

28-30 January 2007, Sydney Australia



SESSION NUMBER 14

**CHALLENGES OF IP RESEARCH INSTITUTES
COMMERCIALISATION IN ASIA-PACIFIC**

PHILIP MENDES



trading ideas

THE FUTURE OF IP IN ASIA PACIFIC



Research sector commercialisation challenges

- So many challenges and how they have been met
- We could mention:
 - Changing paradigms of the role of universities in research – there was once an expectation that universities being a public resource, IP should be licensed for free
 - Establishing tech transfer offices
 - Attracting highly talented and skilled leaders and staff for tech transfer offices



Research sector Commercialisation challenges

- We could also mention
- Creating a culture in universities and research institutes of
 - Identifying intellectual property and opportunities
 - Protecting intellectual property
 - Commercialisation awareness
 - Rewarding entrepreneurial scientists
- In the allotted 20 minutes, focus on two practical commercialisation challenges in the research sector:
 - Need for unambiguous ownership of IP
 - The funding gap
- In doing so, use these two challenges to highlight the increasing commercialisation sophistication of universities and the research sector



Need for unambiguous ownership of IP

- Research sector is marked by
 - Scientific collaboration between institutions
 - Collegiality of scientists in sharing the results of their research
- These are essential for the research sector to successfully innovate
- Innovation and invention is more likely when
 - Scientists collaborate
 - Scientists share the results of their research
- But it does result in the fragmentation of ownership of IP



Need for unambiguous ownership of IP

- To commercialise IP, the research sector needs to have ownership, or rights to IP
- It cannot license or assign IP unless it has ownership or rights
- If that ownership is fragmented
 - Ability to license or assign, and therefore to commercialise, may be blocked
- A licensee requires a license from a licensor entitled to grant the licensee
- A venture capitalist requires that the investee company have ownership of IP, or an exclusive license to IP, from an assignor or licensor entitled to grant the rights



Need for unambiguous ownership of IP

- How does that fragmentation occur ?
- Most common ways that fragmentation of ownership occurs are:
 1. Joint ownership with a research collaborator
 - Some critical part of the IP in the package of IP to be commercialised may be owned by a collaborator
 - May have been a collaborating research organisation in a component of the project many years previously, and long forgotten
 - Joint ownership results in fragmentation of ownership
 - University or research institute not having all the rights to the IP that it needs to commercialise



Need for unambiguous ownership of IP

2. Joint ownership with a student
 - A student may be included in the research team
 - Research team may be composed of 5 staff members, and one student
 - Results in IP being jointly owned 50% as to university or research institute, and 50% to student
 - Student may make 1/6th contribution, but has 50% ownership
 - Student has 50% stake, and may seek to take part in the negotiation of a transaction
 - Student has the power to veto the grant of a license or its terms
 - Again, joint ownership results in fragmentation of ownership



Need for unambiguous ownership of IP

3. Joint ownership or part ownership rests with a previous employer
 - Scientists are mobile from one employer to another
 - That mobility is a common way to progress careers
 - That mobility also results in a body of IP being created while employed at two (or more) different employers
 - There may be joint ownership between all previous and the current employer
 - Or, a previous employer may have sole ownership of a critical component of the IP sought to be commercialised
 - Again, fragmentation of ownership of IP
 - Again, impediments to commercialisation



Need for unambiguous ownership of IP

4. Joint ownership or part ownership arising from visiting scientists
 - Visiting scholars are scientists that take leave, or sabbatical, and spend that time at another university or research institute
 - When doing so, they contribute to the research at the university or research institute that they visit
 - IP becomes jointly owned by their employer, and the institute that they visit
 - Or, a critical component of the IP sought to be commercialised is owned by their employer
 - Again, fragmentation of ownership of IP
 - Again, impediments to commercialisation



Need for unambiguous ownership of IP

5. Part ownership rests with a recipient of biological material
 - Collegiality of scientists means that they share with colleagues the biological materials that encompass their IP
 - They equip another organisation to build on their research
 - They equip another organisation to solely develop and solely own what may be a critical part of the IP in the package of IP that is sought to be commercialised
 - Again, fragmentation of ownership of IP
 - Again, impediments to commercialisation



