Technology Transfer
The Industry Perspective

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Objective

- Provide an insight into the mechanisms for collaboration with industry to bring about Technology Transfer
- To discuss the importance and benefits of industry participation in actualising ideas flowing out of the research effort
Forms of Technology Transfer

**Push Method**
- University Business Unit
- Patent Portfolio Promotion
- Licencing Out Research
- Spin offs
- Individual Venture (walking the technology)
- Government Edict
- Collaboration with other Institutes
- Selling & reinforcing ‘Specialities’
- EU Collaborative Projects
- Mandating Industry Participation

**Pull Method**
- Industrial Panels
- Industry Collaboration
- Industry Seek Licences
- Joint Ventures
- Researcher Headhunted (walking the technology)
- Government Sponsorship
- Industry Funded Research
- Technology Parks/Centres of Excellence

**Effective Technology Transfer can only occur using a mix of both forms**
Technology Transfer
An Observation

Technology Transfer is ultimately all about transferring the scientist out of the research area and into the development area – ie walking the technology.

The true engine behind technology development is the intellectual input derived from the world’s best researchers and scientists in a continuous flow of ideas towards needs. Hence technology transfer can only be achieved by transferring the best people NOT the accumulated scientific endeavour, no matter how impressive.

It is extremely difficult to predict which technology will win commercial success but much easier to predict which individual or team of leading scientists will deliver high quality ideas which are more likely to lead to commercially viable opportunities.

The key is getting the scientist, not the technology.
Forms of Intellectual Property

Research Focus

- Published papers
- Present at conferences
- Research Notes
- Collaborative Research

Commercial Focus

- Collaborative Research
- Prototypes/Products
- Copyright
- Maintainable IP
- Protected IP
Clear policies and guidelines need to be established on:

- Degree of Industrial Involvement in Research Undertaken
- Relative Importance of ‘Pure’ as opposed to ‘Applied’ Research
- Legal Protection of research results (Background IP) against sharing of research results to meet academic objectives
- Individual vs. Institute IP Ownership – possible conflict of interest
- Whether to participate actively in development company operations
- Equitable distribution of commercial returns
- Whether to take equity in development companies or take licence payment according to the financial resources of the commercial partner
- Handling of commercial in confidence
Research Institute Considerations

Research Institution Role

- Educating staff and students on IP and technology transfer
- Reviewing Invention Disclosures for patentability, the first step in IP protection and commercial application of research.
- Administering the registration and patent process.
- Negotiating confidential disclosures, options and licensing agreements
- Conducting various entrepreneurial activities (Push Method).
- Managing the license agreement portfolio and participate in new company formation (spin-offs)
- Promote the Institutes specialisations to outside companies and identifying research collaborators within the University
- Negotiate sponsored research agreements for such collaborations. Serve as “the bridge between science and business”.
Industry Considerations

Industry Role in technology transfer

- Have a clear understanding of their short, medium & long term technology needs
- Investigate & assess the Institutes ‘Specialisation’ and applicability to company needs for ‘best fit’ to minimise degree of commercial ‘forcing’ on the research
- Examine the Institutions policies and practices re. legal protection of research results (Background IP) and whether it is a clear leader in the chosen field
- Thoroughly review publication history of the chosen Institute and individual researcher/scientist to confirm leadership – scientific due diligence
- Is the Institution in question experienced in industrial collaboration or technology transfer – minimise future difficulties
- Does the Institution have a clear policy for IP ownership allowing individual researchers/scientists to benefit from their work
- Whether equity participation or licence fees are appropriate to stage of development of technology
- Need to balance commercial confidentiality considerations with need to publish
Industry Considerations

Focus Areas

- Select Right Institution - Researchers
- Clear Definition of research
- Technology Transfer Model
- Legal, Financial & Commercial

Actions Required

- Research & Development Strategy & Plan
- Market Research – Identify Technology needs/shortfalls
- Identify Appropriate Research Partner(s)
- Conduct Scientific Due Diligence – Peer Reviews
- Clearly define requirement and plan for delivering technology transfer
- Identify relevant technology transfer model
- IP agreements in place
- Equity sharing/Licencing Agreement in place
Industry Considerations

- **Development Risk**
  - Shared ownership of IP
  - Uncertainty of control over Background IP
  - Not leading Technology
  - State of Technology Development (bleeding edge?)
  - Patentability of Technology

- **Commercialisation Risk**
  - Readiness for Market
  - Integration with Existing Company Products/Channels
  - Uniqueness
Intellectual Property Evaluation

Invention Evaluation Process

1. Invention
2. Invention Disclosure
3. Review Prior Art

- Technology Transfer Committee
- Ad Hoc Technical Reviewers
- Review Commercial Need

- Patent Technology
- Release to Inventor
- Hold for Further evaluation
- Test Market
Commercial Assessment
Managing Risk

- Development Risk
  - Key personnel & contracts in place
  - Key R&D partnership agreed and funded
  - Protect IP and agree assignments

- Commercialization Risk
  - Sound Product Development Plan
  - Product Introduction Plan
  - Develop appropriate channel partners
Investment Stress Test

- Intellectual property owned
  - Considerable ongoing royalty and licensing opportunities
- Multi – product/multi-channel portfolio
  - Not solely reliant on any single product/channel
- Trade Sale exit (in event of disaster or other priorities)
  - Down side limited as could auction technology rights
    - multiple global players & IP readily transferable
Financing

- Internal Sources
- External Sources including ‘seed’ and ‘development’ funding
- Development cost sharing – Equity
- Government Sponsorship
- Commercial Partners
Use of Funds

- Due Diligence – Peer Reviews
- Legal/Accounting Fees
- Collaborative costs – Staff
  - Equipment
- Pre-marketing costs
- Detailed market research/Consumer trials
- Prototype/product Development
Control over Investment

- Institute may have Board representation
- Commercial Partner will look for Key researcher/scientist to participate (walk the technology)
- Appropriate Management is selected:
  - Performance bonus
  - Option scheme
- Detailed quarterly reporting to shareholders
Exit Strategy

- Options include:
  - Hold for growth and development, build value and for dividends
  - IPO
  - Trade Sale
Any Questions?