlined in the Principles set out above have significant concordance with those included in the Group of Eight submission. A summary of the two sets of Principles is shown in Table One. CSIRO's proposals do not contradict any of the principles proposed by the Group of Eight and most of the proposals are in full alignment.

TABLE ONE: RELATIONSHIP OF THE PRINCIPLES PROPOSED BY CSIRO WITH THOSE PROPOSED IN THE GROUP OF EIGHT SUBMISSION

Principles proposed by CSIRO	Proposed by Group of Eight
A. "Intellectual Property Principles for Australian Government agencies" be used	
B. The intended relationship between each party should be summarised in "plain English"	
C. Licences to Background IP to be limited to that required	3. Licences for Background IP should be limited to those required in order to use the IP which is the outcome of the particular research project
D. Indemnities to allocate liability in accordance with the common law	4. IP warranties and indemnities must be reasonable
	7. The Commonwealth should not seek to impose indemnities which extend beyond the reasonable losses that would normally be recoverable at common law and which may not be covered by a university's insurance
E. Moral Rights	8. The moral rights of academic authors must be respected
F. Ownership of IP from <i>Consulting and Technical Services</i> and <i>Investigative R&D</i>	2. Intellectual property created by universities should be owned by universities
G. Confidentiality and Right to publish IP	1. Respect for the right to publish
H. Audit Arrangements	
I. Operational issue during contracting: procurement issues	
	5. "No conflict of interest" clauses should not undermine the academic independence of universities
	6. Suspension and termination rights should be reasonable



Legal Framework for e-Research Project

The face of global research is changing due to rapid advances in information and communications technology (ICT) and the rise of e-Research. National and international multi-disciplinary collaboration is now possible using a spectrum of advanced ICT capabilities that enhance and allow fast-paced, real-time and large-scale access to knowledge. Advances in ICT present enormous opportunities for Australian researchers.

The Legal Framework for e-Research Project led by Professor Brian Fitzgerald at QUT and funded by the Department of Education, Employment and Workplace Relations (DEEWR) is examining ways in which the legal framework can be made as dynamic and effective as the advancing technology. By investigating issues such as contractual frameworks, data ownership, access and reuse, IP licensing, privacy and liability the Legal Framework for e-Research project will analyse the role of law in the e-Research environment and make proposals for a more effective legal framework that can better enable the adoption of e-Research methods.

e-Research.law.qut.edu.au