Need for unambiguous ownership of IP

- Joint ownership:
 - A joint owner cannot license or assign IP without the consent of the other joint owner
 - That roadblocks commercialisation
 - Commercialisation or its terms may be vetoed by the joint owner
- Sole ownership of a critical component by another person
 - The parcel of IP cannot be commercialised without ownership or access to that critical component
 - That roadblocks commercialisation
 - Commercialisation or its terms may be vetoed by the sole owner



Need for unambiguous ownership of IP

- So why not just solve it:
 1. Get a license from the joint owner
 - May be declined
 - May be offered - but on unrealistic terms
 2. Joint ownership or sole ownership may not be realised
 - May result in a due diligence defect in the course of the transaction, with the transaction having to be abandoned
 - May result in the devaluation of the transaction as some IP may have to be excluded
 3. May not be able to find a person whose consent is needed – a student from years past



Need for unambiguous ownership of IP

- The fragmentation of IP impeding commercialisation in this way is not to say that universities and research institutes should
 - Cease collaborating
 - Require new staff to discontinue previous research at a previous employer
 - Exclude students
 - Exclude visiting scientists
- These are not sensible or realistic ways of avoiding fragmentation of ownership and impediments to commercialisation
- These are necessary to innovate and invent



Need for unambiguous ownership of IP

- A decade ago, fragmentation and due diligence issues of this sort plagued almost every commercialisation opportunity from a university or research institute
 - Sometimes they impeded commercialisation opportunities and caused delay as due diligence defects were remedied (sometimes taking years)
 - Sometimes they road blocked commercialisation so that commercialisation had to be abandoned
- A mark of the increasing sophistication in the research sector that these fragmentation of ownership issues arise these days less often



Need for unambiguous ownership of IP

- Universities and research institutes have
 - An increased awareness of how these fragmentation defects and roadblocks happen
 - Sophisticated staff that recognise these due diligence defects and expertly avoid them, or fix them, as part of getting a technology ready for commercialisation
 - Sophisticated policies and procedures
 - Measures to ensure that collaborations address these issues
 - IP from students is assigned
 - IP from previous employers is secured
 - Research by visiting scientists is managed



Research Funding

- The single biggest challenge universities and the research sector has been how to fund research beyond public grant monies
- Grant monies can only take innovation and IP so far
- Grant monies are limited
 - Historically confined to funding basic research
 - Historically not available to fund applied / development research
- How was IP to be developed and taken beyond basic research,
 - into the applied / development phase
 - into a state that made it ready to enter the market and benefit the community?

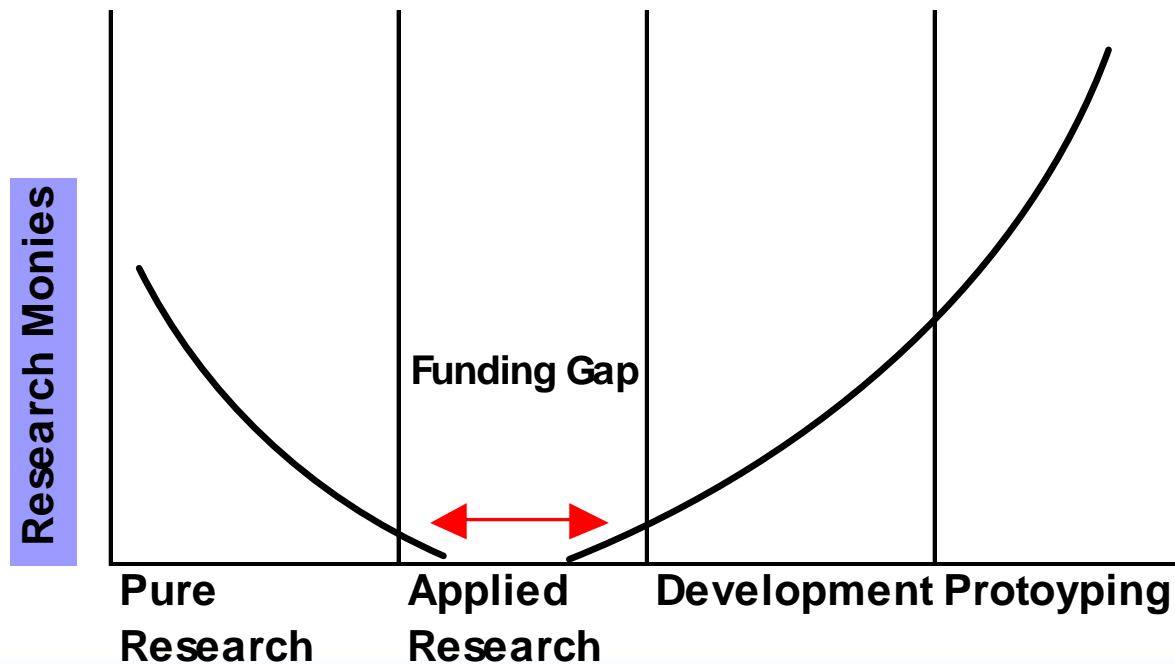


Research Funding

- Commercialisation by universities and the research sector traditionally by finding a commercial partner that
 - Would fund that further research
 - In return for that speculative funding, was granted a license to exploit
- Challenge with this traditional model was that public sources of funding for research only took R&D to what was still an infant stage of development
- So infant, that the state of development was unattractive for most commercial partners, which for their speculative investment, sought that the IP be at a more advanced state of development

Research Funding

- The Funding Gap
- What could be done to bridge that gap ?





Research Funding

- Much has assisted the challenge of bridging of that gap:
- Nurturing a venture capital industry in Australia that bridges the gap
 - Tax reforms that foster a venture capital industry
 - 2 for 1 Commonwealth funding to establish Innovation Investment Funds:
 - 9 funds established in Rounds 1 & 2 since 1998
 - Round 3 closed 2 January 2007 to establish 2 further funds
 - Total 11 IIF funds
 - Commonwealth funding to establish 4 Pre-Seed funds specifically focused on university and CRC technologies



Research Funding

- Those 13 (soon 15) funds have had a tremendous impact in bridging the funding gap
- Many worthwhile technologies that exhausted public sources of funding have been funded for further R&D
- But for the funding from those funds, those technologies would have died for the lack of funding
- But even then a micro funding gap still exists
- Those funds bridge the gap between public sources of funding and industry funding
- But there is still a funding gap



Research Funding

- The pre-pre-seed gap
- The gap between public sources of funding and where VC funds are prepared to speculatively invest
- The challenge to universities became a different one – how to bridge that pre-pre-seed gap
- Two universities met that challenge
- University of Queensland and University of Melbourne
- Established UniSeed
- A pre-pre-seed fund to
 - Take technologies from where public sources of funding ceased
 - Fund further R&D
 - To a point to make those technologies attractive investments to venture capital investors



Research Funding

- Fultech Pty Limited
- A University of Queensland technology – blocking electricity surges
- 2002 Uniseed investment
- 2002 Uniseed follow on investment
- 2003 Allen & Buckeridge Pre Seed fund investment
- 2003 migrated to US
- 2003 US\$7.7m Mayfield, CommVentures, and Allen & Buckeridge
- 2006 US\$12.3m Mayfield, CommVentures, Crescendo, and Allen & Buckeridge
- <http://www.mercurynews.com/mld/mercurynews/14556102.htm?template=contentModules/printstory.jsp>
- Total investment so far: In excess of US\$20m
- But for UniSeed and its pre-pre seed funding, a worthwhile technology that may have gone no further



Research Funding

- UniSeed – snapshot in in 2007
- Manages a fund in excess of \$60m
- Has made 25 investments
- Its investee companies have attracted in excess of \$100m in follow on investment
- Three university stakeholders
 - University of Queensland
 - University of Melbourne
 - University of New South Wales joined in 2005
- Other universities considering a similar model – ANU has set up ANU Connect



Just two examples

- These are just two examples of the many challenges that universities and the research sector have met
 - One a very practical one (unambiguous ownership of IP)
 - One having a very profound impact on the landscape for funding commercialisation enabling research for projects that otherwise would have reached a road block
- Many other examples
- All illustrate a very steep curve marking the increased sophistication of universities and the research sector in Australia